UNE REVUE MULTIDISCIPLINAIRE SUR LES ENJEUX NORMATIFS
DES POLITIQUES PUBLIQUES ET DES PRATIQUES SOCIALES.

Les ateliers de l'éthique
The Ethics Forum

A MULTIDISCIPLINARY JOURNAL ON THE NORMATIVE
CHALLENGES OF PUBLIC POLICIES AND SOCIAL PRACTICES.

VOLUME 13 NUMÉRO 1 HIVER/WINTER 2018

DOSSIER :

Changements climatiques, autonomie de la nature et souffrance animale : repenser les frontières entre l'éthique animale et l'éthique environnementale.

Climate Change, Autonomy of Nature, and Animal Suffering: Rethinking Borders Between Animal Ethics and Environmental Ethics

ISSN 1718-9977

VOLUME 13 NUMÉRO 1 HIVER/WINTER 2018

UNE REVUE MULTIDISCIPLINAIRE SUR LES ENJEUX NORMATIFS
DES POLITIQUES PUBLIQUES ET DES PRATIQUES SOCIALES.

Les ateliers de l'éthique
The Ethics Forum

A MULTIDISCIPLINARY JOURNAL ON THE NORMATIVE CHALLENGES
OF PUBLIC POLICIES AND SOCIAL PRACTICES.

La revue est financée par le Conseil de recherches en sciences humaines (CRSH) et administrée par le Centre de recherche en éthique (CRÉ)

The journal is funded by the Social Sciences and Humanities Research Council (SSHRC) and administered by the Center for Research on Ethics (CRE)

NOTE AUX AUTEURS
Merci de soumettre votre article à l'adresse jean-philippe.royer@umontreal.ca

Les articles seront évalués de manière anonyme par deux pairs. Les consignes aux auteurs se retrouvent sur le site de la revue (www.lecre.umontreal.ca/categorie/ateliers_ethique_ethics_forum/). Tout article ne s'y conformant pas sera automatiquement refusé.

GUIDELINES FOR AUTHORS
Please submit your paper to: jean-philippe.royer@umontreal.ca

Articles are anonymously peer-reviewed. Instructions to authors are available on the journal website (www.lecre.umontreal.ca/categorie/ateliers_ethique_ethics_forum/). Papers not following these will be automatically rejected.

CHANGEMENTS CLIMATIQUES, AUTONOMIE DE LA NATURE ET SOUFFRANCE ANIMALE : REPENSER LES FRONTIÈRES ENTRE L'ÉTHIQUE ANIMALE ET L'ÉTHIQUE ENVIRONNEMENTALE

CLIMATE CHANGE, AUTONOMY OF NATURE, AND ANIMAL SUFFERING: RETHINKING BORDERS BETWEEN ANIMAL ETHICS AND ENVIRONMENTAL ETHICS

ELY MERMANS
CANDIDAT.E AU DOCTORAT, UNIVERSITE DE MONTREAL ET UNIVERSITÉ PARIS 1 - PANTHÉON-SORBONNE/IHPST

INTRODUCTION

Du 17 au 19 mai 2017, le Centre de recherche en éthique (CRÉ) et le Groupe de recherche en éthique environnementale et animale (GRÉEA) organisaient une conférence internationale sur la question des « [c]onvergences et divergences entre éthique animale et éthique environnementale ». La conférence s'est tenue à Montréal, à l'Université McGill, sur le territoire traditionnel non cédé des Kanien'kehá:ka. Les articles qui composent ce numéro spécial reprennent en partie les communications qui y ont été présentées.

Ce dossier spécial « Changements climatiques, autonomie de la nature et souffrance animale : Repenser les frontières entre l'éthique animale et l'éthique environnementale » fait suite aux débats qui conduisent, dans les années 1980, à la rupture entre éthique animale et éthique environnementale. Lorsque les deux courants se forment au début des années 1970, ils se rejoignent dans leur opposition commune à l'anthropocentrisme des éthiques occidentales (voir Jamieson, 1998 sur le rôle qu'ont pu jouer les traditions dites « continentales » et « anglo-saxonnes » dans la division entre les deux types d'éthique). Les éthiques anthropocentrées définissent la moralité d'une action en fonction des intérêts ou du bien-être humain que cette action peut promouvoir, réduisant la valeur des entités non humaines à leur valeur instrumentale. L'adoption de ce type d'éthique permet de justifier l'exploitation des animaux non humains et la destruction des milieux naturels à des fins humaines, incluant celles que les sociétés capitalistes modernes tendent à satisfaire depuis la fin du XVIII^{e} siècle. Ces sociétés, portées par un idéal de croissance économique infinie (Meadows *et al.,* 1972; Martin *et al.,* 2016) et l'industrialisation des moyens de production, sont aujourd'hui responsables à l'échelle de la planète d'un niveau de souffrance animale considérable (Sebo, 2018, ce dossier), de la diminution radicale des populations de

vertébrés (plus de la moitié ont disparu à l'échelle de la planète depuis les années 1970, la perte et la dégradation de leurs habitats par les activités humaines étant considérées comme les causes les plus directes; voir WWF, 2016), d'une homogénéisation et d'une perturbation accrue des communautés écologiques et des écosystèmes, des changements climatiques (IPCC, 2013), etc. En raison de l'aggravation de ces répercussions si concrètes qui concernent à la fois « animalistes » et « environnementalistes », les différends théoriques et les divergences politiques qui ont conduit à leur division en deux camps dans les années 1980 méritent d'être remises en question.

Dans la suite de cette introduction, je présente un bref historique du conflit entre éthique environnementale et éthique animale, puis les questions abordées par les textes de ce dossier.

LE « SCHISME » HISTORIQUE ENTRE LES DEUX ÉTHIQUES

Le texte de Richard Routley « Is there a need for a new, an environmental, ethic? », publié en 1973, est généralement tenu pour fondateur de l'éthique environnementale (voir par exemple Callicott, 1979; Jamieson, 1998; Mikkelson, 2018, ce dossier) – le texte d'Arne Naess « The shallow and the deep, long-range ecology movement. A summary », publié la même année, pose les principes fondateurs du mouvement de la *Deep Ecology* et est plus souvent associé à la constitution d'une écologie politique aux principes biocentristes et holistiques (Naess, 1973). L'article de Routley est surtout connu pour montrer, grâce à l'expérience de pensée du « dernier être humain sur Terre », les limites conceptuelles du principe libéral de non-nuisance – qui restreint la liberté d'agir au respect d'autrui et de soi-même – à prendre en compte les intérêts de la nature indépendamment des intérêts humains. Mais Routley y dénonce aussi le spécisme des théories libérales classiques. C'est contre un « chauvinisme humain », qui exclut à la fois les entités naturelles non *sentientes*[1] et les animaux non humains de la sphère des entités moralement considérables, que l'auteur appelle à créer un nouveau type d'éthique non anthropocentriste, une éthique dite « environnementale », à partir d'un cadre métaéthique original. Cette proposition d'éthique environnementale, comprise au sens large, n'a toutefois pas conduit à l'inclusion des questions d'éthique animale et d'éthique environnementale au sein d'un même courant.

Les débuts de l'éthique animale précèdent quelque peu l'article de Routley. Peu après la publication d'*Animal, Men and Morals* (Godlovitch *et al.,* 1971), Peter Singer développe sa critique du spécisme – la discrimination en fonction de l'espèce – dans « All animals are equal » (Singer, 1974), bientôt suivi d'*Animal Liberation* (Singer, 1975). Ces deux publications, associées aux premiers textes en faveur des droits des animaux (par exemple Feinberg, 1974; Regan, 1975; voir Jamieson, 1998, p. 43-44 pour une liste plus exhaustive), participent à la formation des premiers mouvements de libération animale et à la constitution d'une éthique non anthropocentriste, mais restreinte aux intérêts animaux et, en premier lieu, à leur intérêt à ne pas souffrir. En outre, la stratégie adoptée par

Singer, Regan et les autres ne passe pas par la constitution d'un nouveau cadre métaéthique (Jamieson, 1998; voir aussi Dussault, 2018, ce dossier). Il s'agit plutôt de montrer qu'il est possible et nécessaire d'étendre le cadre métaéthique occidental classique à de nombreux animaux non humains. L'appel de Routley est repris par les environnementalistes pour les aires de *wilderness* (par exemple Nash, 1976) et des entités ou des systèmes écologiques non humains (espèces, communautés, écosystèmes, etc.) (voir par exemple Rolston, 1975; Callicott, 1979). La prise en compte du statut moral des animaux sentients par les environnementalistes est limitée, mais, jusqu'en 1980, les porte-parole des deux courants conservent des rapports cordiaux suivant le principe de : « tu ne touches pas à la nature sauvage, je ne remets pas en cause les intérêts des animaux domestiqués et exploités » et vice-versa.

C'est en 1980 que la césure a lieu. D'abord avec le fameux article de John Baird Callicott « Animal liberation: a triangular affair », qui met le feu aux poudres en rejetant toute alliance possible entre le mouvement de libération animale et l'éthique environnementale héritière d'Aldo Leopold (1949) contre les théories morales anthropocentristes, de par leurs fondements théoriques et applications pratiques incompatibles (Callicott, 1980, mais voir Callicott, 1988 et surtout son « Introductory Palinode »).[2] Puis, en 1984, avec l'article de Mark Sagoff « Animal liberation and environmental ethics: bad marriage, quick divorce », discuté par plusieurs autrices et plusieurs auteurs dans ce dossier, qui vient entériner la division en insistant sur les différends pratiques des deux camps. Une première tentative de réconciliation est engagée par Mary Anne Warren en réponse à l'article de Callicott (Warren, 1983, citée par Callicott, 1988), mais il faut attendre 1992 pour qu'une réponse collective à l'article de Sagoff soit proposée du côté environnementaliste (Hargrove, 1992, voir aussi Zimmerman 1993). D'autres arguments en faveur d'une entente émergeront des deux camps à la fin des années 1990 (par exemple, Jamieson 1998, Varner 1998, Everett 2001) sans parvenir à mettre fin au « schisme » (Callicott 1988, p. 163).

Une exception notable est la direction prise à la même période par le mouvement écoféministe, formé au début des années 1980. En 1985, Marti Kheel, co-initiatrice du Feminists for Animal Rights, offre une première réponse écoféministe au débat qui déchire les deux éthiques, encore majoritairement représentées par des figures masculines et blanches. Kheel appelle à considérer « que la division entre le camp "holiste" et le camp "des droits des individus" n'est qu'une autre forme de dualisme, et propose à la place une vision holistique qui est concernée à la fois par l'individu et par le tout dont l'individu fait partie […], qui perçoit la nature […] comme comprenant des êtres individuels qui participent à un réseau dynamique d'interconnexions dans lequel les sentiments, les émotions et les inclinations […] jouent un rôle essentiel » (Kheel, 1985, p. 135, 141). L'appel de Kheel, l'organisation de plusieurs rassemblements féministes, écologistes et anti-spécistes à la fin des années 1980 (Gaard 1993) favorisent rapidement l'inclusion de la question de la libération animale au sein de la réflexion écoféministe (voir Gaard, 1993, p. 1-12 pour une reconstitution historique plus précise; voir le numéro spécial *Ecological Feminism* dans la revue *Hypathia*

(Warren, 1991) et le recueil dirigé par Gaard (1993) qui rassemblent les premiers textes publiés sur ces questions).

Reste qu'aujourd'hui, l'éthique environnementale et l'éthique animale représentent deux domaines de recherche distincts, avec leurs propres sociétés savantes (par exemple *International Society for Environmental Ethics*; *Oxford Center for Animal Ethics*), leurs journaux spécialisés (*Environmental Ethics*; *Journal of Animal Ethics,* pour ne citer qu'eux), leurs groupes de recherche (pour exemple, le groupe de recherche sur les humanités environnementales au sein de la Faculté des géosciences et de l'environnement de l'Université de Lausanne, en Suisse, et le groupe *Animals in Philosophy, Politics, Law and Ethics* (APPLE) en Ontario, au Canada) et un enseignement souvent dispensé de manière séparée et inégale dans les universités.

RECONSIDÉRER LE SCHISME HISTORIQUE ENTRE LES DEUX ÉTHIQUES

À l'échelle du Centre de recherche en éthique (CRÉ), à Montréal, l'organisation d'une conférence internationale sur les convergences et les divergences entre éthique animale et éthique environnementale a été motivée par trois projets de collaboration préalables entre les deux communautés. D'une part, l'organisation de deux journées d'études tenues fin 2015 et début 2016 : « Au-delà de l'éthique humaine », organisée par Valéry Giroux et Antoine C. Dussault, et « Value theory in environmental ethics: sentience, life, richness », par Gregory Mikkelson et Antoine C. Dussault. D'autre part, la création du Groupe de recherche en éthique environnementale et animale (GRÉEA) en décembre 2015. Les articles issus de la conférence internationale élargissent les débats qui ont eu lieu lors des deux journées d'étude et au cours des événements organisés par le GRÉEA.

Le premier article, « Conservation strategies in a changing climate—moving beyond an "animal liberation/environmental ethics" divide », par Clare Palmer, s'interroge sur les fondements de cette division historique dans le contexte des changements climatiques. Contre Sagoff (1984), Palmer soutient la possibilité de concilier les éthiques environnementales écocentrées et les éthiques animales « conséquentialistes sentientistes » dans le domaine de la conservation. L'autrice montre, grâce à différents exemples, qu'en lieu et place de l'opposition avancée par Sagoff, les diverses positions éthiques tendent à s'accorder sur les politiques à mettre en place dans un contexte de changements climatiques. Ce que ce contexte tend à rendre plus évidentes, ce sont les divisions internes aux deux camps – « *pro-wilderness* contre pro-espèces ou pro-écosystèmes » et « respect des droits des animaux contre maximisation du bien-être animal ». Considérant l'accentuation probable de ces divergences avec l'augmentation des effets des changements climatiques, Palmer appelle à s'intéresser aux nouvelles « alliances » et « oppositions » possibles entre environnementalistes et animalistes au-delà de leur polarisation en deux camps. L'étendue et les limites de ces alliances sont discutées par les trois articles suivants.

Le deuxième article, « Why animal welfare is not biodiversity, ecosystem services, or human welfare: toward a more complete assessment of climate impacts », par Katie McShane, remet en question l'absence de prise en compte du bien-être animal dans les politiques climatiques. McShane prend pour cadre d'analyse le V^e^ rapport du Groupe d'expertise et de conseil intergouvernemental sur l'évolution du climat (GIEC/IPCC, 2014a, 2014b). L'autrice note que dans ce rapport, le GIEC, chargé d'informer les décideuses et les décideurs politiques des réponses possibles à donner aux changements climatiques, se concentre exclusivement sur le bien-être humain, la biodiversité et les services écosystémiques. Or, McShane explique qu'à partir du moment où le bien-être animal se voit reconnaître une considération morale, son inclusion au sein d'une telle analyse politique se révèle indispensable. En son absence, l'irréductibilité des conséquences des changements climatiques pour ce bien-être par rapport à celles qui sont étudiées par le GIEC (c'est-à-dire les impacts de ces changements pour le bien-être humain, les services écosystémiques et la biodiversité) entraînent un risque de négligence du bien-être animal, voire de détérioration de celui-ci dans la lutte contre les changements climatiques.

Le troisième article, « Naturalness, wild-animal suffering, and Palmer on laissez-faire », par Ned Hettinger, tente de réconcilier les positions animalistes avec les approches de défense de la *naturalness* (traduit ici par « naturalité »). Hettinger propose à cet effet un critère de « respect pour une nature indépendante » (RNI) qui se veut une solution de rechange au critère d'obligation de Palmer (2010, 2015). Dans les deux cas, l'objectif de l'une comme de l'autre est de reconnaître à la fois les obligations morales relatives au bien-être animal, qui peuvent justifier des interventions massives dans la nature sauvage pour y réduire la souffrance animale (par exemple Horta, 2018, ce dossier), et le respect de la naturalité, qui favorise quant à elle une politique du « laissez-faire ». Une différence fondamentale entre les deux positions est que le RNI ne tient pas compte de la responsabilité historique des agents moraux et des agentes morales dans la souffrance animale. Le devoir d'assistance envers les animaux sauvages dépend, en premier lieu, du niveau de naturalité mis en jeu par une intervention dans la nature. Si l'intervention contrevient considérablement à l'autonomie de cette dernière celle-ci n'est pas moralement acceptable. Si, au contraire, le coût d'une intervention est nul, positif ou peu significatif pour la naturalité, l'intérêt des animaux à ne pas souffrir peut commander une intervention. Dans ce dernier cas, le RNI peut sembler préférable au critère de Palmer puisqu'il autorise des interventions ponctuelles à petite échelle par devoir direct envers les animaux, quelle que soit la responsabilité des agent·es à l'égard de cet état de souffrance.

Cette préférence donnée à la naturalité sur le bien-être animal est rejetée par Oscar Horta dans le quatrième article de ce dossier, « Concern for wild animal suffering and environmental ethics: what are the limits of the disagreement? ». Pour Horta, une intervention dans la nature sauvage est requise dès lors qu'elle permet de « réduire les torts subis par les animaux non humains […] [et] que cela peut se faire sans causer davantage de torts à d'autres » (Horta, 2018, ce dossier,

p. 86, notre traduction). L'argument interventionniste de l'auteur repose sur deux prémisses empiriques (voir Maris et Huchard, 2018, ce dossier, pour une présentation et une discussion détaillée de l'argument interventionniste). La première est qu'il y a dans la nature sauvage plus d'expériences de souffrance que d'expériences de plaisir. La deuxième est que ce déséquilibre est dû au type de reproduction privilégiée par les espèces animales sauvages (voir, pour une opinion contraire, Mikkelson, 2018, ce dossier). Horta avance que la stratégie reproductive des animaux à l'état sauvage suit généralement la règle du « produire beaucoup pour perdre moins » (ou « stratégie *r* » en biologie de l'évolution). Or, cette maximisation du nombre de descendants au-delà des conditions minimales de survie a souvent pour incidence d'imposer aux juvéniles une vie courte et terrible et, selon Horta, de créer un déséquilibre moralement inacceptable entre une poignée d'animaux adultes heureux et un nombre important de jeunes en souffrance. L'interventionnisme commandé par l'analyse d'Horta peut prendre plusieurs formes allant des actions qui ciblent les conditions d'évolution ou écologiques des espèces sujettes à cette « mauvaise reproduction » aux actions qui modifient les capacités biologiques ou génétiques des animaux individuels (pour mieux lutter contre les parasites, les prédateurs, etc., par exemple). Cet appel à intervenir massivement dans la nature rompt clairement avec les approches « naturocentrées » (Hettinger, 1994; 2018, ce dossier) et « écocentrées » (Mikkelson, 2018, ce dossier). Bien qu'Horta ne rejette pas toute possibilité d'accord avec ces dernières, leurs points de rencontre restent très restreints : on les trouve seulement en milieux urbanisés, en zones d'agriculture et d'élevage intensifs, et autres espaces naturels fortement modifiés et/ou dominés par les êtres humains. Ce retour à une division franche *à la Sagoff* entre écocentrisme ou « naturocentrisme » – dans les termes d'Horta – et approches conséquentialistes sentientistes reçoit une réponse dans les deux articles présentés ci-après.

La première réponse se trouve dans le cinquième texte de ce dossier, « Convergence and divergence between ecocentrism and sentientism concerning net value », par Gregory Mikkelson. L'auteur propose une autre analyse conséquentialiste de la souffrance animale dans le monde sauvage en démontrant qu'il est possible de calculer un taux de bien-être supérieur au taux de souffrance des animaux adultes et juvéniles dans la nature, que ce soit à leur échelle individuelle ou collective. Partant de ce constat, Mikkelson défend trois points de convergence entre théories écocentrées et théories conséquentialistes sentientistes, et un point de divergence. En ce qui concerne les points de convergence, l'auteur établit, en premier lieu, l'accord des deux positions sur le fait que le monde naturel sauvage est un endroit qui promeut ce qui est moralement considérable, que ce soit le bien-être animal ou l'intégrité des touts écologiques. En deuxième lieu, il présente la prédation par des animaux non humains comme l'un des piliers centraux à cette balance positive (au contraire d'Horta, 2018, ce dossier). En troisième lieu, Mikkelson montre qu'à l'inverse, « la prédation par les humains sur les animaux de bétail (*livestock*) implique une valeur nette négative » (Mikkelson, 2018, ce dossier, p. 102, notre traduction). De ces trois points d'accord, l'auteur tire cependant un « argument de convergence en faveur de l'écocentrisme », avantage qui se trouve renforcé par une tension possible entre

l'écocentrisme et le sentientisme en ce qui concerne la valeur que ces deux théories doivent attribuer aux conséquences produites par la croissance économique sur les entités porteuses de valeur intrinsèque (conséquences négatives dans le premier cas, positives dans le second cas).

Le sixième article de ce dossier, « Interventionnisme et faune sauvage », par Virginie Maris et Élise Huchard, propose une réponse non conséquentialiste à la thèse interventionniste. À l'instar de Mikkelson, les deux autrices défendent la conciliation possible entre « la protection du monde naturel et […] [le souci] pour la souffrance des animaux sauvages » (Maris et Huchard, 2018, ce dossier, p. 121). Cependant, à la différence du précédent auteur, elles ne posent pas leur critique de l'argument interventionniste sur une mise en balance des expériences positives et négatives des animaux sauvages. Les autrices défendent une approche pragmatiste pluraliste qui s'appuie sur le concept politique de « communauté souveraine » développé par Sue Donaldson et Will Kymlicka (2011). Ce concept vient justifier, chez Donaldson et Kymlicka, un principe général de non-intervention dans la nature par respect pour l'autonomie et la souveraineté des communautés formées par les animaux sauvages. Maris et Huchard proposent d'identifier la communauté souveraine à la communauté biotique et appellent ainsi à prendre en compte d'autres intérêts (par exemple l'autonomie des animaux) et d'autres valeurs, incluant des valeurs écocentrées (holisme, naturalité, etc.), dans l'évaluation de nos obligations à intervenir en cas de souffrance animale. Les autrices proposent en outre de résoudre les tensions entre ces différentes valeurs et ces différents intérêts non pas à partir d'un unique principe directeur, mais au moyen d'un processus de délibération politique qui favorise le dialogue entre plusieurs perspectives : axiologiques, politiques, épistémologiques (par exemple les analyses éthologique, physiologique, évolutive et écologique de la souffrance animale que présentent Maris et Huchard en réponse à la thèse interventionniste).

Cette approche pragmatiste pluraliste trouve un écho dans le travail de Mary Midgley présenté par Greg McElwain dans le septième article de ce dossier : « Midgley at the intersection of animal and environmental ethics ». McElwain développe une lecture originale du travail de Midgley grâce à une discussion du texte de Callicott (1988) « Animal liberation and environmental ethics: back together again ». Dans cet article réconciliateur, Callicott propose une interprétation de la philosophie de Midgley qui, bien qu'adéquate pour accorder éthiques environnementales et approches sentientistes dans un cadre moniste callicottien, nie la dimension pluraliste et pragmatiste de l'approche de Midgley. En particulier McElwain souligne l'absence de hiérarchie préétablie chez Midgley entre les systèmes de valeurs que constituent ce qu'elle nomme des « communautés mixtes ». Au sein des communautés mixtes, les humains et les non humains ont des interactions sociales et écologiques particulières. Or, deux points importants chez Midgley sont que, d'une part, ces communautés mixtes ne s'organisent pas entre elles de manière verticale et, d'autre part, qu'elles ne répondent pas expressément aux dualismes traditionnels « domestique/ sauvage », « humain/non humain », « nature/culture ». Ainsi, la nature de ces interactions sociales et écolo-

giques et la valeur qu'elle confère à leur communauté mixte ou à ses membres doivent être définies au cas par cas en tenant compte, en outre, du contexte social et politique propre à chaque situation.

Le huitième article, « The ethics and politics of plant-based and cultured meat », par Jeff Sebo, s'intéresse aux enjeux politiques, sociaux et moraux du développement industriel de viande végétale et synthétique. L'analyse de Sebo part d'un double constat d'échec. L'agriculture non industrielle et l'agro-industrie exclusivement portée sur la production végétale ne constituent pas des réponses satisfaisantes aux conséquences désastreuses de l'agro-industrie pour le bien-être animal, la santé humaine et l'environnement. La première ne peut pas produire des effets positifs à grande échelle (notamment parce qu'elle autorise la production de viande animale) et la deuxième n'est pas prête de renverser le plébiscite dont bénéficie actuellement l'élevage industriel. Sebo propose de considérer la production de viande végétale et synthétique comme une troisième voie pragmatique, capable d'offrir une solution efficace à court terme aux défis posés par la production industrielle de viande animale. La seconde partie de l'article discute les problèmes sociaux, politiques et moraux que cette substitution pourrait poser lors de sa mise en pratique.

Le neuvième article, « Welfare, health, and the moral considerability of nonsentient biological entities », par Antoine C. Dussault, s'interroge sur la stratégie « extentionniste » de certain·es biocentristes et écocentristes pour reconnaître un *bien propre* aux organismes individuels non sentients et aux touts écologiques (espèces, communautés, écosystèmes). Dussault reprend l'approche de Kenneth Goodpaster, qui fait de la possession d'un bien propre – ou « la capacité réelle à bénéficier ou à subir un préjudice d'un état de fait » (Dussault, 2018, ce dossier, p. 185) – une condition nécessaire à la considération morale d'une entité (Goodpaster, 1978). Or, pour les sentientistes, avoir un bien propre nécessite d'être porteuse·eur d'un bien-être (*welfare*). Cette position, défendue par Wayne Sumner (1996), est partiellement acceptée par Dussault. Suivant Sumner, l'auteur rejette la possibilité conceptuelle qu'un organisme non sentient ou un tout écologique soit porteur *du même type de bien propre* que les animaux sentients – c'est-à-dire qu'il possède un bien-être – en vertu de ses « capacités fonctionnelles ou de [ses] tendances téléologiques » (Dussault, 2018, ce dossier, p. 185). Contre Sumner cependant, Dussault propose de considérer ces capacités fonctionnelles et ces tendances téléologiques comme étant constitutives *d'un autre type de bien propre,* celui d'être en santé–capacité potentiellement suffisante selon l'auteur pour être candidat·e à la considération morale.

Enfin, le dixième article, « Delimiting justice: animal, vegetable, ecosystem? », par Angie Pepper, propose une clarification du concept de justice et des différentes options disponibles permettant aux environnementalistes de justifier l'extension du domaine de justice à des entités biologiques et écologiques non sentientes. Pour les animalistes, une action envers des organismes non sentients individuels – de manière classique, les plantes – et des écosystèmes – par exem-

ple, les lacs – peut subir une évaluation morale, mais elle ne peut pas être qualifiée de juste ou d'injuste. Pepper soutient que « seules les entités auxquelles des droits opposables (*enforceable claim-rights*) peuvent être attribués de manière adéquate sont éligibles à des droits qui relèvent du domaine de la justice » (Pepper, 2018, ce dossier, p. 212, notre traduction). L'autrice ne prétend pas offrir ainsi de réponse définitive au débat entre sentientistes, d'un côté, et biocentristes et écocentristes, de l'autre, sur cette question. En offrant un recadrage précis des discussions qui opposent les deux camps, l'autrice tend à souligner les difficultés rencontrées par les biocentristes et les écocentristes pour fonder le concept de justice en dehors d'un cadre sentientiste. Elle rappelle, cependant, qu'avant de conclure à une « défaite » des environnementalistes, il est nécessaire d'interroger les enjeux sous-jacents au débat : en effet, le gain, théorique ou pratique, que les entités non sentientes auraient à être intégrées au domaine de la justice peut se révéler finalement très restreint.

NOTES

[1] La *sentience* est un néologisme (du latin *sentio*, *sentis* « percevoir par les sens ») parfois interprété comme synonyme de sensibilité, mais désignant plus précisément la capacité d'éprouver des choses subjectivement, d'avoir des expériences conscientes.

[2] Disponible en ligne, "https://jbcallicott.weebly.com/introductory-palinode.html"

BIBLIOGRAPHIE

Callicott, John Baird, « Animal Liberation: A triangular Affair, » *Environmental Ethics,* vol. 2, no. 4, 1980, p. 311-338.

———, « Animal Liberation and Environmental Ethics: Back Together Again, » *Between the Species,* vol. 4, no. 3, 1988, art. 3. https://doi.org/10.15368/bts.1988v4n3.1

———, « Elements of an Environmental Ethic: Moral Considerability and the Biotic Community », *Environmental Ethics,* vol. 1, no. 1, 1979, p. 71-81.

Donaldson, Sue et Will Kymlicka, *Zoopolis: A Political Theory of Animal Rights,* Oxford, Angleterre, Oxford University Press, 2011.

Everett, Jennifer, « Environmental Ethics, Animal Welfarism, and the Problem of Predation a Bambi Lover's Respect for Nature, » *Ethics and the Environment*, vol. 6 , no. 1, 2001, p. 42–67.

Feinberg, Joel, « The Rights of Animals and Future Generations, » *in* William Blackstone (dir.), *Philosophy and Environmental Crisis*, Athens, GA, University of Georgia Press, 1974.

Gaard, Greta (dir.), *Ecofeminism: Women, Animals, Nature,* Philadelphia, PA, Temple Univ. Press, 1993.

Godlovitch, Stanley, Rosalind Godlovitch et John Harris, *Animals, Men and Morals: An Enquiry into the Maltreatment of Non-Humans,* New York, NY, Grove Press, 1971.

Goodpaster, Kenneth E., « On Being Morally Considerable, » *The Journal of Philosophy,* vol. 75, no. 6, 1978, p. 308. https://doi.org/10.2307/2025709

Hargrove, Eugene C. (dir.), *The Animal Rights/Environmental Ethics Debate: The Environmental Perspective,* New York, NY, State University of New York Press, 1992.

Hettinger, Ned, « Valuing Predation in Rolston's Environmental Ethics: Bambi Lovers Versus Tree Huggers, » *Environmental Ethics,* vol. 16, no. 1, 1994, p. 3-20.

IPCC, Annex V: Contributors to the IPCC WGI Fifth Assessment Report, *in* T. F. Stocker, D. Qin, G. K. Plattner, M. Tignor, S. K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex et P. M. Midgley (dir.), *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge, Royaume-Uni, Cambridge University Press et New York, NY, Intergovernmental Panel on Climate Change, 2013. http://www.climatechange2013.org/images/report/WG1AR5_ALL_FINAL.pdf

———, *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change,* Cambridge, Royaume-Uni, Cambridge University Press, 2014a.

———, *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge, Royaume-Uni : Cambridge University Press, 2014b.

Jamieson, Dale, « Animal Liberation is an Environmental Ethic, » *Environmental Values,* vol. 7, no. 1, 1998, p. 41-57.

Kheel, Marti, « The Liberation of Nature: A Circular Affair, » *Environmental Ethics,* vol. 7, no. 2, 1985, p. 135–149.

Leopold, Aldo, *A Sand County Almanac, and Sketches Here and There: With Other Essays on Conservation from Round River,* New York: Oxford University Press, 1949.

Martin, Jean-Louis, Virginie Maris et Daniel Simberloff, « The Need to Respect Nature and its Limits Challenges Society and Conservation Science, » *Proceedings of the National Academy of Sciences,* vol. 113, no. 22, 2016, p. 6105-6112. https://doi.org/10.1073/pnas.1525003113

Meadows, D. H., D. L. Meadows, J. Randers et W. W. I. Behrens, *The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind,* New York, NY, Universe Books, 1972.

Naess, Arne, « The shallow and the Deep, Long-Range Ecology Movement. A Summary, » *Inquiry,* vol. 16, no. 1-4, 1973, p. 95-100. https://doi.org/10.1080/00201747308601682

Nash, R., « The Value of Wilderness, » *Environmental History Review,* vol. 1, no. 3, 1976, p. 14-25. https://doi.org/10.2307/3984308

Palmer, Clare, « Against the View that We are Normally Required to Assist Wild Animals, » *Relations. Beyond Anthropocentrism,* vol. 3, no. 2, 2015, p. 203-210. https://doi.org/10.7358/rela-2015-002-palm

———, *Animal Ethics in Context.* Columbia University Press, 2010.

Regan, Tom, « The Moral Basis of Vegetarianism, » *Canadian Journal of Philosophy,* vol. 5, no. 2, 1975, p. 181-214. https://doi.org/10.2307/40230566

Rolston, Holmes, III, « Is there an Ecological Ethic?, » *Ethics,* vol. 85, no. 2, 1975, p. 93-109.

Routley, Richard, « Is There a Need for a New, an Environmental, Ethic?, » *in Proceedings of the XVth World Congress of Philosophy 17th to 22nd September*, Sofia Press., p. 205-10. Varna, Bulgarie, 1973.

Sagoff, Mark, « Animal Liberation and Environmental Ethics: Bad Marriage, Quick Divorce, » *Philosophy & Public Policy Quarterly,* vol. 4, no. 2, 1984, p. 297-307. https://doi.org/10.13021/G8PPPQ.41984.1177

Singer, Peter, « All Animals are Equal, » *Philosophical Exchange,* vol. 1, no. 5, 1974, p. 103-116.

———, *Animal Liberation: A New Ethics for Our Treatment of Animals,* New York, NY, New York Review, 1975.

Sumner, L. W. *Welfare, Happiness, and Ethics*. Clarendon Press, 1996.

Varner, Gary E., *In Nature's Interests?: Interests, Animal Rights, and Environmental Ethics,* Oxford University Press, 1998

Warren, Mary Anne, « The Rights of the Nonhuman World, » *in* Robert Elliot et Gare Arran (dir.), *Environmental Philosophy: A Collection of Readings,* The Pennsylvania State University Press, 1983, p. 109-131.

Warren, Karen J. (dir.), *Ecological Feminism*, *Hypathia*, vol. 6, no. 1, 1991, p. 1-226.

WWF, « Risk and Resilience in a New Area, » World Wildlife Fund (WWF), 2016.

Zimmerman, Michael E. (dir.), *Environmental Philosophy: From Animal Rights to Radical Ecology,* Prentice-Hall, 1993, 1e édition.

CONSERVATION STRATEGIES IN A CHANGING CLIMATE—MOVING BEYOND AN "ANIMAL LIBERATION/ENVIRONMENTAL ETHICS" DIVIDE

CLARE PALMER
DEPARTMENT OF PHILOSOPHY, TEXAS A&M UNIVERSITY

ABSTRACT:

This paper argues that there is no simple rift between animal liberation and environmental ethics in terms of strategies for environmental conservation. The situation is much more complicated, with multiple fault lines that can divide both environmental ethicists from one another and animal ethicists from one another—but that can also create unexpected convergences between these two groups. First, the paper gives an account of the alleged rift between animal liberation and environmental ethics. Then it's argued that this rift was always exaggerated. For instance, animal ethicists who prioritize aggregate animal welfare have always converged with environmental ethicists in supporting certain cases of hunting and culling, and, in doing so, they have diverged from animal rights theorists, who generally oppose these practices. Pervasive threats such as climate change make it likely that environmental ethicists will also diverge from one another in terms of the conservation strategies they support, depending on what values they prioritize. For instance, conservation strategies that protect species may not necessarily protect other environmental values such as ecosystem flourishing or wildness. The paper concludes that conservation under climate change is likely to bring both new divergences and new convergences, and that these are unlikely to take the form of a rift between animal liberation and environmental ethics.

RÉSUMÉ :

Cet article soutient qu'il n'existe pas un clivage simple entre le mouvement de la libération animale et l'éthique environnementale quant aux stratégies de conservation environnementale. La situation est bien plus complexe, de nombreuses lignes de faille pouvant d'une part diviser autant les spécialistes d'éthique environnementale que les spécialistes d'éthique animale et, d'autre part, créer des convergences inattendues entre ces deux groupes. L'article fait d'abord état du prétendu clivage entre le mouvement de la libération animale et l'éthique environnementale, pour ensuite démontrer l'exagération de ce clivage. Par exemple, les spécialistes d'éthique animale qui priorisent le bien-être global des animaux se sont toujours accordé avec les spécialistes d'éthique environnementale pour approuver certains cas de chasse et d'abattage, divergeant par là-même des théoriciens des droits des animaux, qui s'opposent généralement à ces pratiques. De plus, des menaces omniprésentes telles que le changement climatique auront vraisemblablement pour effet de diviser les éthiciens environnementaux selon les stratégies de conservation qu'ils préconisent en fonction de leurs valeurs prioritaires. Ainsi, les stratégies de conservation qui protègent certaines espèces ne protègeront pas nécessairement d'autres valeurs environnementales telles que l'épanouissement des écosystèmes ou la préservation de leur état sauvage. L'article tire la conclusion que, dans le contexte des changements climatiques, la question de la conservation est susceptible de soulever à la fois de nouvelles divergences et de nouvelles convergences, lesquelles ne prendront probablement pas toutefois la forme d'un clivage entre le mouvement de la libération animale et l'éthique environnementale.

1. INTRODUCTION

This special edition of *Les ateliers de l'éthique*/*The Ethics Forum* focuses on whether animal ethics and environmental ethics do—or should—converge or diverge, and on how far there is, or should be, overlap between policies that would be morally required for the sake of animals alone (including humans) and those required for the sake of organisms (including animals), entire species, and ecosystems.

These concerns refer to debates in the 1980s about an alleged divergence—or even a rift—between environmental ethics on the one side, and animal ethics on the other. I will begin this paper with a brief overview of the basic structure of this alleged rift, drawing on Sagoff's classic 1984 paper "Animal Liberation and Environmental Ethics: Bad Marriage, Quick Divorce." Then I'll build on Varner's argument (1995, 2012) that this rift never really held in the way Sagoff claimed, because, philosophically, animal liberation encompasses contrasting ethical positions, most prominently sentientist consequentialism and animal rights theory. In some specific cases, such as therapeutic hunting, Varner claims, sentientist consequentialists would in fact line up with ecocentric environmental ethics positions in terms or policy or strategy, and diverge from animal-rights theorists. I'll argue that Varner's analysis holds not just for therapeutic hunting, but in many cases where we might expect to find an animal ethics/environmental ethics divergence—for instance, where invasive sentient animals threaten native animal species. Indeed, in terms of strategy or policy, although not in terms of value, the rift between sentientist consequentialists and animal rights theorists may be deeper than that between sentientist consequentialists and some ecocentric environmental ethicists.

I'll then move on to look at more recent ethical controversies relating to conservation strategies (I'll focus here on broader strategies, rather than on more specific policies) under climate change, using the case of the American pika as an example. Here, I'll argue, rather than a rift between environmental and animal ethics, we find something much more like multiple fractures or fault lines—and these not only divide animal ethicists from one another, but also divide environmental ethicists from one another. In terms of conservation strategies, climate change is likely to bring convergence between those with different underlying values, and divergence between some value positions that have, traditionally, been closely allied. This raises a new set of challenges and opportunities for both environmental and animal ethics. It also shows that the pervasive nature of anthropogenic climate change requires us to move beyond any simple idea of an animal liberation/environmental ethics divide.

2. THE HISTORIC RIFT BETWEEN ANIMAL AND ENVIRONMENTAL ETHICS

In 1984, Mark Sagoff published a now-notorious paper, "Animal Liberation and Environmental Ethics: Bad Marriage, Quick Divorce." The title of his paper

summarized, and the content of his paper reinforced, the idea of a rift between those (broadly) working in a philosophical animal liberation tradition, such as Peter Singer, and many of those working in environmental ethics. Those on the animal liberation side of this divide were taken to be arguing that possessing capabilities such as sentience conveyed not only moral considerability, but also a high level of moral significance (Singer, for instance, argued that nonhuman animals and people should receive equal consideration for similar interests). For animal liberationists, then, animals mattered for their own sake—and they mattered a lot. On the other side of the divide, according to Sagoff, are environmental ethicists—and by this he means broadly ecocentric environmental ethicists, such as Aldo Leopold, who focus on ecological systems, species, and wilderness (biocentrism, focused on the value of all individual living things, never really got a foothold in this discussion). On the environmental ethics side of the divide, then, species and ecosystems matter for their own sake. Sagoff's (1984, p. 304) classic statement of this view is as follows:

> Animal liberationists cannot be environmentalists. The environmentalist would sacrifice the lives of individual creatures to preserve the authenticity, integrity and complexity of ecological systems. The liberationist—if the reduction of animal misery is taken seriously as a goal—must be willing in practice to sacrifice the authenticity, integrity and complexity of ecosystems to protect the rights or guard the lives of animals.

So, animal liberationists must diverge from environmentalists (that is, ecocentric environmental ethicists) in practice, because animal liberationists must prioritize the lives and well-being of individual animals over the "authenticity, integrity and complexity of ecological systems." While ecocentrists would be willing to kill individual sentient animals that threaten the value of ecosystems, species, or wildness, animal liberationists would be required not only to reject such killings, but also (according to Sagoff) to intervene in ecosystems to reduce wild-animal suffering and save animal lives. Put like this, the rift seems absolute and the parties, irreconcilable: decisions made for the sake of animals just are in conflict with those made for the sake of ecosystems and species.

However, this claim was, I'll now argue, always exaggerated. In order to tackle the claim in its original form, I'll interpret "for the sake" of animals, species, and ecosystems in the most straightforward way—to mean that animals, species, and ecosystems are to be ascribed *moral considerability*. In the case of all three, there are competing accounts of why this might be so, but these differences, though generally important, don't need elaboration in this paper. And, although I'm skeptical about claims for the moral considerability of species, and even more so about those for ecosystems, I'll bracket this skepticism here. I'll discuss strategies to protect species and ecosystems *as if* they had moral considerability. I'll also consider strategies that focus on protecting *wildness*, which Sagoff includes in his idea of "environmentalism," since wildness—going back to Thoreau—has long been an important value in environmental ethics.

3. COMPLICATING THE RIFT: DIVERGING ETHICAL THEORIES

As a number of ethicists subsequently pointed out, Sagoff's (1984) portrayal of the rift was problematic. Most significantly, rather different theories, in particular rights theories and utilitarian theories, appear to have been collapsed into what Sagoff calls "animal liberation." Sagoff did, in fact, distinguish between utilitarian and animal rights positions. However, he argued that rights theorists were essentially committed to the same policies as utilitarians, commenting: "The appeal to rights simply is a variant on utilitarianism" (Sagoff 1984, p. 305). But this missed key differences between these two philosophical traditions.

To make this clearer, I should explain the terms I will be using here (terms that, inevitably, will still oversimplify). I will call one tradition *sentientist consequentialism*. Here I'm trying to capture a range of consequentialist, mostly utilitarian views, largely focused on aggregate animal welfare, that base moral considerability on the possession of capabilities such as consciousness, subjective experience, and the ability to suffer, and that attribute to many nonhuman animals high or very high moral significance. This includes the utilitarian positions adopted by Peter Singer and others, such as Frey (2012) and Varner (2012). The second tradition I'll call *animal rights theory*. Animal rights theorists and sentientist consequentialists have similar criteria—primarily sentience—for moral considerability, but for rights theorists, the rights of individual animals serve as constraints on attempts to maximize aggregate animal happiness or, more broadly, welfare. I take Regan (1984) as the leading exponent of this animal-rights view, but I also include other, more recent accounts of animal rights including Cochrane (2012) and Donaldson & Kymlicka (2011). Of course, sentientist consequentialism and animal rights are not the only approaches to animal ethics; but they have, to date, dominated discussion about an environmental ethics/animal ethics rift, and I'll focus on them here.

Animal rights theorists and sentientist consequentialists often do converge in practice. For instance, both normally reject intensive animal agriculture, since it violates animals' fundamental rights and causes significant unnecessary suffering, and both adopt policies to eliminate such practices. However, animal rights theorists and sentientist consequentialists frequently diverge when it comes to wild animals. And some of these divergences occur in the case of practices more widely thought to be standard flashpoints between animal liberation and environmental ethics, rather than between different kinds of animal ethics. Sagoff, for instance, comments on wild hunting as something "enthusiastically" practiced by Aldo Leopold, but as a practice that animal liberationists (in his view) would regard as morally unacceptable. However, as Varner (1995, 2012) argued in response, sentientist consequentialists could certainly accept hunting in some circumstances; in fact, we should *expect* policy convergence between sentientist consequentialists and holistic environmental ethicists in cases of what Varner calls "therapeutic hunting."

Varner (2012, p. 861) describes "therapeutic hunting" as "hunting that is designed to secure the aggregate welfare of target species across generations, the health and/or integrity of its ecosystem, or both." Certain species, often ungulates such as white-tailed deer, tend to overshoot the carrying capacity of their range. Without control by predators, or management by human hunters, their numbers will expand so much that not only will their ecosystem undergo significant negative impacts, but the deer themselves will suffer from malnutrition and vulnerability to disease during the overpopulation event. So, Varner argues, if predators are too few or absent, hunting deer in the right season both reduces deer suffering and protects ecosystem flourishing by reducing significant habitat damage (and so negative effects on other animals). Therapeutic hunting can thus improve aggregate animal welfare—a goal for sentientist consequentialists—as well as protecting ecosystems; so, sentientist consequentialism does not necessarily conflict with holistic environmental ethics.

Varner (2012, p. 866-868) also suggests that, if fewer animals die overall, Regan's rights position could be extended to allow him to accept therapeutic hunting too. This is based on what Regan (1984, p. 305) calls his "miniride principle"—that when "we must choose between overriding the rights of many who are innocent or the rights of the few who are innocent, and when each affected individual will be harmed in a prima facie comparable way," we should choose to override the rights of the innocent few. Varner suggests that this principle could be extended to include overriding the rights of an innocent few if doing so would prevent the *deaths* of many who are innocent (since preventable deaths are comparable harms to killings). However, this doesn't seem a plausible extension of Regan's view (or other standard rights positions). Regan himself maintains that wildlife managers should "defend wild animals in the possession of their rights" and that "minimiz[ing] the total amount of suffering wild animals will suffer over time" is "not the overarching goal of wildlife management, once we take the rights of animals seriously." Among the rights animals hold with respect to moral agents, according to almost all animal rights theorists, is the right not to be killed—and this includes the right not to be killed by hunting. For rights theorists like Regan, if wild animals suffer and die from malnutrition, or are killed by predators, there's no human obligation to act, since neither hunger nor predation can violate animals' rights. Rights only hold against moral agents; and only moral agents can violate them.

So, in the case of therapeutic hunting, strategies supported by sentientist consequentialists and animal rights theorists diverge. Rather than an animal liberation/environmental ethics rift, we instead find sentientist consequentialists converging with ecocentric environmental ethicists, while animal rights theorists adopt opposing strategies. And this isn't an isolated case. This divergence between animal ethicists, I'll now go on to suggest, extends beyond the issue of therapeutic hunting, and applies to many common, current, and highly controversial cases of wild intervention.

4. BAITING FERAL CATS IN AUSTRALIA

Invasive species, primarily brought by settlers from Europe, are a key environmental concern in Australia. One species regarded as particularly problematic is the feral cat. Descended from household pets, feral cats, according to a recent estimate, can now be found in 99.8 percent of Australia's land area, and their population (depending on droughts and other factors) fluctuates between 2.1 and 6.3 million (Legge et al., 2017). While cats are opportunistic carnivores, their diets include a variety of small native marsupials, birds, lizards, and amphibians. For this reason, they are widely argued to cause a significant threat to biodiversity in Australia (McGregor et al., 2015). According to the Australian Wildlife Conservancy (n.d.) feral cats each kill 5-30 native animals per day, and "have been implicated in most recent mammal extinctions." Feral cats are argued to contribute to the threat to species such as the bilby, the bandicoot, the bettong, and the numbat, and, as these species populations decline, the contributions that they can make to the flourishing of native ecosystems likewise diminish. Such concerns about the hunting activities of feral cats underpinned the announcement by the Australian government in 2015 of its *Threatened Species Strategy*, which included a plan to kill 2 million feral cats by 2020.

Killing feral cats, which are widely scattered across Australia, by techniques such as shooting and trapping is expensive and difficult to put into practice. The favoured alternative is poison bait, largely composed of 1080 (sodium monofluoroacetate). 1080 is a toxic chemical present in some native Australian plants, and therefore much (although not all) native wildlife has evolved to be immune to its effects, especially in Western Australia; but nonnative animals, including red foxes and cats, are killed by ingesting it. Since, however, feral cats are frequently slow to take up poison bait, ever more inventive ways of getting cats to ingest 1080 are being developed. These include a new bait called Eradicat, poisonous pellets injected into the cats' potential prey, and the Felixer grooming trap, which fires toxic gel onto feral cats' fur, which they then instinctively groom and, in doing so, ingest a fatal dose of 1080 (http://www.ecologicalhorizons.com/initiatives). While there's some debate about the effects of 1080, recent studies (e.g., Sherley, 2007) argue that it is not a particularly humane poison, especially not when used against predator species. In cats, 1080 appears to cause some hours of significant suffering before death.

At first sight, the poisoning of feral cats (assuming the bait is taken almost entirely by target species) looks like a classic animal liberation/environmental ethics case. We would expect ecocentric environmental ethicists to want to protect endangered species such as bilbies and bettongs; to want to protect and restore something like the "authenticity, integrity and complexity" of native ecological systems; and to perceive removing human-introduced cats as potentially a form of rewilding, which takes at least some human influence out of ecosystems, and thereby makes them wilder. But, to do this, humans are causing cats to suffer and die; this seems like something any animal liberationist should oppose.

However, on further thought, this conclusion is not so obvious. The Australian Invasive Species Council (2013), in supporting the use of 1080 to eradicate feral cats, makes a rather different—but not implausible—argument that again potentially pulls sentientist consequentialists apart from animal rights theorists:

> But even if we consider just animal welfare, the use of less-than-humane techniques may result in an overall reduction of animal suffering, benefiting more native animals than it harms introduced animals…protecting populations or species from invasive species also means that individual animals are protected from predation, starvation or habitat damage by invasive species—benefits for both conservation and animal welfare.

Here, again, there's the argument that killing sentient wild animals, even in a less-than-humane way, could result in less overall suffering and better aggregate animal welfare *if* the welfare of all the animals, including those on whom cats prey, is included in the calculation. For sentientist consequentialists, there's no reason to count only the suffering of poisoned cats and not the suffering of the cats' prey; suffering is suffering wherever it's found, and should be included in calculations of aggregate animal suffering. And since feral cats present a case of *invasive* species predation, the concerns about ecosystemic disruption often thought to attend arguments for *generally* intervening in predation don't seem to apply. Cats aren't native, so there's little likelihood that removing their predation will have ecosystem effects that cause more wild-animal suffering down the line.

Obviously, to make a judgment with any confidence about aggregate animal welfare here would require more empirical evidence (about whether, for instance, poisoning cats really does reduce overall predation or whether instead it creates niches to be filled by other cats; and whether, given other threats to wild animals, wild animal welfare over time actually is made worse by cats preying on wild animals). But it's at least plausible that, from the point of view of sentientist consequentialists, the delivery of 1080 poison bait to feral cats would be permissible, or, if sufficiently supported by empirical evidence, required. Animal rights defenders, on the other hand, would oppose the cat-culling policy. Culling feral cats violates their rights to life and causes them significant suffering. It treats the lives of cats merely as a means to the protection of species, ecosystems, wildness, and other animals. And, since cats are not moral agents, the suffering and deaths of other animals at their claws are not a matter of direct moral concern; the rights of prey animals are not being violated. So, even in what's apparently a rather typical case of potential conflict between environmental and animal ethics, we again actually find a divergence between two groups of animal ethicists, as well as a convergence of ecocentric environmental ethicists with sentientist consequentialists.

A further thing to note here is that while animal ethicists diverge, the culling policy can protect several different ecocentric values. So, it supports species

preservation (the goal, after all, is to protect native species); ecosystem flourishing (since protected species can continue to perform ecosystemic functions); and wildness (in the sense that removing human-introduced predators reduces human influence on an ecosystem). Culling feral cats, like therapeutic hunting, appears to have widespread theoretical support among environmental ethicists, as well as the support of sentientist consequentialists. Only animal rights theorists have strong ethical disagreements.

5. CONSERVATION STRATEGIES UNDER CLIMATE CHANGE: THE AMERICAN PIKA CASE

The cases discussed above indicate that, in relatively common conservation conflicts, some animal ethicists may line up with ecocentric environmental ethicists against other animal ethicists. This indicates that there's no bright line between animal liberation and environmental ethics in terms of conservation strategies. But climate change, I will now argue, creates *multiple* fault lines in conservation policies. In part, these fault lines stem from the peculiarly pervasive nature of climate change. Its pervasiveness means that traditional conservation strategies, such as setting aside ecological reserves, no longer necessarily protect the species that live in reserves, their ecosystems, or (perhaps) the wildness of places. As a result, conservation strategies under climate change may force different ecocentric values apart. Ethical concern for the sake of species does not necessarily lead to the same strategies as ethical concern for the sake of ecosystems; both may come apart from strategies to protect wildness value. As well as convergences between sentientist consequentialists and some environmental ethicists, there may also be convergences between some animal rights theorists and *other* environmental ethicists.

To discuss this at a very abstract level would, I think, be confusing. So, I will focus down on a case that may illustrate some of these fault lines: the case of the American pika. American pikas are specialist lagomorphs (mammals in the rabbit family) that normally live at elevation on talus slopes in the American West. The IUCN Red List describes them as "candidate indicator species for the effects of climate change." They are believed to be highly thermally sensitive, especially to high temperatures; they suffer from chronic heat stress and risk of hyperthermia at temperatures of 78 degrees Fahrenheit (26 degrees Celsius) and above (McArthur and Wang, 1974; Beever et al., 2016). Climate change, then, looks threatening to many American pika populations and ultimately to the species as a whole. Recent studies show some populations of pikas in the Great Basin have been extirpated, while others seem to have relocated at higher altitudes; it's suspected that these extirpations are climate related. A study by Henry et al. (2012, p. 8) concluded: "Limited thermal tolerance and restricted dispersal capacity may interact synergistically with future climate warming to inhibit recolonization of extirpated patches and reduce survival of resident animals, leading local populations into an extinction vortex."[1]

So, given these climate threats to the American pika, what conservation strategies are possible? Two obvious strategies are unlikely to be directly helpful in this case:

Reduce greenhouse-gas (GHG) emissions. While major reductions to GHG emissions (or the creation of major GHG sinks) are the primary way of significantly reducing climate change, holding out hope for this to occur is unlikely to help vulnerable animals like the American pika. Because the effects of GHG emissions are time lagged, even if there were to be significant emission reductions soon, some further degree of warming would still occur, and would be likely to have further negative impacts on vulnerable species such as American pika. And, although growth in global emissions is slowing (Le Quéré et al., 2016), there's no realistic prospect of significant global *reductions* in GHG emissions any time soon. In thinking about conservation strategies, we have no choice but to take a changing climate into account. While some forms of geoengineering may reduce temperatures, they raise significant problems, and I won't consider them here.

Traditional "restoration and reserve" strategies. Traditional ecological conservation focuses on what Sandler (2013) calls "restoration and reserve oriented" strategies that aim to protect the habitat of a species within its historic range, and (where appropriate) to restore members of the species to that range. While these strategies are still effective in some cases (for instance, where threats to species primarily come from direct human development and disturbance), as already noted, they aren't effective in the case of human disturbance to the climate, since here the historic range itself is changing. Much pika territory is already protected—but this protection can't protect pikas from climate change.

Given that these two strategies don't look helpful in cases like these, I'll instead focus on three other possibilities:

Doing nothing. This strategy just allows the effects of climate change to play out on individuals, populations, species, and ecosystems. Obviously, doing nothing isn't normally thought of as a conservation strategy—at least, not in the sense of conserving species. But doing nothing can be value preserving in certain ways—for instance, if limiting human intervention and "allowing things to unfold in their own way" (Mathews, 2003) are valued, especially if alternative options are for one reason or another ethically problematic. Doing nothing can be an active, deliberately chosen policy, rather than just being what happens when a choice is not made.

Facilitated adaptation. Facilitated adaptation (Thomas et al., 2013) refers to the deliberate anthropogenic genetic adaptation of wild species populations for conservation purposes, such as to counter inbreeding depression and to increase resistance to invasive diseases or to the impacts of climate change. There are different possible methods here. One involves hybridizations between differing populations of the same species. For example, deliberate hybridizations between

related subspecies of Florida panther and Texas puma to relieve inbreeding have already been carried out, apparently successfully (Pimm et al., 2006). Another possible method is to use gene-editing techniques such as CRISPR-Cas9 in wild populations. This technology, though, is still very far from being adopted in the field. We don't currently know enough about the ways in which genotype and phenotype are linked to have confidence in identifying and altering complex traits in wild populations, nor are we sure how such alterations would affect other traits. A trait such as *sensitivity to heat*, for instance, may well involve multiple genes, as well as possibly being underlain by complex epistatic interactions and influenced by local environments.[2] However, for the purposes of this paper, I'll just assume that either hybridization or gene editing could increase the resilience of vulnerable American pika populations to increasing summer temperatures. We do know that a few pika populations, living at lower altitudes, appear to possess a genetic variant correlated with adaptation to warmer environmental conditions (Henry & Russello 2013; NOCA 2012; Robson, Lamb and Russello, 2016). So, let's suppose that hybridizing these populations with less heat-resilient populations, or (less plausibly) drawing alleles from the more heat-tolerant populations and transferring them into the less heat-tolerant populations could help those populations adapt to warming temperatures. Doing this would certainly raise questions about risk, in terms of off-target effects on the adapted pikas themselves—at least in the case of gene editing. However, again, just for the purposes of this paper, I'd like to bracket these concerns about risk, and assume that this technology would be successful in achieving its goals without causing off-target effects. What I'm interested in here is the value/ethical questions and concerns raised by facilitated adaptation of wild populations *even when the adaptation is successful* in terms of achieving its direct goals.

Assisted migration. Assisted migration (sometimes called *assisted colonization*) is the practice of deliberately assisting populations threatened by climate change to move to suitable habitats, normally beyond their historic range. This strategy is especially suitable if the species is poor at self-dispersal or if there are barriers to its ability to move, and new suitable habitat exists or is emerging elsewhere (Hällfors et al., 2017). Assisted migration has been tried on a small scale with various species, including marbled white butterflies in the UK (Willis et al., 2009). And it's been explicitly discussed by conservation biologists as an option for the American pika, which is poor at self-dispersal, but for which there might be appropriate habitat elsewhere (Wilkening et al., 2015). Assisted migration of pikas raises many logistical challenges, but biologists investigating the possibilities consider the American pika a "good candidate species" for assisted migration (Wilkening et al., 2015, p. 230).

Doing nothing, genetically adapting species, and moving populations are by no means the only conservation strategies that could be used to help species threatened by climate change. Other strategies include bringing populations into captivity or into more-or-less managed climate refugia (e.g., Morelli et al., 2016); offering supplementary feeding (e.g., Derocher et al., 2013); managing environments to reduce climate impacts by, for instance, constructing shelters,

creating water supplies, etc.; or, for species for which it's possible, reducing *other* threats, such as hunting. But, for the purposes of this paper, I'll just focus on these three strategies: do-nothing, facilitated adaptation, and assisted migration, since, for the American pika and some other climate-threatened species, these are the most plausible ways of pursuing conservation under climate change.

6. CONVERGENCE AND DIVERGENCE IN CONSERVATION STRATEGY: THE PIKA CASE

To facilitate this discussion, I will use a table, pairing different strategic options with different ethical/value concerns (see table 1, below). This table is inevitably oversimplified, but I'm hoping that even a somewhat crude visual structure may nonetheless help to clarify my argument. In the far left-hand column are the different values/ethical positions I've discussed: the value of species, the value of ecosystems, the value of wildness, sentientist consequentialism, and animal rights theory. Across the top, I have placed different conservation strategies, beginning with two I have already considered—killing invasive animals and creating nature reserves—and then including the three that I'll go on to discuss in the pika case: do-nothing, facilitated adaptation, and assisted migration.

For context, I have filled in the first two columns to reflect the preceding discussion. Killing invasive sentient animals is a strategy likely to be either permissible or required from ecocentric positions that value species, ecosystems, and/or wildness (so, these squares in column 1 of the table are filled Y for Yes). Animal rights theorists will normally oppose killing invasive sentient animals (so, this square in column 1 is filled N for No). Sentientist consequentialists, however, will support culls if the evidence suggests, in any particular case, that overall aggregate animal welfare would improve as a result, and more so than it would with the adoption of an alternative strategy. Since this would have to be calculated on a case-by-case basis, I've put the Y here in parentheses. The second column outlines positions on the traditional "restoration and reserve strategy" mentioned earlier. Traditionally, creating nature reserves would be welcome from both environmental ethics and animal ethics perspectives. Creating reserves is likely to protect species and ecosystems; to preserve wildness (at least, more so than not creating nature reserves); to constrain human violations of wild animal rights, for instance, by preventing the killing or eviction of wild animals by habitat development; and to protect wild animals from human-originating welfare infringements. However, while in some cases nature reserves are still highly effective, in cases such as that of the American pika, as noted, the creation of nature reserves is not effective for conservation goals (that's why three further columns have been added to the table). In addition, there's a recent philosophical shift—a rise in the view, among some sentientist consequentialists at least, that creating protected nature reserves is really creating protected reservoirs of wild animal suffering. If reducing animal suffering is a goal, then, from this perspective, a "hands-off" reserve is not what's called for; instead, a more active, interventionist strategy is needed, where this can be done without producing

more suffering (e.g., Horta, 2010). While this is not a dominant view among sentientist consequentialists, I have put the Y in parentheses here to make clear that this is a potential worry from this position.

TABLE 1: POLICY CONVERGENCE AND DIVERGENCE, SUMMARY 1

Policies→ Values/ethical theories ↓	1. Killing sentient invasive animals to protect native animals	2. Creating nature reserves	3. Doing nothing: Pika case	4. Facilitated adaptation: Pika case	5. Assisted Migration: Pika case
Protection of species	Y	Y			
Protection of ecosistem	Y	Y			
Protection of wildness	Y	Y			
Animal rights theory	N	Y			
Sentientist consequentialism	(Y)	(Y)			

So, now let's use the American pika case to think through issues of strategic and policy-based convergence and divergence in environmental and animal ethics under conditions of climate change.

6.1 Pika strategy 1: Doing nothing

If traditional "reserve and restoration" strategies to protect the American pika won't work, because temperatures are rising even in nature reserves, the options available are either to do nothing or to turn to more interventionist strategies. If we do nothing, pika populations are likely gradually to become extirpated, as climate becomes less hospitable in the pika's historic range. Some populations will cling on in increasingly unfavourable conditions for a long time, but it's likely that the species will enter an *extinction vortex* (defined in footnote 2). Without more interventionist strategies, the species may not survive. Pikas also appear to play a significant role in their local alpine ecosystems: their practice of creating hay piles for the winter provides food and shelter for other species; their faeces fertilizes land that receives little other fertilizer (Aho et al., 1998). The impact on ecosystems of local or regional extirpation is less clear cut than the impact of extirpations on the species (since extirpations lead to extinction, but alpine ecosystems will go on without pikas in them). But, for a time, at least, the loss of pikas would mean that these alpine ecosystems are likely to be less flourishing or less complex (Sagoff, 1984) or less healthy (Dixon, 2016).

This, then, suggests that for someone who values species or ecosystems, doing nothing is a poor conservation strategy. If species are morally considerable—the view with which I am working here—then, other things being equal, we should do something rather than nothing, since anthropogenic species extinction is morally wrong. Something similar, although less strong, might be said for ecosystems. If ecosystems are morally considerable, then the loss of the pika is likely to be an ecosystemic wrong, given that pika functions are unlikely to be replaced in high-altitude ecosystems. From both these ecocentric value perspectives, we should adopt a strategy to save the American pika if we can—that is, we should do something, rather than nothing. However, doing something shouldn't come at the expense of causing greater value losses elsewhere—so it shouldn't make another species extinct, nor should protecting the pika's current ecosystem come at the cost of significantly undermining the complexity, integrity, or health of a different ecosystem. This is, therefore, a provisional rejection of a do-nothing strategy; it depends on what doing something would entail.

What about wildness? First, of course, wildness is not a morally considerable being or thing. But it can be valued intrinsically. And, for many ecocentric environmental ethicists and others, wildness is extremely important. Wildness has a significant role in conservation policy (for instance, in the 1964 US Wilderness Act) and in environmental ethics more broadly. Hettinger and Throop (1999), for instance, argue that we should value wildness (rather than ecosystem integrity and stability) intrinsically, and that this "is the most promising general strategy for defending ecocentric ethics," while Preston (2011, p. 464) maintains that "the presumption central to environmental ethics is that…the human independent processes are left largely intact."

However, since wildness has many interpretations, it can be at stake in different ways here. First, climate change itself may be thought of as a pervasive extension of human influence on a vast scale. There's no need to take a view as strong as McKibben (1989) does in claiming that climate change brings the "end of nature" to think that there are senses in which climate change reduces wildness. Climate change is an anthropogenic force that has affected both species and ecosystems. Those impacts may be of moral concern not just because they have, as it were, harmed alpine ecosystems and species such as the American pika. These impacts may *also* be of concern because humans are significantly influencing what happens to species and ecosystems—how, for instance, systems evolve (and this would be true of species and systems that *flourish* under climate change, not just of those that do less well). Human influence on how things turn out may alone be enough to constitute a loss of wildness in some senses of the term. On the other hand, climate change is not intended by humans, and, unlike the interventionist strategies considered here, it's not controlled or directed with a view to particular planned goals or outcomes. So, in this sense, some degree of human-independent nature—which, Hettinger (2018, this volume) argues, lies at the root of wildness value—persists through climate change. As Hettinger comments, that climate change may have increased the frequency of polar bears

mating with grizzly bears doesn't mean that if humans translocated polar bears to the Antarctic, there wouldn't be a significant additional loss of wildness.

If protecting wildness is of primary value, at least at first sight, non-interventionist strategies—of which "doing nothing" is an obvious example—are likely to be preferred. However, this isn't always true. In the case of culling feral cats, I suggested that removing invasive cats could *increase* wildness by removing a human impact—that of the invasive species—from the landscape. The pika case, however, is not obviously like this. It is just possible, though, that some kinds of intervention to save the pika could be justified on grounds of wildness—but only on some interpretations of the term. Suppose a "wild" landscape were understood *compositionally*—that is, as a landscape containing the set of species that would have been present without human activity or interference. This is not so implausible; some kinds of ecological restoration projects are justified by the argument that a landscape of native species is wilder than one lacking those species, even if extensive human interventions are needed to restore these native species. On this view, human intervention to retain pikas in a landscape would make the landscape wilder than if pikas were extirpated by climate change. So, it is *possible* that someone who prioritizes protecting wildness would support an interventionist species-protection strategy. But it seems much *more* likely that a protector of wildness would argue against active interventions, such as those being discussed here, since they exacerbate human influence on the environment and impose human plans and intentions on it, as I'll suggest below. On this view of wildness, interventions would make the loss of wildness through climate change worse; doing nothing would best protect wildness value.

Lastly, then, let us turn to the two ethical concerns that focus on individual animals: animal rights theory and sentientist consequentialism. What happens if we do nothing, and there is no intervention? As temperatures rise, pikas are likely to have more negative subjective experiences than under normal conditions; they will undergo chronic discomfort from heat and suffer more from hunger and thirst, as they will have to take shelter under rocks rather than go out foraging. In addition (though on some views this is not a *welfare* effect), climate change will shorten the lives of individual pikas, thus depriving them of the experiential goods of future life they would have had, and meaning that they will live shorter lives with fewer opportunities to carry out natural behaviour than is normal for members of the species (see Kasperbauer and Sandøe, 2016 for further discussion of whether killing is a welfare issue).

For sentientist consequentialists, this increase in suffering and worsening of welfare is clearly an ethical concern. And, for the majority of animal rights theorists, it's plausible that such negative effects constitute a rights violation. At least, if the negative impacts of climate change, such as hunger and homelessness, are a violation of *human* rights, if one accepts *animal* rights it seems reasonable to think that climate change should be similarly regarded in their case. On some nonconsequentialist views, in addition, anthropogenic harms or rights violations may create special obligations to assist (e.g., Palmer, 2010). So, doing nothing looks ethically problematic from both theoretical positions.

For sentientist consequentialists, an interventionist strategy would clearly be better than doing nothing if it improved overall animal welfare. For rights theorists, the situation is more complicated. The rights violations caused to individual animals by climate change can't be avoided, given the nature of climate change. Strategies that assist or compensate *those particular animals* whose rights have been violated would be supported by rights theorists. But strategies that violate further rights or that violate the rights of *other* animals, would be much more problematic, and, on standard rights views, unacceptable. For rights theorists, improving the situation should not normally come at the expense of further rights violations. For this reason, unlike for sentientist consequentialists, doing nothing is (on most rights accounts, anyway) better than doing something *if* doing something entails (further) violating animals' rights.

6.2. Pika strategy 2: Facilitated adaptation

The goal of facilitated adaptation would be to help American pika populations persist within their historic range by making them more resilient to heat. As noted above, I'll assume, for the purposes of this paper, that this could be successfully achieved by hybridization or gene editing without off-target effects on the pika themselves.

Facilitated adaptation has the goal of assisting pika populations and thereby protecting the pika species. This immediately suggests that this strategy should, in principle at least, be supported and pursued by those who prioritize species values, unless more effective species protection strategies are available. Since pikas seem to have a useful ecosystem function, adapting pikas is also likely to help to protect ecosystem values. While there may be cases where an ecosystem is changing so fast that adapting a single species would be pointless, the extreme heat sensitivity of the American pika in comparison with other alpine organisms means that, once adapted, pikas may well be able to go about doing what they were doing in the system before, albeit at warmer temperatures. Facilitated adaptation, then, is likely to be at least *permissible* from a perspective on which ecosystem values are prioritized. It may even be *desirable* if the changes climate change brings are viewed as "anthropogenic ecosystem harms" and the loss of the pika's contribution would be one such harm.

What about wildness value? This raises complex questions about the impacts of facilitated adaptation of organisms, such as pikas, on wildness, given that "wildness" can be interpreted in different ways. (See Palmer, 2016 for a much more extended discussion.) I'll consider only one kind of worry about wildness here: that facilitated adaptation can be understood as a way of trying to shape the world to reflect particular humanly conceived, desired, and directed goals, so extending and deepening the humanization of ecosystems already somewhat humanized by the influence of climate change itself. An alternative response to climate change would be to allow ecosystems independently to respond spontaneously and creatively—as Mathews (2003) suggests, to allow things to "unfold in their own way, or run their own course" rather than to bring about "what

happens when, under the direction of abstract thought, agents intentionally intervene to change that course of events for the sake of abstractly conceived ends of their own." Facilitated adaptation, in contrast to this "unfolding of things," is, after all, an intervention that intentionally directs "what happens" and brings about human ends, by enabling the persistence of a species in places from which it would otherwise have been extirpated. If this independent unfolding of things is how wildness is interpreted, facilitated adaptation certainly does reduce it. We may be able to save the American pika species and to protect ecosystem flourishing, but, from this perspective, we can do it only by wildness-compromising interventions to change the course of events.

A possible softening of this view would be to see facilitated adaptation as a short-term reset. Human intervention does change the course of events, and wildness is reduced or lost. But after the intervention, humans can withdraw and pikas can resume their independent lives. So, perhaps human influence could be seen as washing out of ecosystems over time, and wildness as flowing back in. Seen like this, facilitated adaptation is still wildness-reducing, but in a somewhat less troubling way. In addition, as noted above, this isn't the only way of understanding wildness. Wildness may be interpreted as compositional—as about what things exist where, rather than as about only where things come from. From a compositional perspective, facilitated adaptation might be understood as permitting the persistence of an existing landscape on which pikas live; a landscape containing pikas—even if only because humans enabled them to persist there—could be seen as wilder than a landscape lacking in pikas because human activities extirpated them. These possibilities aside, it seems reasonable to conclude that facilitated adaptation is troubling on most interpretations of wildness; it is a purposive intervention extending human intention and influence deeply into both the history and composition of ecosystems, as well as into the genetics, existence, and location of a species. So, from most wildness-preserving perspectives, facilitated adaptation is not likely to be permissible.

Finally, let's consider sentientist consequentialism and animal rights theorists. Although normally understood to be a species conservation strategy, facilitated adaptation could improve animal welfare. However, while it may do this in ways acceptable to sentientist consequentialists, facilitated adaptation is less likely to be acceptable to animal rights theorists.

Facilitated adaptation, even in the case of hybridization, would require capture and translocation of pikas and their relocation in unfamiliar territory. This process is likely to be extremely stressful, even if all handling were carried out under general anesthetic (Wilkening et al., 2015). Gene editing would involve keeping a breeding colony of so-called founder animals for the adapted lines; these pikas would have highly stressful lives. Once adapted, though, pika populations should be able to continue to live within their historic range, and, due to increased heat resilience, should have a level of subjective welfare similar to the welfare of pikas prior to climate change. They should not suffer from chronic overheating and should be better able to manage extreme-heat episodes. Even-

tually, then, successful facilitated adaptation should mean both that there would be more individual pikas alive *and* that those pikas would generally have better welfare than other pikas would have had, had facilitated adaptation not been carried out. However, to reach the goal of better overall pika welfare, some pikas will be seriously harmed, and some may die.

This is where different ethical theories are likely to diverge. From sentientist consequentialist perspectives, if there's reasonable confidence in improved aggregate animal welfare over time, facilitated adaptation is ethically permissible, and perhaps required, provided no other strategy is clearly better. The benefits to be gained from successful adaptation are very likely to outweigh the costs to pikas now, since there will be many more future pikas, all of whose lives would be better than those of the dwindling numbers of unadapted pikas. Since it's unlikely that any other mammal will move into pika territory any time soon, facilitated adaptation may allow a whole stream of net positive subjective experience that would not be replaced to continue in the world.

For rights theorists, however, it's unlikely that facilitated adaptation would be permissible, since the process of genetic adaptation, even if it involves only hybridization rather than gene editing, is likely to violate animals' rights. The animals selected for relocation or used for gene editing are not even the same ones as those likely to suffer from climate change, since for the process to be successful, the animals selected for relocation, or to found lines, would need to be those more resilient to climate change.

It's possible that a rights view that accepts "minimizing rights violations by transgressing comparable rights" (Kamm, 1996, p. 290) would be able to accept facilitated adaptation if the rights violated by facilitated adaptation are viewed as comparable to those induced by climate change (this seems less likely in the high-intervention case of gene editing than in the lesser intervention of hybridization). For instance, Regan's (1984. p. 305) miniride principle, discussed earlier in the context of therapeutic hunting, allows us to override the rights of the few who are innocent to protect the rights of many who are innocent when each affected individual is prima facie comparably harmed. Could facilitated adaptation be seen in this way?

This is possible, but unlikely. First, it's not clear that the harms here are "prima facie comparable," but even if they are, there are further difficulties. The adapted pikas are not yet in existence. We can violate the rights of some existing pikas (by facilitated adaptation), in order to bring into existence pikas whose rights won't be violated (by climate change). Or we can refrain from violating the rights of some existing pikas, but this will allow other pikas whose rights will be violated (by climate change) to come into existence. That some of the beings between whom one must choose don't yet exist is not a situation Regan envisages, and the argument needs considerable further work to apply to such cases. It might be possible to create an argument of this kind, but it's certainly not a standard approach in animal rights theory (and were this to be proposed in a

human case, it would certainly fall foul of human rights theory). It's more likely that animal rights theorists would not accept facilitated adaptation, and so sentientist consequentialists and animal rights theorists would again diverge in terms of this strategy.

Of further interest here, though, is that facilitated adaptation suggests new potential convergences as well as familiar divergences. Sentientist consequentialists and species preservationists would here support the same strategy, since facilitated adaptation is potentially a way both of preserving the pika species and of improving aggregate animal welfare over time. Animal rights theorists, on the other hand, converge with those who prioritize wildness value, where doing nothing is likely to be preferred to facilitated adaptation.

6.3. Pika strategy 3: Assisted migration

Assisted migration entails deliberately moving pikas into new territory that, because of barriers to dispersal, pikas can't reach by themselves. Let's assume that this could be done successfully, and that new pika populations could be established beyond their historic range. So, as climate warms and other pika populations are extirpated, these new populations could flourish.

As with facilitated adaptation, successful assisted migration protects the translocated species, if what's valued just is the species in itself, for its own sake. It's worth noting, though, that moving pikas does undercut *other* values that the pika species may carry—for instance, place-related historical and cultural values (facilitated adaptation is obviously more successful than assisted migration in preserving place-related values). But assisted migration looks more problematic from a perspective on which ecosystems are morally considerable. After all, assisted migration normally involves taking species members out of an ecosystem where they have been, at least to some degree, part of coevolution and coadaptation, and translocating them into a system that has previously been coevolving and adapting without them. So, there are worries about, as it were, *too much* success from translocation, should such species become invasive; or they may introduce disease, and thus cause significant disturbance to the recipient system. Ricciardi and Simberloff, for instance (2009), argue that we "have not yet developed a sufficient understanding of the impacts of introduced species to make informed decisions regarding species translocations."

Is this response too negative? Proposals to translocate pikas, for instance, include a variety of checks for disease and a quarantine period at the relocation site (Wilkening et al., 2015). And it's also possible that translocated species such as the pika *could* provide useful ecosystem functions in their new ecosystem, though it seems unreasonable to expect these. From an ecosystem-centred perspective, though, there certainly doesn't seem to be any positive reason for carrying out assisted migration. Assisted migration would not be for the sake of any ecosystem, since nothing is contributed to the ecosystem from which the species is removed, and it's unlikely that migrated populations would add signif-

icant value to the recipient system. From the perspective of someone prioritizing ecosystem value in terms of flourishing or integrity, successful facilitated adaptation, maintaining pika populations in their historic range, looks preferable to successful assisted migration. At best, assisted migration would be permissible from the perspective of ecosystem value, but this is doubtful; it would normally be better to do nothing. So, in the case of assisted migration, a strategy for the sake of species and for the sake of ecosystems may diverge.

In terms of wildness, assisted migration raises many of the same concerns as facilitated adaption. It is a way of responding to climate change by pursuing particular human-directed goals and humanizing ecosystems. And it's possible that assisted migration might appear even more problematic than facilitated adaptation, since assisted migration involves a loss of wildness not only in terms of *origin* (the pikas would not be there without human intervention), but also in terms of ecosystem *composition*. (While in the case of species restorations or facilitated adaptations pika are placed within their historic species range, translocated American pikas just would never be in their new range if humans hadn't moved them there.) While it might be argued, again, that this human influence could "wash out" with time, this seems likely to take much longer when a species population is in a new location entirely due to human activity. So, if wildness value is prioritized, assisted migration looks particularly problematic.

What about animal rights theory and sentientist consequentialism? The conclusions here look very like those I came to in the case of facilitated adaptation. Assisted migration, like facilitated adaptation, could over time produce many more pika individuals with better welfare than doing nothing would. In terms of aggregate animal welfare over time, it may well be a good strategy. But from the perspective of rights theory, the capture and relocation process violate animals' rights. In principle, this might be permissible *if* those animals relocated were themselves individually threatened by climate change (i.e., those individuals' rights were *already* threatened) and if the processes of translocation and adaptation to a new environment promised an ultimate improvement in their lives, a kind of compensation or restitution, even if the capture and transition period were stressful. For pikas (though not necessarily for all animal species), this looks somewhat unlikely in practice. Given the sensitivity of pikas to handling and their extremely territorial nature, it's hard to see many individual pikas benefiting from a move, even if currently threatened by climate change in their native range. Again, it might be possible to make a Regan-type miniride argument work here. But on a more straightforward reading of animal rights, assisted migration is unlikely to be permissible—at least, in the case of pikas.

So, again, then, as concerns assisted migration, those who prioritize species protection are likely to converge with sentientist consequentialists and support the strategy. Those who prioritize wildness value are likely to converge with animal rights theorists and, in this case, also with those who prioritize ecosystem values, in being extremely skeptical of, or opposed to, assisted migration.

This now allows me to fill in the remaining boxes of my summary table. Obviously, again, this table is crude: I hope the text above captures a little more complexity. (One box is in need of clarification: under the heading "Doing nothing," in the row "Protection of ecosystems," I have marked both an N and a Y. The N indicates "Don't do nothing when the choice is facilitated adaptation," and the Y, "Do nothing when the choice is assisted migration.")

TABLE 2: POLICY DIVERGENCE AND CONVERGENCE, SUMMARY 2

Policies→ Values/ethical theories ↓	1. Killing sentient invasive animals to protect native animals	2. Creating nature reserves	3. Doing nothing: Pika case	4. Facilitated adaptation: Pika case	5. Assisted Migration: Pika case
Protection of species	Y	Y	N	Y	Y
Protection of ecosistem	Y	Y	N/Y	Y	N
Protection of wildness	Y	Y	Y	N	N
Animal rights theory	N	Y	Y	N	N
Sentientist consequentialism	(Y)	(Y)	N	Y	Y

7. IN CONCLUSION: WHAT DOES THIS SHOW ABOUT CONVERGENCE AND DIVERGENCE?

This paper in general and the table above in particular have, I hope, drawn some useful conclusions about where different ethical and value positions are likely to converge and diverge about conservation strategies, especially in the context of climate change. First, in the context of environmental ethics, there are divisions on at least some occasions between those whose primary concern is to protect species and those whose concern is to protect ecosystems (this is particularly clear in the context of assisted migration). More systematically, interventionist strategies to protect species *or* ecosystems have the potential to undermine wildness values. Second, there's often divergence between sentientist consequentialists and animal rights theorists, where interventionist strategies likely to improve aggregate animal welfare over time often come only at the expense of harms to individual sentient animals and/or infringements on their rights. And third, there is potential for convergence on strategies between those with very different *value* priorities. As the table illustrates, in many conservation cases, sentientist consequentialists will line up with environmental ethicists who want to preserve animal species. In contrast, animal rights theorists are likely to line

up on the other side, against most interventions involving wild animals, and alongside environmental ethicists who are concerned about wildness (and on some occasions, about ecosystems, too).

This is an unexpected but interesting set of convergences; at first sight, there's no obvious reason why one might expect to find species preservationists and sentientist consequentialists converging on strategies and diverging from animal rights theorists and wildness protectors. One possible connection, though, is a certain similarity of method. That is, both species preservationists and sentientist consequentialists are primarily outcome oriented. They are interested in achieving species persistence or better aggregate animal welfare, but they are not so interested in how those outcomes are achieved. Strategies that bring about the desired outcomes are what should be chosen. Rights theorists and certain kinds of wildness valuers, however, are not so interested in *outcomes* as in *processes* related to how things come about. Animal rights theorists, for instance, aren't focused on reducing the total number of animal deaths, but they are focused rather on how those deaths come about—that is, whether *humans,* as moral agents, are doing the killing. Many (although not all) wildness protectors are not so interested in the composition of landscapes and ecosystems, but rather they care that those ecosystems came about in the right kind of way, without *human* influence or direction. If there's anything to these similarities, perhaps these strategy convergences are methodologically not quite so surprising. But, in any case, they are far removed from an animal liberation/environmental ethics rift.

In making this argument, I've inevitably oversimplified. All the value positions I've discussed contain more internal divergences and nuances than I've been able to accommodate. And I've discussed only a small subset of kinds of convergence/divergence cases. It's easy to think of cases where values will line up a different way—such as cases where an endangered *plant* species is threatened by invasive sentient animals (though this, I think, reinforces my point about there being multiple fault lines, rather than any single divide). I've also assumed the intrinsic value/moral considerability of species and ecosystems, although I'm not convinced about the moral considerability of either. And I have not attempted to defend a prioritization of these values (so, I have not examined, for instance, whether animal welfare should be prioritized over species protection, or species protection over wildness), nor discussed how choices might be made among policies that are all permissible.

So, where does all this leave us with respect to the theme of this special issue—the convergence and divergence of animal ethics and environmental ethics, and possible overlap between policies "that would be morally required for the sake of animals alone (including humans), vs. those required for the sake of organisms (including animals), entire species, and ecosystems"? I think that the "vs." in the above quotation refers to a divide that's rarely straightforwardly present in conservation strategies and policies that follow from those strategies—rarely, at least, under climate change. While the animal liberation/environmental ethics

divide was always too simple, now pervasive human impacts, including climate change, have created an even more complex value landscape to navigate. Although this value landscape may divide environmental ethicists as well as animal ethicists, it also has the potential to create fruitful and unexpected convergences in conservation strategies.

ACKNOWLEDGMENT

I would like to thank Peter Sandøe, two referees, and participants at the Convergence and Divergence conference held in Montreal on May 15-17, 2017, for helpful comments on versions of this paper.

NOTES

[1] An "extinction vortex" occurs when "a mutual reinforcement occurs among biotic and abiotic processes that drives population size downward to extinction" (Brook, Sodhi & Bradshaw, 2008). I should note, however, that there's still some uncertainty about the immediate degree of threat climate change poses to the American pika as a species; the species may be more resilient to climate change than has been feared (IUCN, 2016). However, the case still provides a useful scenario for exploring ethical issues and policy choices that will clearly apply to many other wild species even if the American pika does prove relatively hardy to warming temperatures.

[2] I'm grateful to the Montana Conservation Bioethics Working Group for formulating this expression of the difficulties of gene editing in wild animal populations.

REFERENCES

Aho, K., N. Huntly, J. Moen, and T. Oksanen, "Pikas (*Ochotona princeps*: Lagomorpha) as Allogenic Engineers in an Alpine Ecosystem," *Oecologica,* vol. 114, no. 3 1998, p. 405-409.

Australian Government Department of the Environment and Energy, *Threatened Species Strategy*, 2015, available at: http://www.environment.gov.au/biodiversity/threatened/publications/ threatened-species-strategy

Australian Invasive Species Council, "1080 and Animal Welfare: A Complicated Equation," September 4, 2013, available at: https://invasives.org.au/blog/1080-and-animal-welfare-a-complicated-equation/

Australian Wildlife Conservancy, *Feral Cat Research*, n.d., available at: http://www.australian-wildlife.org/field-programs/feral-cat-research.aspx

Beever, Erik A. et al., "Pika (*Ochotona princeps*) Losses from Two Isolated Regions Reflect Temperature and Water Balance, but Reflect Habitat Area in a Mainland Region," *Journal of Mammalogy,* vol. 97, no. 6, 2016, p. 1495-1511.

Brook, B. W., N. S. Sodhi, and C. J. A. Bradshaw, "Synergies among Extinction Drivers under Global Change," *Trends in Ecology and Evolution,* vol. 23, no.8, 2008, p. 453-460.

Cochrane, Alasdair, *Animal Rights without Liberation*, New York, Columbia University Press, 2012.

Derocher, Andrew E. et al., "Rapid Ecosystem Change and Polar Bear Conservation," *Conservation Letters,* vol. 6, no. 5, 2013, p. 368-375.

Dixon, Ben, "Deriving Moral Considerability from Leopold's *A Sand County Almanac,*" *Ethics, Policy and Environment*, vol. 19, no. 2, 2016, p. 196-212.

Donaldson, Sue, and Will Kymlicka, *Zoopolis: A Political Theory of Animal Rights*, New York, Oxford University Press, 2012.

Elliot, Robert, "Faking Nature," *Inquiry,* vol. 25, no. 1, 1982, p. 81-93.

Frey, R. G., "Moral Standing, the Value of Lives, and Speciesism," *in* Hugh LaFollette (ed.), *Ethics in Practice: An Anthology,* 4th ed., Oxford, Wiley Blackwell, 2014, p. 181-191.

Hällfors, M. H., S. Aikio, and L. E. Schulman, "Quantifying the Need and Potential of Assisted Migration," *Biological Conservation,* vol. 205, 2017, p. 34-41.

Henry, P., Z. Sim, and M. Russello, "Genetic Evidence for Restricted Dispersal along Continuous Altitudinal Gradients in a Climate Change Sensitive Mammal: The American Pika," PLoS One, vol. 7, no. 6, 2012, https://doi.org/10.1371/journal.pone.0039077

Henry, P., and M. Russello, "Adaptive Divergence along Environmental Gradients in a Climate-Change Sensitive Mammal," *Ecology and Evolution,* vol. 3, no. 11, 2013, p. 3906-3917.

Hettinger, Ned, and Bill Throop, "Refocusing Ecocentrism: De-emphasizing Stability and Defending Wildness," *Environmental Ethics*, vol. 21, no. 1, 1999, p. 3-21.

Horta, Oscar, “The Ethics of the Ecology of Fear against the Non-Speciesist Paradigm: A Shift in the Aims of Intervention in Nature,” *Between the Species,* vol. 13, 2010, p. 163-187.

Kamm, F. M., *Morality, Mortality: Rights, Duties and Status, vol. II*, Oxford and New York, Oxford University Press, 1996.

Kasperbauer, T. J., and P. Sandøe, “Killing as a Welfare Issue,” *in* T. Višak and R. Garner (eds.), *The Ethics of Killing Animals,* Oxford, Oxford University Press, 2016, p. 17-31

Legge, S., B. P. Murphy, H. McGregor et al., “Enumerating a Continental-Scale Threat: How Many Feral Cats Are in Australia?” *Biological Conservation,* vol. 206, 2017, p. 293-303.

Le Quéré, C. et al., “Global Carbon Budget,” *Earth System Science Data,* vol. 8, 2016, p. 605-649.

Mathews, Freya, “Letting the World Do the Doing,” *Australian Humanities Review,* vol. 33, 2004. Available at: http://www.australianhumanitiesreview.org/archive/Issue-August-2004/matthews.html

McArthur, R. A., and L. Wang, “Behavioral Thermoregulation in the Pika *Ochotona princeps*: A Field Study Using Radiotelemetry,” *Canadian Journal of Zoology*, vol. 52, no. 3, 1974, p. 353-358.

McGregor, H. W., S. Legge et al., “Density and Home Range of Feral Cats in North-Western Australia,” *Wildlife Research*, vol. 42, no. 3, 2015, p. 223-231.

McKibben, Bill, *The End of Nature*, New York, Anchor Books, 1989.

Morelli, Toni Lyn, Christopher Daly, Solomon Z. Dobrowski, Deanna M. Dulen et al., “Managing Climate Change Refugia for Climate Adaptation,” *PLoS ONE,* vol. 11, no. 8, 2016, e0159909

NOCA Pika Research, 2012, Accessed on 4 May 2017, URL https://www.youtube.com/watch?v=woQftswDt6A

Palmer, Clare, *Animal Ethics in Context*, New York, Columbia University Press, 2010.

———, “Saving Species but Losing Wildness: Should We Genetically Adapt Wild Species To Help them Respond to Climate Change?,” *Midwest Studies in Philosophy,* vol. 40, no. 1, 2016, p. 234-251.

Pecl, G. T., M. B. Araújo, J. D. Bell et al., “Biodiversity Redistribution under Climate Change: Impacts on Ecosystems and Human Well-Being,” *Science,* vol. 355, no. 6332, 2017, p. 1-9.

Pimm, S. L., L. Dollar, and O. L. Bass, “The Genetic Rescue of the Florida Panther,” *Animal Conservation,* vol. 9, no. 2, 2006, p. 115-122.

Preston, Christopher, “Rethinking the Unthinkable: Environmental Ethics and the Presumptive Argument against Geoengineering,” *Environmental Values,* vol. 20, 2011, p. 457-479.

Regan, Tom, *The Case for Animal Rights*, Berkeley, California University Press, 1984.

Ricciardi, A., and D. Simberloff, “Assisted Colonization Is Not a Viable Conservation Strategy,” *Trends in Ecology and Evolution*, vol. 24, no. 5, 2009, p. 248-253.

Robson, K. M., T. C. Lamb, and M. Russello, “Low Genetic Diversity, Restricted Dispersal, and Elevation-Specific Patterns of Population Decline in American Pikas in an Atypical Environment,” *Journal of Mammalogy,* vol. 97, no. 2, 2016, p. 464-472.

Rolston, Holmes, *Environmental Ethics*, Philadelphia, Temple University Press, 1989.

Sagoff, Mark, “Animal Liberation and Environmental Ethics: Bad Marriage, Quick Divorce,” *Osgoode Law Journal*, vol. 22, no. 2, 1984, p. 297-307.

Sandler, Ron, “Climate Change and Ecosystem Management,” *Ethics, Policy and Environment,* vol. 16, no. 1, 2013, p. 1-15.

Sherley, Miranda, “Is Sodium Fluoroacetate (1080) a Humane Poison?,” *Animal Welfare*, vol. 16, no. 4, 2007, p. 449-458.

Singer, Peter, “All Animals Are Equal,” *1 Phil. Exchange*, no. 103, 1974.

Smith, A. T., and E. Beever, *Ochotona princeps*, The IUCN Red List of Threatened Species, 2016: e.T41267A45184315

Smith, Ian, *The Intrinsic Value of Endangered Species*, New York, Routledge, 2016.

Thomas, Michael A., Gary W. Roemer, C. Josh Donlan, Brett G. Dickson, Marjorie Matocq, and Jason Malaney, “Ecology: Gene Tweaking for Conservation,” *Nature*, vol. 501, no.7468, 2013, p. 485-486.

Varner, Gary E., “Can Animal Rights Activists Be Environmentalists?,” *in* Christine Pierce and Donald VanDeVeer (eds.), *People, Penguins, and Plastic Trees: Basic Issues in Environmental Ethics,* 2nd ed., Belmont CA, Wadsworth Publishing Company, 1995, p. 254-273.

———, “Environmental Ethics, Hunting and the Place of Animals,” *in* Beauchamp, Tom, and R. G. Frey (eds.), *Oxford Handbook of Animal Ethics,* New York, Oxford, 2012, p. 855-876.

Wilkening, J. L. et al., “Alpine Biodiversity and Assisted Migration: The Case of the American Pika (*Ochotona princeps*),” *Biodiversity,* vol. 16 no. 4, 2015, p. 1-13.

Willis, S. G., J. K. Hill, C. D. Thomas et al., “Assisted Colonization in a Changing Climate: A Test-Study Using Two U.K. Butterflies,” *Conservation Letters,* vol. 2, no. 1, 2009, p. 46-52.

WHY ANIMAL WELFARE IS NOT BIODIVERSITY, ECOSYSTEM SERVICES, OR HUMAN WELFARE: TOWARD A MORE COMPLETE ASSESSMENT OF CLIMATE IMPACTS

KATIE McSHANE
COLORADO STATE UNIVERSITY

ABSTRACT:

Taking the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) as representative, I argue that animal ethics has been neglected in the assessment of climate policy. While effects on ecosystem services, biodiversity, and human welfare are all catalogued quite carefully, there is no consideration at all of the effects of climate change on the welfare of animals. This omission, I argue, should bother us, for animal welfare is not adequately captured by assessments of ecosystem services, biodiversity, or human welfare. After describing the paper's assumptions and discussing the role of the IPCC's Assessment Reports in climate policy, I consider the presentation of climate impacts in the IPCC's Fifth Assessment Report, noting the aspects of animal welfare that are (and are not) considered there, and comparing the report's treatment of animal welfare to its treatment of human welfare. Next, I argue that the concepts of ecosystem services, biodiversity, and human welfare do not adequately capture the welfare of animals. Finally, I discuss concerns about human responsibility for animal welfare and the practicality of including considerations of animal welfare among the climate impacts studied by the IPCC.

RÉSUMÉ :

En prenant le Cinquième Rapport d'évaluation du Groupe d'experts intergouvernemental sur l'évolution du climat (GIEC) à titre de cas représentatif, je soutiens que l'éthique animale a été négligée dans l'évaluation de la politique climatique. Alors que les effets sur les services écosystémiques, la biodiversité et le bien-être humain y sont tous soigneusement recensés, les effets du changement climatique sur le bien-être des animaux n'y sont aucunement pris en considération. Je soutiens que cette omission devrait nous préoccuper, étant donné que l'évaluation des services écosystémiques, de la biodiversité et du bien-être humain ne rend pas compte adéquatement du bien-être des animaux. Après avoir décrit les présupposés de l'article et réfléchi au rôle des Rapports d'évaluation du GIEC quant à la politique climatique, j'examine la présentation des effets climatiques dans le Cinquième Rapport du GIEC, en indiquant les aspects du bien-être animal qui y sont (ou n'y sont pas) pris en considération, tout en comparant le traitement que fait le rapport du bien-être animal à celui qui est fait du bien-être humain. Ensuite, je soutiens que les concepts de services écosystémiques, de biodiversité et de bien-être humain ne reflètent pas adéquatement le bien-être des animaux. Enfin, je traite des problèmes potentiels liés à la responsabilité humaine relativement au bien-être des animaux ainsi que de la faisabilité d'inclure des considérations liées au bien-être animal parmi les effets climatiques étudiés par le GIEC.

1. INTRODUCTION

While the rift between animal ethics and environmental ethics is beginning to mend, one legacy of the conflict between the two fields is that certain areas of policy are still exclusively dominated by one set of concerns or the other.[1] This paper is about one of those areas: climate policy. Taking the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) as representative, I argue that animal ethics has been neglected in the assessment of climate policy. While effects on ecosystem services, biodiversity, and human welfare are all catalogued quite carefully, there is no consideration at all of the effects of climate change on the welfare of animals. This omission, I argue, should bother us, for animal welfare is not adequately captured by assessments of ecosystem services, biodiversity, or human welfare. In what follows, I first lay out a number of assumptions and discuss the role of the IPCC's Assessment Reports in climate policy. Then I consider the presentation of climate impacts in the IPCC's Fifth Assessment Report, noting the aspects of animal welfare that are (and are not) considered there, and comparing the report's treatment of animal welfare to its treatment of human welfare. Next, I argue that the concepts of ecosystem services, biodiversity, and human welfare do not adequately capture the welfare of animals. Finally, I discuss concerns about human responsibility for animal welfare and the practicality of including considerations of animal welfare among the climate impacts studied by the IPCC.

Before beginning, I want to note four crucial assumptions of this paper. First, I take it for granted that there are at least some nonhuman animals with a welfare that is of direct moral importance. While this might have once been a controversial claim, thanks to the careful and well-argued work of animal ethicists, there is now widespread agreement even within mainstream ethics that this is true.[2] There is, of course, still disagreement about exactly which nonhuman animals have morally important interests, and there is disagreement about how those interests ought to be weighed against human interests.[3] But that there are morally significant interests that exist outside of the human species is widely accepted as true. The arguments in this paper require that only the most uncontroversial versions of such a claim be true—for example, that adult mammals typically have some interest in not suffering, and that this interest has some moral importance.

Second, I take it for granted that, if one is choosing among courses of action, some of which are likely to have significant effects on the interests of others, one ought to take those likely effects into consideration in weighing one's options. All other things equal, one ought to avoid courses of action that are harmful to the interests of others. Again, this claim is not controversial within ethics.

Third, I take for granted the basic scientific consensus about climate change: that human activity is largely responsible for causing it, and that our current choices and policies, at least on a global scale, will affect how and how much the climate changes.

Fourth, I take it for granted that climate change is likely to have a very significant effect on the welfare of animals. While I will not argue for this claim here, it is worth saying a bit about why such a claim is nonetheless plausible. Consider the projected impacts of climate change. Generally speaking, temperatures are expected to rise, temperature extremes are expected to be more frequent, and extreme weather events (hurricanes, floods, fires, droughts) are expected to happen more often. Even under very moderate warming projections, monthly heat records will be more than twelve times more common by the 2040s (IPCC, 2014a, p. 109, citing Coumou, Robinson, and Rahmstorf, 2013). There are many negative effects we can expect from this. Higher heat will cause more frequent wildfires, which will lead to severe problems for air and water quality (IPCC, 2014a, citing Pechony and Shindell, 2010). As warmer temperatures change habitats, some animals will move into new areas that they hadn't previously occupied; others won't be able to move fast enough and will die.[4] Even those who relocate are likely to have many problems to deal with: needing to find new food sources, compete or cooperate with members of different species, protect themselves from new predators, fight off new diseases, and adjust to new seasonal cycles. Even in a hospitable habitat, extreme weather events can displace animal populations just as easily as they can displace human populations. There are also positive effects, at least for some animals, that we might expect. Some will see new food sources move into their territory, former predators die off, or former disease vectors disappear.

In addition to the direct effects just listed, there are also indirect consequences of climate change that are likely to affect the welfare of animals. Climate change is expected to cause significant disruption to human social and economic systems, and human responses to these disruptions might affect the way humans treat animals and their habitats. Sea level rise and extreme weather events will cause population dislocation and change land-use patterns. Frequent droughts and floods will impact human agriculture and increase food insecurity in vulnerable human populations. Economic shocks will further disrupt agricultural markets. Increased migration and economic deprivation will make violent conflict among humans more likely. These disruptions and conflicts among humans are likely to cause harm to many nonhuman animals. Disrupted agricultural markets and economic shocks can affect the way in which humans treat food animals. War can endanger animal populations as well as human populations. Again, in addition to the indirect harms just mentioned, there might also be indirect benefits for some animals. For example, unfarmed land might revert to better habitat for animals; at least some food animals might lead better lives if they escaped human captivity.[5]

There are also impacts on animals that might be caused by certain strategies that humans might adopt for mitigation of or adaptation to climate change. Increased reliance on biofuels, for example, is likely to change land-use patterns and cause human incursions into current habitats. Some actions we might take to adapt to variability in water supply (for example, building more and larger dams and reservoirs) might take away resources and habitats needed by animals (IPCC,

2014a, p. 276, 277). Some strategies for preventing extinctions, such as assisted colonization (moving organisms to new locations where they have a better chance of surviving) or more traditional forms of ex situ preservation (moving organisms to zoos or preserves to protect them) might have important impacts on the welfare of the animals so moved, on the animals who inhabit the environments they were moved out of, or, in the case of assisted colonization, on the animals in the new location. Again, these consequences are unlikely to be uniformly negative; at least some animals are likely to benefit from these changed arrangements.

Finally, as Oscar Horta has argued, climate change may well affect how many animals are born, in part by affecting the reproductive strategies that animals pursue.[6] Horta claims that most animals' lives involve more suffering than pleasure, in part because most animals reproduce by having many offspring, very few of whom survive to adulthood (in technical terms, they are r-strategists rather than K-strategists). If this is true, then, if climate change increases the number of animals who reproduce this way, as Horta argues it will, or if it simply increases the number of animals who exist at all (by increasing available food resources, for example), this is a bad consequence from the point of view of animal welfare. More lives containing mostly suffering would be brought into existence with climate change than without it.[7]

We can see from these considerations that there is likely to be a significant effect on animal welfare from climate change. In fact, it would be very surprising if significant changes to the Earth's climate did not affect the lives of animals. However, what exactly the effects of climate change on the welfare of animals will be and how our climate policies might affect those levels of welfare clearly require more study. While it is clear that there will be many harms and possibly some benefits resulting from climate change, we need to know more about what they will be, what their magnitudes will be, and what the tradeoffs among them might look like.

The four assumptions described above leave us with something like the following argument: There are creatures besides humans whose welfare matters morally. If our choices might have a significant effect on their welfare, we ought to take that into consideration in deciding what to do.[8] The choices we make now about climate policy are likely to have a significant effect on animal welfare. Thus, considerations of animal welfare ought to be taken into consideration when we make choices about climate policy.

2. CLIMATE POLICY: ROLE OF IPCC ASSESSMENT REPORTS

Prior to any discussion about the way in which animals are considered in climate policy, it is important to understand the general framework in which discussions of climate impacts take place. International discussions of climate policy have shifted considerably in the last two decades. In the earliest days of international negotiations about climate change, the focus was entirely on mitigation—that is

to say, how to reduce greenhouse-gas emissions in order to prevent climate change. In those days, to talk about adaptation—that is, about how to live within a changed climate—was taboo. The assumption was that only those who didn't want to pursue mitigation talked about adaptation.[9] However, as international agreements failed to reach mitigation targets year after year, it became clear that some level of harmful climate change was inevitable, and people began talking about adaptation. Today talk of adaptation is common among policymakers; in fact, adaptation is now the so-called second pillar of climate policy. Most recently, policymakers have begun to talk about "loss and damage"—that is, about the harm that will be caused by those climate changes that cannot be prevented or adapted to. Again, such talk was previously taboo—a sign of one's lack of commitment to successful mitigation and adaptation.[10] But now policymakers seem to be acknowledging that some loss and damage from climate change is inevitable, and they are trying to assess how much and what kind it will be.

Central to current policy discussions about climate change are assessments of the likely impacts of various courses of action. Policymakers need to know what the effects will be of mitigating to various levels (for example, what the effect on agriculture will be if warming reaches the four-degree mark); they need to know what impacts various strategies for adaption will have (for example, how a shift to clean energy will affect the transportation sector or freshwater ecosystems); and they need to know which losses are likeliest to occur, which are still preventable, and what their magnitude will be. This means that a tremendous effort is going into assessing the good consequences and the bad consequences of various choices we might make regarding climate change. Much of the IPCC's latest Assessment Report, in fact, is devoted to this task.

The Fifth Assessment Report, like all IPCC Assessment Reports, is an aggregation of smaller sections, each written by a different group of authors. It therefore might not have the same degree of unity and consistency as a work written in its entirety by the same group of authors. While this means that we should be wary of taking the report to express a single, unified view, it also means that omissions from the work as a whole—since they occur across the work of so many different authors—are particularly notable.

The aim of the IPCC's Assessment Reports is to provide information to policymakers about the current state of knowledge concerning climate change, including knowledge about the likely impacts of various policy choices. Much of the most recent report, particularly the over-1 800-page section on "Impacts, Adaptation, and Vulnerability," is written using the language of risk assessment. In these terms, the report describes its own mission:

> [This report] evaluates how patterns of risks and potential benefits are shifting due to climate change. It considers how impacts and risks related to climate change can be reduced and managed through adaptation and mitigation (IPCC, 2014a, p. 3).

This is a very broad description of what the report aims to assess, and it is worth noticing that nothing in this description would rule out the inclusion of consequences for animal welfare among the "impacts and risks" of climate change that are to be "reduced and managed." Definitions of key terms within the report are also very broad. For example, impacts are defined as "effects on natural and human systems"; risk as "the potential for consequences where something of value is at stake and where the outcome is uncertain, recognizing the diversity of values"; and adaptation as "the process of adjustment to actual or expected climate and its effects" (IPCC, 2014a, p. 5). Nothing in these definitions would suggest that impacts on animal welfare are to be excluded; in fact, given the broad language in these definitions, such an exclusion would be strange. For a report that aims to assess the impacts and risks related to climate change, with the goal of managing them through mitigation and adaptation, the omission of impacts on and risks to the welfare of animals is puzzling.

3. FIFTH ASSESSMENT REPORT: IMPACTS ON ANIMALS

And yet, considerations of animal welfare are almost entirely excluded from the 3 300 pages devoted to assessing the potential impacts of various mitigation and adaptation strategies. This isn't to say that the report ignores the effects on animals altogether; rather, it looks at impacts on their existence or nonexistence, their diversity, and their ecosystemic function rather than impacts on the quality of their lives as lived. This is very different from the way the report assesses impacts on humans. In the case of humans, effects on quality of life are central to the assessment of impacts.

Let us consider first how impacts on animals are assessed. In the report, impacts are usually described as impacts on species, biodiversity, or ecosystem services. In the discussion of impacts on species, which we might think of as a concern about a particular type of biodiversity, the closest that the assessment of climate impacts comes to considering effects on animal welfare is considering effects on "species range, abundance, and extinction" (IPCC, 2014a, p. 294). Welfare-related problems (for example, starvation) are sometimes discussed, but only in terms of their effect on range, abundance, and extinction. Consider the following fairly typical descriptions:

> Some corals and temperate fishes experience disturbances to behavior, navigation, and their ability to tell conspecifics from predators…. However, there is no evidence for these effects to persist on evolutionary time scales in the few groups analyzed (IPCC, 2014a, p. 130).

> There is, however, broad agreement that land use, and habitat fragmentation in particular, will pose serious impediments to species adaptation to climate change as it is projected to reduce the capacity of many species to track climate…. These considerations lead to the assessment that future species extinctions are a high risk because the consequences of climate change are potentially severe, widespread, and irreversible, as extinctions constitute the permanent loss of unique life forms (IPCC, 2014a, p. 299).

> Even species whose populations are not projected to decline rapidly over the next century can face a substantial 'extinction debt,' that is, will be in unfavorable climates that over a period of many centuries are projected to lead to large reductions in population size and increase the risk of extinction (IPCC, 2014a, p. 301).

Surely the events that are being described in the above quoted passages will be miserable ones to live through for many animals. "Disturbances to behavior, navigation, and [the] ability to tell conspecifics from predators" will make for a very difficult life. If what we care about is what these events will be like for the animals who experience them, it is no consolation that these circumstances won't persist on an evolutionary timescale. Likewise, the inability of many species to "track climate"—i.e., to continuously migrate to a more hospitable habitat as the changing climate makes their current habitat impossible to survive in—is a problem not just because of its effect on risk of extinction and the loss of "unique life forms," but also because of the terribly difficult lives animals will live as they try to make such adjustments. Being in "unfavorable climates" isn't bad just because of the "extinction debt" (i.e., increased risk of extinction over the longer term) that befalls the species, but also because of what it is like for the lives of living, sentient creatures. An "unfavorable climate" is one where there isn't enough to eat, where what kept you safe from predators and diseases in the past no longer works, where you are increasingly watching your offspring and fellow group members suffer and die, and where the scarcity of resources leads to increased conflict, destabilizing group structures and increasing violent confrontations.

The report also assesses impacts in terms of the effect on biodiversity—understood more broadly than range, abundance, and extinction of species, to include also diversity at genetic and ecosystem levels—and on ecosystem services. Biodiversity and ecosystem services are typically discussed together, and biodiversity is often described as important because of its effect on ecosystem services. For example, the report notes that "global marine-species redistribution and marine-biodiversity reduction in sensitive regions will challenge the sustained provision of fisheries productivity and other ecosystem services" (IPCC, 2014a, p. 17). In a section titled "Impacts Key on Ecosystem Services," there is a subsection entitled "Habitat for Biodiversity," which notes that "many species could be outside of their preferred habitats within the next few decades" (IPCC 2014a, p. 319), a problem in virtue of its effect on biodiversity and risk of extinction. In measuring impacts of various "transformation pathways," (i.e., pathways toward stabilizing greenhouse-gas concentrations), the only way in which effects on nonhumans are considered is in terms of consequences for biodiversity (IPCC, 2014b, ch. 6).

What the report seems to care about when it comes to animals is diversity among the kinds that exist and their functional role in ecosystems—or, at least, those aspects of ecosystems that humans care about. Animals having to find a way to live in an inhospitable climate is understood to be a problem because it might

lead to decreased abundance of those animals or even to the extinction of their species. Species extinction is presumed to be a problem for two reasons: first, because those species' members might have provided important services to humans (for example, the nutritional and economic benefits that humans get from catching fish); and second, because species are "unique life forms" (which are valuable either in their own right or, again, because they provide important services to humans).

In sum, the report implies that the climate impacts on animals that matter are those that affect the types of animals still in existence, the numbers of each existing type, and the quality of the services that they provide to humans. These are the relevant impacts and risks that the report considers when it comes to animals, and it is facts about these impacts and risks that are meant to inform discussions of mitigation, adaptation, and risk management in general.

4. FIFTH ASSESSMENT REPORT: IMPACTS ON HUMANS

It is important to notice that the way in which the report treats the impacts of climate change on animals, described in the preceding section, is very different from the way in which the report treats impacts on humans. For humans, effects on welfare are amply described, and careful attention is paid to the role that existing disadvantages might play in making some communities more vulnerable to climate change than others. Below are some typical descriptions of impacts on humans. Notice how different they are from the concerns about risks to species, biodiversity, and ecosystem services that we saw in the case of animals, even though many of these effects on humans are also ones that will be suffered by animals in some way.

> Throughout the 21st century, climate change is expected to lead to increases in ill-health in many regions and especially in developing countries with low income, as compared to a baseline without climate change (high confidence). Examples include greater likelihood of injury, disease, and death due to more intense heat waves and fires (very high confidence); increased likelihood of under-nutrition resulting from diminished food production in poor regions (high confidence); risks from lost work capacity and reduced labor productivity in vulnerable populations; and increased risks from food- and water-borne diseases (very high confidence) and vector-borne diseases (medium confidence). Positive effects are expected to include modest reductions in cold-related mortality and morbidity in some areas due to fewer cold extremes (low confidence), geographical shifts in food production (medium confidence), and reduced capacity of vectors to transmit some diseases (IPCC, 2014a, pp. 19-20).
>
> Impacts of such climate-related extremes include alteration of ecosystems, disruption of food production and water supply, damage to infrastructure and settlements, morbidity and mortality, and consequences for mental health and human well-being" (IPCC, 2014a, p. 6).

> Climate-related hazards affect poor people's lives directly through impacts on livelihoods, reductions in crop yields, or destruction of homes and indirectly through, for example, increased food prices and food insecurity. Observed positive effects for poor and marginalized people, which are limited and often indirect, include examples such as diversification of social networks and of agricultural practices. Violent conflict increases vulnerability to climate change (medium evidence, high agreement). Large-scale violent conflict harms assets that facilitate adaptation, including infrastructure, institutions, natural resources, social capital, and livelihood opportunities (IPCC, 2014a, pp. 6-8, reference omitted).

> Climate-change impacts are expected to exacerbate poverty in most developing countries and create new poverty pockets in countries with increasing inequality, in both developed and developing countries. In urban and rural areas, wage-labor-dependent poor households that are net buyers of food are expected to be particularly affected due to food price increases, including in regions with high food insecurity and high inequality (particularly in Africa), although the agricultural self-employed could benefit. Insurance programs, social protection measures, and disaster risk management may enhance long-term livelihood resilience among poor and marginalized people, if policies address poverty and multidimensional inequalities (IPCC, 2014a, p. 20).

The report also explores risks to "normal human activities, including growing food or working outdoors," and to agricultural incomes; displacement and migration (and social responses to them); economic shocks; extreme weather such as heatwaves, floods, droughts, and fires (and social responses to them); heat-related deaths; gender inequality; access to education; damage to property; ability to maintain infrastructure and provide social services; psychological well-being and sense of security; individual, household, and community coping capacities and need for external assistance; social upheaval; "generalized anxiety, depression, aggression, and complex psychopathology[,]... chronic psychological distress and increased incidence of suicide"; solastalgia ("a distressing sense of loss...that people experience when their land is damaged"); risks to human security; and threats to the freedom and capacity to live with dignity (IPCC 2014a, p. 20, 49, 94, 105, 550, 713, 732 [citing Albrecht et al., 2007], 759]).

For humans, impacts on the quality of our lives plays a prominent role in the discussion of risks to be avoided. This is appropriate. We do not care only about how many and what kind of humans will remain in existence; we do not care only about the benefits (economic or otherwise) that they will provide to others. We also care about the effects on the quality of human lives as they are lived and experienced. We do not care only about how things work out over the evolutionary long-term for our species; we also care about the human lives that will be lived during that time.

Before further discussion, it is worth noting that there are two exceptions to the generalizations I have just given. First, there is a discussion of ethics in the Working Group III report. That discussion tries to make room, at least in some places, for the existence of morally important animal welfare. The authors divide ethics into two categories: claims about justice and claims about value. While justice is defined in a way that rules out animals (as a matter of whether "people and nations…receive what they are due, or have a right to"), value is defined in such a way that it could be applied to animals (IPCC, 2014b, p. 213). The report states: "All values may be anthropocentric or there may be non-human values" (IPCC, 2014b, p. 213). Most important is the following claim:

> If animals, plants, species, and ecosystems do have value in their own right, then the moral impact of climate change cannot be gauged by its effects on human beings alone. If climate change leads to the loss of environmental diversity, the extinction of plant and animal species, *and the suffering of animal populations*, then it will cause great harms beyond those it does to human beings (IPCC, 2014b, p. 220, emphasis added).

Unfortunately, this claim seems to have had no impact on the rest of the report, even within the ethics section. Value is subsequently discussed in economic terms (i.e., use value and nonuse value), and well-being is discussed as if it applied only to humans. There are occasional admissions that this kind of assessment is incomplete. For example, there is the claim that "non-market values[,] such as the existence of species, natural environments, or traditional ways of life of local societies," are not well captured because the quantification methodology for them is not yet well developed (IPCC, 2014b, p. 225). The report also mentions in passing the possibility that nature may have value beyond what is attributed to it by humans (IPCC, 2014b, p. 221). However, these possibilities are not explored further, nor are these values included in any assessment of impacts elsewhere in the report.

The second exception, which occurs in the discussion of sustainable development, is the statement that "the ultimate end result, for sustainability assessment, is the wellbeing of all living beings" (IPCC, 2014b, p. 322). However, all that is said about the well-being of nonhuman beings is that "it still remains difficult to assess" (IPCC, 2014b, p. 322). In the assessments of impacts that follow, no effort to assess it is made.

If we read the claims in these two exceptions against the background of the rest of the report, the conclusion we are left with is this: animals might (or do) have a welfare that might (or does) matter to the goals of climate policy, but no one is going to investigate the matter further, and the impacts of climate policy on this welfare will not be included in our attempts to manage climate risks. From the point of view of ethics, this position is unsatisfactory.

5. THE RELATION BETWEEN ANIMAL WELFARE AND ECOSYSTEM SERVICES, BIODIVERSITY, AND HUMAN WELFARE

One might attempt to justify the IPCC's approach by claiming that in fact the authors *are* assessing animal welfare. While they might not be measuring how much a particular elephant or family of elephants will suffer from drought, for example, they are assessing the impact of drought on all elephants by looking at how it will affect the existence and abundance of elephants. When measuring the global effects of a phenomenon such as climate change, one might argue, we cannot investigate the quality of each individual life that is affected. We need metrics that can be applied to large-scale problems. There are good ways of measuring impacts on ecosystem services, biodiversity, and human welfare at the necessary scale, and these can serve as proxies for measurements of animal welfare.

However, to measure the impact of climate change on ecosystem services, biodiversity, or human welfare is not to measure its impact on animal welfare. While these might be measures of large-scale phenomena, they are not in fact measuring the same thing as, nor are they good proxies for, animal welfare. Consider the case of ecosystem services. Ecosystem services are defined as "the benefits that people derive from ecosystems," or, more formally, "ecological processes or functions having monetary or non-monetary value to individuals or society at large" (IPCC, 2014a, p. 319; IPCC, 2014b, p. 1259). To measure the benefits that people derive from an ecosystem is not to measure the benefits that animals derive from an ecosystem. Ecosystems may provide benefits to people that they do not provide to animals (opportunities for scientific study, for example), and ecosystems can also provide benefits to people that come at the expense of animals (opportunities for hunting and fishing, for example).[11]

Biodiversity might seem better positioned to capture animal welfare. After all, measurements of biodiversity are often used to assess the state of nonhuman communities. In discussions of this issue, it is important to note that biodiversity is a notoriously vague concept. It is defined formally in the Assessment Report as follows: "The variability among living organisms from terrestrial, marine, and other ecosystems. Biodiversity includes variability at the genetic, species, and ecosystem levels" (IPCC, 2014b, p. 1253). The problem is not simply that there are different levels at which we could look for variability. It is also that there are different ways in which things at that level might vary. Take, for example, biodiversity at the species level, in keeping with the report's focus on species, discussed above. If what we care about is diversity among the species in some region, we first need to be clear about what kind of variability we are looking for. Do we just want there to be as many species present in that region as possible? Or do we also want those species to be as different from one another as possible (e.g., in terms of morphology, genetics, etc.)? Do we care how many members of each species there are—how abundant the species is? There is a large and technical literature on this topic, and there are many different definitions of biodiversity that have emerged from it.[12]

Yet there are problems with using any of these definitions of biodiversity as a proxy for animal welfare. Biodiversity is essentially a measure of variety, even if different definitions of biodiversity involve different types of variety. Variety is not the same thing as flourishing. Among humans, this is very clearly true: I can work in a very diverse department (in terms of nationality, gender, philosophical style, etc.) where everyone is miserable. We see the same thing among nonhumans. A region with high biodiversity is full of lots of different *kinds* of individuals. They might be suffering; their lives might be barely worth living. But if they are alive, they count positively toward biodiversity. The only time welfare will affect biodiversity at all is when it affects either reproduction or mortality to such an extent that the relevant kind of variability in the population is diminished—for example, when a species goes extinct. However, significant effects on welfare happen to species members long before their species goes extinct. To care about biodiversity, then, is to care about the existence or presence of the kinds, not about the welfare of the individuals belonging to those kinds.

From an ethical perspective, the difference between caring about the existence of kinds and caring about the welfare of individuals is significant. The point of the claim that animals have a welfare of direct moral importance is that harms or benefits to them matter morally. It matters not just whether certain kinds of them exist, but also what their quality of life is. To see the force of this point, consider what difference it would make if we thought the aim of human morality was only to ensure that certain kinds of people exist, but with no attention to the quality of their lives. If we thought that we simply needed to keep a variety of kinds of people in existence and nothing more, it would not matter if those people were imprisoned or forced to breed, so long as this strategy did not diminish the relevant kind of diversity. If millions of people suffered terribly and died, there wouldn't be a moral problem so long as they were replaced by other people of the same kind. This attitude would obviously be intolerable in the case of humans. To say that human welfare matters is to say that the suffering and death alone would be a great tragedy, that imprisonment, rape, and other violations of basic human rights and dignity are themselves great wrongs. One needn't think animal welfare matters in the same way as human welfare to see that considerations of mere existence or diversity aren't adequate replacements for considerations of welfare.

Finally, and perhaps most obviously, human welfare is not the same as animal welfare. Humans still regularly benefit themselves at the expense of animals. We test medicines on them to find cures for our diseases, we eat and wear their bodies, we destroy their homes to build our own, and we kill them for recreation or decorations that please us. While, ultimately, we might all be better off if we found a way to harmonize human and animal interests, this doesn't mean that our interests are the same thing as their interests. They remain creatures with a good of their own, whose lives can go better or worse for them independently of whether our lives go better or worse for us.

Conceptually, then, ecosystem services, biodiversity, and human welfare are distinct from animal welfare. Further, given what ecosystem services, biodiversity, and human welfare are, it is not guaranteed that improvements to them will produce improvements to animal welfare.[13] Indeed, there are many ways of protecting each of these three things that would be detrimental to animal welfare: we could kill off populations of animals who are interfering with ecosystem services provided by plants; we could choose ex situ biodiversity conservation programmes—breeding in captivity—that offer miserable lives for the animals involved; we could improve our own access to food or fresh water by moving to new places and displacing animal populations. If we think animal welfare matters, then using ecosystem services, biodiversity, or human welfare as measurements of it will not suffice.

6. MATTERS OF RESPONSIBILITY

So far, I have argued that we ought to consider the welfare of animals in assessing the impacts of various policy choices we might make about climate change. But one might object at this point that, at least for nondomesticated animals, their welfare is not our responsibility. We do not consider it to be our moral responsibility to protect wild rabbits from wild eagles or from the consequences of an early winter or a dry season, one might argue, so why should we think that their welfare is our responsibility now that the climate is changing?

In reply, three points are worth making. First, the IPCC report aims to understand the impacts of various choices about climate policy for the purpose of managing and reducing risk. Nothing in this very broad description limits the impacts or risks it considers to those that we are responsible for, whether the "we" refers to all or to some subset of humans, and there is no attempt in the document to sort out which impacts responsibility attaches to. The question of responsibility, therefore, is not relevant to the question of which impacts of climate change should be included among those catalogued by the report.

Second, when policymakers choose policies that affect others, they thereby acquire responsibility at least to consider the interests of those affected by their policies. We needn't think that humans in general are responsible for the suffering of wild animals in general to think that, when our climate policies might do great harm to animals, that fact ought to matter to us.

Finally, it is also worth reminding ourselves that climate change isn't a problem that nonhuman animals have brought upon themselves, nor is it simply a matter of the vicissitudes of nature—it has been caused by the choices of human beings. Thus, if assessments of responsibility were to be made, at least some humans and/or human institutions would clearly bear at least some responsibility for this harm. To sum up, then, the fact that these harms might befall nondomesticated animals is not an excuse for ignoring the impact of our policy choices on their welfare.

7. PRACTICAL CONSIDERATIONS

However, one might wonder whether considering animal welfare is at all realistic given the state of international policy negotiations on climate change. Surely negotiators have enough to disagree about without adding debates over the importance of animal welfare. However, while agreement has certainly been difficult to achieve in international negotiations, it is important to recognize that studying the impacts of climate change on animals is not the same thing as requiring the consideration of these facts in international negotiations. The IPCC's role is not to set the agenda for negotiations, but rather to provide information about the impacts of climate change so that policymakers can make informed decisions. Policymakers are free to use or ignore that information as they choose. If that information is not made available, however, it will be difficult for policymakers to take it into account, even if it is an area of great concern for them.

Additionally, there does seem to be an opening for broader assessments of the impacts of climate change among policymakers at the moment. There has been a lot of criticism recently of narrow, reductive assessments of human welfare—treating a country's GDP, for example, as a proxy for the well-being of its citizens.[14] In the human realm, insisting on easily measured and quantified proxies for human flourishing has not gone well. These narrow, reductive accounts of human welfare are slowly being replaced with richer, more pluralistic accounts.[15] The same is true for values. The idea that all value is economic value has been under fire for decades, and richer understandings of value are replacing it. For example, the Warsaw International Mechanism for Loss and Damage took as one of its first tasks the study of noneconomic values. This was in response to many criticisms of prior discussions that treated economic value as a proxy for human welfare. Studying the economic losses produced by climate change, critics argued, was not enough. Many losses (social, cultural, psychological) are not well captured by economic measures, so better ways of including these goods in our assessments are urgently needed. The resulting technical paper on noneconomic losses catalogues a number of different methodologies that can be used to assess the value of noneconomic goods, many of which can be useful for assessing the welfare of animals (UNFCCC, 2013). This is only the beginning of a solution: no measure of animal welfare is actually proposed in the technical paper. However, the report insists on a broadening of what would count as "measurement," and proposes a number of nonaggregative, qualitative, and multidimensional methodologies for achieving it. This broadening leaves room for precisely the kinds of considerations that assessments of animal welfare include.[16]

Within environmental ethics, there have also been discussions lately about the difference between caring about biodiversity or ecosystem resilience in general, and caring about the fate of certain creatures or places in particular.[17] While biodiversity and the state of ecosystems and their services might be valued by many people, this value is not the same as that which they place on particular

places and creatures. For example, many people in the Pacific Northwest region of the United States would not accept losing their coastal forests, even if they knew that an equally diverse and functional ecosystem would take its place. It's the loss of *this* forest that would be grieved, even if something equally ecologically robust replaced it. The focus on biodiversity and ecosystem services has thus been criticized for being too abstract a description to capture the particularity of human moral concern, even in the case of things like ecosystems. Again, we see a pushback on the use of biodiversity or ecosystem services as a way of capturing all that is valuable in the nonhuman world. Animal welfare advocates might do well to join forces with these critics, as they seem to be pushing for theories that would be more inclusive of animal-welfare considerations.

Finally, it is worth noting that coming up with assessments of the impact of climate change on animal welfare is not an impossible task. It is true that policymakers want data, but in part because of the above-mentioned critiques, the IPCC is increasingly open to what might count as data. The section "Impacts, Adaptation, and Vulnerability" describes the basis of its assessments as follows: "Assessment of risks…relies on diverse forms of evidence. Expert judgment is used to integrate evidence into evaluations of risks. Forms of evidence include, for example, empirical observations, experimental results, process-based understanding, statistical approaches, and simulation and descriptive models" (IPCC, 2014a, p. 11). Data on animal welfare is needed, and this requires coming up with measureable aspects of animal welfare for a wide variety of animals. Some aspects of animal welfare (e.g., mortality) are uncontroversial and are already being used to assess the effect of climate change on certain animals (IPCC, 2014a). More comprehensive measures have been developed and are already in use for farm animals and for animals in captivity (in zoos, for example).[18] Broad attempts to come up with rubrics for assessing different aspects of human welfare have already been developed: lists of human capabilities, the "happiness index," and so on.[19] It is not a stretch to think that a combination of animal ethicists, wildlife biologists, veterinarians, and ethologists could come up with a happiness index for different animals, or at least for those most uncontroversially believed to experience suffering. Some efforts in this direction are already underway.[20]

8. CONCLUSION

Climate policy is one area where animal welfare considerations are almost entirely absent, and where this absence is unjustified. In the case of humans, we don't just care that many different kinds of humans exist, that they contribute to the ecosystems they participate in, or that they provide benefits to others. We also care about how their lives go, about whether these lives are full of satisfaction or misery. The same is true for animals. We care not just about biodiversity, ecosystem services, and human welfare, but also about the quality of life for animals. We should think carefully about what kinds of policy choices we would favour by omitting animal welfare from the list of impacts we include in our assessments, and by treating biodiversity as the only nonanthropocentric value at stake in our decisions.

In the area of climate policy, concerns about species and ecosystems from environmental ethics, concerns about animal welfare from animal ethics, and concerns about human welfare from human ethics should all play a role in our decisions about how to deal with climate change. Together these considerations can provide a more complete analysis of the risks we are trying to manage in responding to this particularly urgent and difficult problem.

ACKNOWLEDGEMENTS

The author wishes to thank participants at the Convergence and Divergence: Between Animal and Environmental Ethics Conference, at which an earlier version of this paper was presented, for their astute comments and criticisms. She also thanks Mark Budolfson, Hanna Moerland, Jeff Kasser, Jen Teeple, and Gwendy Reyes-Illg for helpful discussions in other fora of the ideas presented here. Two anonymous reviewers also provided excellent suggestions that greatly improved the quality of the paper.

NOTES

[1] For the rift, see, e.g., Singer (1990); Regan (1983); Callicott (1980); Callicott (1989); and Sagoff (1984). For those lamenting it, see, e.g., Callicott (1988a); Jamieson (1998); and Callicott (1988b).

[2] For examples of acceptance within mainstream ethics, see consequentialists Broome (2006, p. 43); Hooker (1995, p. 23); Kagan (2016); Norcross (2004); and Tooley (1972); deontologists Garthoff (2011); Korsgaard (2004); Kriegel (2013); and Wood and O'Neill (1998); virtue ethicists Baier (1995, p. 269); Driver (2011); Hursthouse (2006); and Swanton (2005, p. 38); feminist and care ethicists Noddings (2013, pp. 148-158); Slote (2007, p. 31); and Walker (2007, pp. 267-268); and contractualist Scanlon (1998, pp. 177-188).

[3] Here I follow the convention within ethics of treating the terms "welfare," "well-being" and "interests" as interchangeable.

[4] Projected rates of warming involve latitudinal shifts of up to hundreds of kilometers per decade. See IPCC (2014a, p. 47).

[5] See IPCC (2014a) for discussions of these effects on humans. For a further discussion of the impacts on animals, see Marchant-Forde (2015, pp. 4-5) and Shields and Orme-Evans (2015). For the impacts on nonhuman nature more broadly and the ethical significance of these impacts, see Palmer (2011) and Nolt (2011).

[6] See Horta (2018, this volume); see also Horta (2010); Horta (2015).

[7] As an anonymous reviewer points out, resolving this question is crucial to the practical project of determining the effect of climate change on animals. Whether some/many/all animal lives contain more suffering than happiness and, if so, under what circumstances is ultimately an empirical question—as it would be in the case of humans. However, the fact that this empirical question has not been adequately investigated (aside from Horta's important efforts) does not justify ignoring animal welfare. In cases where important ethical issues rely on empirical assumptions in need of further study, the conclusion to draw is that more investigation is needed, not that we can ignore the ethical matter.

[8] This paper refers to those who must make choices about climate policy in some places as "policymakers" and in other places as "we" or "us." While the IPCC explicitly addresses its reports to policymakers and seems to have in mind those who make official governmental climate policy, it is also true that a much broader group (possibly all humans) must make decisions about what to do about climate change, which will involve policies, choices, and actions that might have no formal legal status. The "we" is thus meant to designate all of us who face such decisions.

[9] See, for example, Pielke, Prins, Rayner, and Sarewitz (2007) for a description of this situation.

[10] See, for example, Gupta (2016) and Huq (2014) for a description of this situation.

[11] From the point of view of ethics, it is strange that ecosystem services are defined anthropocentrically, since ecosystems benefit many other creatures besides humans. The reason for the anthropocentrism is that ecosystem services were meant to be goods that could be valued economically. For example, we would assess the value of the water-filtering service provided

by wetlands by asking how much it would cost us to build a water-treatment plant to filter the water instead. Whatever it would cost to do it ourselves, then, would be the value of the water-filtering service provided to us by the wetlands. The concept of ecosystem services comes from a broader attempt to put a price on environmental goods so that they can be adequately represented in our economic assessments of costs and benefits. Notice that even though the wetlands might filter water in a way that is also good for birds, we cannot ask "How much would it cost the birds to build a water-treatment plant to filter the water themselves?" Birds are not market participants, and they do not build water-treatment plans. While drinking clean water clearly is beneficial to them, it isn't clear how to capture that benefit economically. If the ultimate aim is the economic assessment of costs and benefits, then anthropocentric assumptions make the value of ecosystem services much easier to discern.

[12] For discussion, see Sarkar (2005) and Garson, Plutynski, and Sarkar (2017).

[13] An anonymous reviewer argues that it is nonetheless reasonable to think that areas with high biodiversity will have high levels of animal welfare—i.e., that the two are correlated. I am unconvinced that this is true, as high levels of biodiversity can be produced in many ways (in some flourishing, stable ecosystems, but also in areas where a lot of species pass through on their way northward to find a more hospitable climate). Furthermore, there are Horta's concerns about the correlation of r-selection with high levels of suffering to take into account. In any case, it is an empirical question. Rather than assume that this correlation is probably true, we should investigate whether it is.

[14] For discussion, see Bergh (2009).

[15] See, for example, McGillivary (2007); OECD (2015); Sen (1993); Diener, Lucas, Schimmack, and Helliwell (2009); and Ura, Alkire, Zangmo, and Wangdi (2012).

[16] For a recent attempt to assess the impacts of climate change on animal welfare using standard economic methodology, see Hsiung and Sunstein (2007). I would argue that animal welfare is not well measured by assessing human preferences for the existence or protection of those animals, a concern the authors acknowledge.

[17] See for example, the discussion of caring about biodiversity (as opposed to caring about particular species) in Maier (2013); see more generally the distinction between "caring for" and "caring about" in Tronto (1989). For further discussion of this issue in ethical theory and environmental ethics, see McShane (2014).

[18] For discussion and references, see Place and Mitloehner (2014); Fraser, Weary, Pajor, and Milligan (1997); and Broom (2011). For examples of welfare indices and their use, see Farm Animal Welfare Commission (2013) or any of the Welfare Quality Assessment Protocols developed by the European Welfare Equality project (e.g., Welfare Quality Consortium (2009b); Welfare Quality Consortium (2009a)). While the welfare of farm animals is important, there are many more nondomesticated animals on earth than domesticated ones. Exact numbers are difficult to come by, but estimates put farm animals at 77 billion (Humane Society International, 2017), and wild mammals alone at 1 trillion (Tomasik, 2017, citing Matheny and Chan, 2005).

[19] See, for example, Nussbaum (2000); Ura et al. (2012). For Nussbaum's application of the capabilities approach to animals, see Nussbaum (2007).

[20] See, for example, the discussion of elephant welfare in Pearce (2015) or the discussion of chimpanzee welfare in Fritz and Howell (1993).

REFERENCES

Albrecht, Glenn, et al., "Solastalgia: The Distress Caused by Environmental Change," *Australasian Psychiatry,* vol. 15, no. suppl. 1, 2007, p. S95-S98.

Baier, Annette, *Moral Prejudices: Essays on Ethics*, Cambridge, MA, Harvard University Press, 1995.

Bergh, Jeroen C. J. M. van den, "The GDP Paradox," *Journal of Economic Psychology,* vol. 30, no. 2, 2009, p. 117-135.

Broom, Donald M., "A History of Animal Welfare Science," *Acta Biotheoretica,* vol. 59, no. 2, 2011, p. 121-137.

Broome, John, *Weighing Lives*, Oxford, Oxford University Press, 2006.

Callicott, J. Baird, "Animal Liberation: A Triangular Affair," *Environmental Ethics*, vol. 2, no. 4, 1980, p. 311-328.

——— , "Animal Liberation and Environmental Ethics: Back Together Again," *Between the Species*, vol. 4, 1988a, p. 163-169.

———, "'Back Together Again' Again," *Environmental Values,* vol. 7, no. 4, 1988b, p. 461-475.

———, "Review of Tom Regan, 'The Case for Animal Rights,'" *in* J. Baird Callicott (ed.), *In Defense of the Land Ethic*, Albany, NY, State University of New York Press, 1989, p. 39-47.

Coumou, Dim, Alexander Robinson and Stefan Rahmstorf, "Global Increase in Record-Breaking Monthly-Mean Temperatures," *Climatic Change*, vol. 118, no. 3-4, 2013, p. 771-782.

Diener, Ed, et al., *Well-Being for Public Policy*, Oxford, Oxford University Press, 2009.

Driver, Julia, "A Humean Account of the Status and Character of Animals," ,*in* Tom L. Beauchamp and R. G. Frey (eds.), *The Oxford Handbook of Animal Ethics*, Oxford, Oxford University Press, 2011, p. 144-171.

Farm Animal Welfare Commission, "Farm Animal Welfare in Great Britain: Past, Present, and Future," London, Farm Animal Welfare Commission (UK), 2013.

Fraser, David, et al., "A Scientific Conception of Animal Welfare that Reflects Ethical Concerns," *Animal Welfare*, vol. 6, 1997, p. 187-205.

Fritz, Jo and Howell, Susan Menkhus, "Psychological Wellness for Captive Chimpanzees: An Evaluative Program," *Humane Innovations and Alternatives*, vol. 7, 1993, p. 426-434.

Garson, Justin, Anya Plutynski and Sahotra Sarkar, *The Routledge Handbook of the Philosophy of Biodiversity*, London, Routledge, 2017.

Garthoff, Jon, "Meriting Concern and Meriting Respect," *Journal of Ethics and Social Philosophy*, vol. 5, no. 2, 2011, p. 1-28.

Gupta, Joydeep, "Loss and Damage, Here and Now," *The Third Pole*, New Delhi, India, July 13, 2016, available at https://www.thethirdpole.net/2016/07/13/loss-and-damage-here-and-now/.

Hooker, Brad, "Rule-Consequentialism, Incoherence, Fairness," *Proceedings of the Aristotelian Society*, vol. 95, 1995, p. 19-35.

Horta, Oscar, "Debunking the Idyllic View of Natural Processes: Population Dynamics and Suffering in the Wild," *Télos,* vol. 17, no. 1, 2010, p. 73-88.

———, "The Problem of Evil in Nature: Evolutionary Bases of the Prevalence of Disvalue," *Relations*, vol. 3, no. 1, 2015, available at http://www.ledonline.it/index.php/Relations/article/view/825.

Hsiung, Wayne and Cass R. Sunstein, "Climate Change and Animals," *University of Pennsylvania Law Review*, vol. 155, no. 6, 2007, p. 1695-1740.

Humane Society International, "Animal Agriculture & Climate Change", accessed September 25, 2017, available at http://www.hsi.org/issues/climate_change/

Huq, Saleemul, "Loss and Damage: A Guide for the Confused," *Climate Home*, October 20, 2014, available at http://www.climatechangenews.com/2014/10/20/loss-and-damage-a-guide-for-the-confused/

Hursthouse, Rosalind, "Applying Virtue Ethics to Our Treatment of the Other Animals," *in* Jennifer Welchman (ed.), *The Practice of Virtue: Classic and Contemporary Readings in Virtue Ethics*, Indianapolis, IN, Hackett, 2006, p. 136-155.

IPCC, "Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment of the Intergovernmental Panel on Climate Change," Cambridge, Cambridge University Press, 2014a.

———, "Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change," Cambridge, Cambridge University Press, 2014b.

Jamieson, Dale, "Animal Liberation is an Environmental Ethic," *Environmental Values*, vol. 7, no. 1, 1998, p. 41-57.

Kagan, Shelly, "What's Wrong with Speciesism?," *Journal of Applied Philosophy*, vol. 33, no. 1, 2016, p. 1-21.

Korsgaard, Christine M., "Fellow Creatures: Kantian Ethics and Our Duties to Animals," *in* Grethe B. Peterson (ed.), *The Tanner Lectures on Human Values*, Salt Lake City, University of Utah Press, 2004.

Kriegel, Uriah, "Animal Rights: A NonConsequentialist Approach," *in* K. Petrus and M. Wild (eds.), *Animal Minds and Animal Ethics*, Transcript Verlag, Bielefeld, 2013.

Maier, Donald S., *What's So Good about Biodiversity? A Call for Better Reasoning about Nature's Value*, Dordrecht, Springer, 2013.

Marchant-Forde, Jeremy N., "The Science of Animal Behavior and Welfare: Challenges, Opportunities, and Global Perspective," *Frontiers in Veterinary Science*, vol. 2, no. 16, 2015, p. 1-6.

Matheny, Gaverick and Kai M. A. Chan, "Human Diets and Animal Welfare: The Illogic of the Larder," *Journal of Agricultural and Environmental Ethics*, vol. 18, no. 6, 2005, p. 579-594.

McGillivary, Mark (ed.), *Human Well-Being: Concept and Measurement*, New York, Palgrave McMillan, 2007.

McShane, Katie, "The Bearers of Value in Environmental Ethics," *in* Avram Hiller, Ramona Ilea, and Leonard Kahn (eds.), *Consequentialism and Environmental Ethics*, London, Routledge, 2014.

Noddings, Nel, *Caring: A Relational Approach to Ethics and Moral Education*, Berkeley, University of California Press, 2013.

Nolt, John, "Nonanthropocentric Climate Ethics," *Wiley Interdisciplinary Reviews: Climate Change,* vol. 2, no. 5, 2011, p. 701-711.

Norcross, Alastair, "Puppies, Pigs, and People: Eating Meat and Marginal Cases," *Philosophical Perspectives*, vol. 18, no. 1, 2004, p. 229-245.

Nussbaum, Martha C., *Women and Human Development: The Capabilities Approach*, Cambridge, Cambridge University Press, 2000.

———, *Frontiers of Justice: Disability, Nationality, Species Membership*, Cambridge, MA, Harvard University Press, 2007.

OECD, *How's Life? 2015: Measuring Well-Being*, Paris, OECD Publishing, 2015.

Palmer, Clare, "Does Nature Matter? The Place of the Nonhuman in the Ethics of Climate Change," *in* Denis G. Arnold (ed.), *The Ethics of Global Climate Change,* Cambridge, Cambridge University Press, 2011, p. 272-291.

Pearce, David, "A Welfare State for Elephants? A Case Study of Compassionate Stewardship," *Relations*, vol. 3, no. 2, 2015, available at http://www.ledonline.it/index.php/Relations/article/view/881.

Pechony, Olga and Drew Shindell, "Driving Forces of Global Wildfires over the Past Millennium and the Forthcoming Century", *Proceedings of the National Academy of Sciences*, vol. 107, no. 45, 2010, p. 19167-19170.

Pielke, Roger, et al., "Climate Change 2007: Lifting the Taboo on Adaptation," *Nature,* vol. 445, no. 7128, 2007, p. 597-598.

Place, Sara E. and Frank M. Mitloehner, "The Nexus of Environmental Quality and Livestock Welfare," *Annual Review of Animal Biosciences*, vol. 2, no. 1, 2014, p. 555-569.

Regan, Tom, *The Case for Animal Rights*, Berkeley, University of California Press, 1983.

Sagoff, Mark, "Animal Liberation and Environmental Ethics: Bad Marriage, Quick Divorce," *Osgoode Hall Law Journal*, vol. 22, no. 2, 1984, p. 297-308.

Sarkar, Sahotra, *Biodiversity and Environmental Philosophy: An Introduction*, Cambridge, Cambridge University Press, 2005.

Scanlon, T. M., *What We Owe to Each Other*, Cambridge, MA, The Belknap Press, 1998.

Sen, Amartya, "Capability and Well-Being," *in* Martha C. Nussbaum and Amartya Sen (eds.), *The Quality of Life*, Clarendon Press, Oxford, 1993, p. 30-53.

Shields, Sara and Geoffrey Orme-Evans, "The Impacts of Climate Change Mitigation Strategies on Animal Welfare," *Animals*, vol. 5, no. 2, 2015, p. 361-394.

Singer, Peter, *Animal Liberation*, new revised edition, New York, Avon Books, 1990.

Slote, Michael, *The Ethics of Care and Empathy*, London, Routledge, 2007.

Swanton, Christine, *Virtue Ethics: A Pluralistic View*, Oxford, Oxford University Press, 2005.
Tomasik, Brian, "How Many Wild Animals Are There?", accessed September 25, 2017, available at http://reducing-suffering.org/how-many-wild-animals-are-there/

Tooley, Michael, "Abortion and Infanticide," *Philosophy & Public Affairs*, vol. 2, no. 1, 1972, p. 37-65.

Tronto, Joan, "Women and Caring: What Can Feminists Learn about Morality from Caring?," *in* Alison M. Jaggar and Susan R. Bordo (eds.), *Gender/Body/Knowledge: Feminist Reconstructions of Being and Knowing*, New Brunswick, NJ: Rutgers University Press, 1989, p. 172-187.

UNFCCC, "Non-Economic Losses in the Context of the Work Programme on Loss and Damage: Technical Paper", 2013, available at http://unfccc.int/resource/docs/2013/tp/02.pdf.

Ura, Karma, et al., *A Short Guide to Gross National Happiness Index*, Thimphu, Bhutan, Center for Bhutan Studies, 2012.

Walker, Rebecca L., "The Good Life for Non-Human Animals: What Virtue Requires of Humans," *in* Rebecca L. Walker and Philip J. Ivanhoe (eds.), *Working Virtue: Virtue Ethics and Contemporary Moral Problems*, Oxford, Oxford University Press, 2007, p. 173-189.

Welfare Quality Consortium, "Welfare Quality Assessment for Cattle", Lelystad, Netherlands, 2009a.

———, "Welfare Quality Assessment for Poultry (Broilers, Laying Hens)," Lelystad, Netherlands, 2009b.

Wood, Allen W. and O'Neill, Onora, "Kant on Duties Regarding Nonrational Nature," *Proceedings of the Aristotelian Society*, Supplementary Volume 72, 1998, p. 189-228.

NATURALNESS, WILD-ANIMAL SUFFERING, AND PALMER ON LAISSEZ-FAIRE

NED HETTINGER
PHILOSOPHY, COLLEGE OF CHARLESTON

ABSTRACT:

This essay explores the tension between concern for the suffering of wild animals and concern about massive human influence on nature. It examines Clare Palmer's animal ethics and its attempt to balance a commitment to the laissez-faire policy of nonintervention in nature with our obligations to animals. The paper contrasts her approach with an alternative defence of this laissez-faire intuition based on a significant and increasingly important environmental value: Respect for an Independent Nature (RIN). The paper articulates and defends naturalness value and explores its implications for the laissez-faire intuition and for concern about wild-animal suffering.

RÉSUMÉ :

Le présent essai examine la tension entre la préoccupation pour la souffrance des animaux sauvages et celle concernant l'influence massive des humains sur la nature. Il examine l'éthique animale de Clare Palmer, notamment sa tentative d'atteindre un équilibre entre la politique de non-intervention dans la nature dite du « laissez-faire » et nos engagements envers les animaux. L'article propose une approche alternative à celle de Palmer qui, tout en défendant cette intuition du « laissez-faire », se fonde cette fois sur une valeur environnementale significative de plus en plus importante : le Respect pour une Nature Indépendante (RNI). Le texte articule et défend la valeur de naturalité (naturalness) et examine les implications de celle-ci pour l'intuition du « laissez-faire » ainsi que pour le souci envers la souffrance des animaux sauvages.

> The total amount of suffering per year in the natural world is beyond all decent contemplation. During the minute that it takes me to compose this sentence, thousands of animals are being eaten alive; others are running for their lives, whimpering with fear; others are being slowly devoured from within by rasping parasites; thou sands of all kinds are dying of starvation, thirst and disease (Dawkins 1995, 131-132).
>
> Nature no longer runs the Earth. We do. It is our choice what happens from here (Lynas 2011, 8).

INTRODUCTION

This essay explores the tension between two values: concern for the suffering of wild animals and concern about massive human influence on nature. Over thirty years ago, philosophical provocateur Mark Sagoff helped bring to light the tension between animal ethics and environmental ethics (Sagoff,1984). He suggested that the union against the dominant anthropocentric ethic between animal advocates and environmentalists should end in a divorce. He argued that consistent concern for the well-being of animals would lead to policies that sacrifice the authenticity, integrity, and wildness of natural systems and claimed, therefore, that animal advocates cannot consistently be environmentalists and vice versa.

Some have argued that Sagoff's diagnosis was aimed at straw-men opponents (Comstock, 1988), but recent writings by those who have taken animal suffering in nature seriously suggest Sagoff identified a real, fundamental, and ongoing tension. Consider the following examples. Martha Nussbaum has argued that, because species in nature do not enjoy "cooperative and mutually supportive relations," we need "a gradual supplanting of the natural with the just" (2006, p. 400). Reflecting on what he describes as the "unceasing slaughter" in wild nature, Jeff McMahan concludes that "we have reason to desire the extinction of all carnivorous species" (2010). In theory, at least, he supports arranging "the gradual extinction of carnivorous species… [or intervening] genetically, so that currently carnivorous species would gradually evolve into herbivorous ones" (2010, brackets inserted). Oscar Horta has argued that there is immense suffering in nature and that it vastly outweighs the happiness experienced. He concludes that "concern for nonhuman animals entails that we should try to intervene in nature to reduce the enormous amount of harm they suffer" (2010, p. 73). These suggested interventions in nature are anathema to environmentalists.

With the advent of the planetary-management ethic fuelled by the recent hype about our living in a new geologic epoch named after us ("the Anthropocene"), the tension between respect for independent nature and the alleviation of wild-

animal suffering has become acute: shall we manage the biosphere for the well-being of sentient wild animals? Imagine a future of compassionate human stewardship of planet Earth where, armed with knowledge from the new field of welfare biology, we manage the sentient wild-animal kingdom to create a "pan-species welfare state" (Pearce, 2009). Implementation might involve phasing out or reprogramming predator species as McMahan suggests, regulating wild-animal fertility, and providing food and medical care for wild animals in need. Eventually we may be able to use genetic engineering and nanotechnology to replace the pain-motivational system in nature "with heritable gradients of bliss" (Pearce, 2015b). Human gains in scientific knowledge about nature's workings and our increasing technical prowess will continue to bring this imagined future closer to human capability. As one proponent of a "compassionately run global ecosystem" puts it:

> Technological advances over the next few decades will mean that every cubic meter of the planet will be computationally accessible to surveillance, micromanagement and control. Such unprecedented power places an immense burden of responsibility on the planet's cognitively dominant species—Homo sapiens (Pearce, 2015a).

While bringing about a just nature devoid of carnivores and putting an end to animal suffering are mere future possibilities, the conflict between minimizing animal suffering and respecting the autonomy of nature is manifest in numerous current practices. Consider our treatment of predators. Environmentalists strongly support the efforts to restore them in cases where humans have brought about their decline. Animal advocates are more circumspect: Might predator restoration lead to relatively quick deaths that reduce suffering of overpopulated prey who might otherwise die slowly and painfully due to injuries, disease, cold, starvation, or parasitism? Or do predators overall add to the violence, fear, stress, and suffering a prey population experiences? Nussbaum endorses sterilization rather than predator restoration to control prey overpopulation (2006, p. 396), and this does seem the best in terms of limiting animal suffering. Environmentalists would object to this as too much intervention in nature and would urge the restoration of the prey population's natural predator. Consider, also, medical treatment for wild animals. Many groups rescue and treat injured wild animals (including predators such as raptors and sea turtles), even when the injury was not caused by humans. In contrast, US national park policy is to let nature take its course in such circumstances. Another example is endangered species programmes favoured by environmentalists that often involve capture, captive breeding, and/or relocation of sentient individuals. Animal advocates object to such treatment because it harms individuals who are often thrown into more difficult and dangerous new lives. An additional important policy supported by many environmentalists is the eradication of human-introduced exotic species, as in the poisoning of nonnative fish populations, a practice that animal advocates clearly oppose.

The tensions between animal advocates and environmentalists are not mere

fabrications, but instead are theoretically and practically real. However, neither environmentalists nor animal advocates are uniform groups, and so, the extent to which conflicts exist between them depends on the particulars of the values they embrace. Environmentalists embrace a plurality of values, including the value of sentient and nonsentient life, the values of biodiversity and ecosystem functioning and health, and the value of an autonomous nature. Some of these conflict with the concerns of animal advocates and some do not. As we have seen, some animal advocates readily embrace human involvement in nature for the sake of animal well-being. But many others structure their support of animals to try to avoid this implication. I will focus particular attention on Clare Palmer's articulation of an animal ethics that defends what she calls "the laissez-faire intuition*"* (2010, p. 2). Hers is a particularly sophisticated and insightful defence of our obligations to animals, and one that strives to avoid the implication that we must alleviate wild-animal suffering. I will contrast her approach with an alternative defence of this laissez-faire intuition, one based on a significant and increasingly important environmental value: Respect for an Independent Nature (RIN). I will articulate and defend this naturalness value from its critics and explore its implications for the laissez-faire intuition and for our concern about wild-animal suffering.

NATURALNESS VALUE

Something is natural to the extent it is not influenced by humans.[1] An entity's naturalness thus comes in degrees—for example, wilderness areas are more natural than are city parks and wolves are more natural than dogs. Naturalness involves an overall judgment of the degree of independence of an entity from humans, that is, of the extent to which a being is autonomous vis-à-vis humanity.

Human influence can be intentional or unintentional, managed or unmanaged. It can involve control or not. Putting too much emphasis on particular types of human influence can lead one astray. For example, Emma Marris has argued that, while national parks are managed, urban weed lots are not. From this she concludes that the weed lots are wilder than are the parks (2016). But if we think of human influence overall, it is clear that we exert much more influence over the urban weed lot than over the national park and that the latter is far more natural as a consequence.

A similar caution should be exercised concerning the importance of intention in human influence. According to Christopher Preston (2011), it is intentional human action that is of particular concern because such action creates artifacts. He suggests that geoengineering as a response to climate change would make the climate a human artifact, while unintentional human-caused climate change has not created an artifact. I am not convinced that human artifacts must be intentionally created (consider the pile of roadside litter a mile from a McDonald's). But the real problem is that a sole focus on the intentional dimension of human impact ignores the importance of the overall *amount* of human impact. Unintended human effects on nature can be far greater than intentional ones and can

undermine naturalness much more.

Consider Clare Palmer's suggestion that genetically altering pikas to withstand higher temperatures "smears human intention out over the entire landscape" (2016, p. 245). She writes: "Humans *intended* the existence of these pika, with a specific genetic profile, in this place at this time; they are present by human plan . . . making aspects of a place the product of human intention" (p. 245). Notice, however, that if we did not rescue the pika and continued business as usual, this would unintentionally drive pikas in the American West extinct. While this would not smear human intention over the landscape, it is arguable that it would give us a much greater impact on nature than we would have with our rescue attempt. Some intentional human influence on nature can lessen human impact overall, as when we remove the first few members of a human-introduced invasive species before it has time to spread.

Relatedly, influence over nature that amounts to control would seem to be especially problematic in terms of undermining naturalness and its associated value, as it seems clearly to compromise nature's autonomy. But, here again, minor control over nature can undermine naturalness far less than uncontrolled massive human influence, as is evidenced by climate change. Lack of human control is no guarantee of naturalness, as can be seen additionally in wild parties and traffic jams.

It should be noted that naturalness is not solely (or mainly) an invariant historical property that, once lost due to human intervention, can never be regained, a position that some have attributed to Robert Elliot (1982;1997) in his important faking-nature writings. The loss of degrees of naturalness—what I will call *humanization* of an entity—can washout over time, like boot prints in the spring snow. As the effects of humanization recede and natural forces regain their relative strength, naturalness returns. Nature can rewild itself. Old mining roads in the North American Rocky Mountains are often difficult to identify after hundreds of years of nature carrying on and taking control. As Clare Palmer and Brenton Larson helpfully put it, naturalness is an "*ongoing state* of independence from human beings," as opposed to simply a historical, human-independence origin property (2014, p. 654). While it will always be true that humans built roads in a wild area, it is also true that the human influence these roads embody will eventually be gone. As noted above, naturalness can also be enhanced via additional human activity, as when humans pick up trash, remove a dam, or restore an ecosystem or species. Sometimes human activity can undo previous human impacts, while failure to intervene amounts to "shackling" a natural entity to continued "human-induced trauma" (Light, 2002, p. 181).

A popular and frequent critique of this emphasis on naturalness is that the focus on human-independent nature ignores that humans are part of nature and sets up an unhealthy dichotomy between humans and nature. As Baird Callicott once put it, "We are animals ourselves… very precocious to be sure, but just big monkeys, nevertheless. We are therefore a part of nature, not set apart from it.

Chicago is no less a phenomenon of nature than is the Great Barrier Reef" (1992, p. 17). While it is crucially important to realize the ways in which humans are part of nature (e.g., we evolved on the planet like all other living things and, with them, deeply depend on its natural processes, including those that work within us), it is equally important to emphasize our differences, including our moral responsibilities and more generally the vast extent to which social, political, economic, aesthetic, and technical considerations shape our lives. Failure to separate our understanding of human activity from that of nonhumans is tantamount to insisting that the social sciences should be reduced to the natural sciences. While a human/nature apartheid is clearly problematic, so too is the failure to distinguish between human- and nonhuman-caused phenomenon, as when people try to justify human hunting as just another predator-prey relationship or argue that building roads into wilderness areas does not compromise those areas because humans are part of nature too.[2]

Naturalness is a type of (negative) causal relation between humans and nonhumans. Why should we value that relation? Many do value naturalness and in a variety of different circumstances. Our admiration of the Old Faithful geyser in the Yellowstone National Park would be lost were we to discover that the size and periodicity of its eruptions are due to the well-timed placement of baking soda in its underground plumbing by park personnel. We are admiring an amazing, unplanned natural phenomenon, not the ability of people to keep to a schedule or to mix the right chemicals. Picking mushrooms for dinner from a supermarket bin does not compare to discovering wild mushrooms on the forest floor (and this is not just because of the beauty of the setting). Leaving aside the (likely erroneous) health concerns, much of the objection to genetically modified foods comes from a desire to eat more natural foods. Our respect for an athletic performance is often due in part to our appreciation of the native ability of the athlete, not just the individual's hard work, and it would be severely diminished were it the product of steroids. Or consider how we differentially evaluate the suffering caused by predators and the suffering caused by humans, or natural death versus murder. Such examples of preferentially evaluating more natural entities and events permeate our lives. Those who deny the value of the natural will have to consider such evaluations as delusional. An ethic of respect for independent nature explains and provides theoretical support for such widespread value judgments.

Naturalness has not always had the acute value it has today. When humans first emerged on the planet, their initial acts of humanization did not entail any—or, at least, any serious—loss of value. When we humans were a small and helpless species, our increasing control of nature was both important for us and no great loss for nature. But in today's world, where humans' massive alteration of the planet continues to accelerate unabated, the loss is significant and the value of the remaining relatively untouched nature is substantial and ever increasing. In many respects, our increased influence on and control of natural events is not good even for us.

Part of the defence of the value of naturalness is belief that there should be limits to the extent of the human enterprise. Human freedom to act on and control the world around us should not be unlimited. Humans should not be responsible for everything. Imagine a world where humans determine the weather and the seasons—when spring comes, when it rains, whether it is sunny or cloudy, whence and how fast the wind blows. Imagine a world in which humans have decided which species exist, in what places, and at what concentrations. Imagine a world where every tree has been planted by us, the path of every river shaped by our plans (or from unintended results of our activities), and where natural beauty has been replaced with landscaped aesthetics. Think of a world where every characteristic of our children is engineered in detail. A world where everywhere we look we see human fingerprints and where human responsibility is omnipresent is a seriously impoverished world. It is also in important ways a lonely world, with just us, our projects, and our by-products. Only a narcissistic species would appreciate such a world of human overreaching. We are not masters of the earth. We are not the "God species," as some have suggested (Lynas, 2011).

Nor should we even attempt to become "planetary managers" who try to "manage planet earth" (Scientific American, 1989). We are not boss. We are not in charge of this place. We should not try to take control and handle the planet. A proper human relation with nature should be based on proper humility, not grandiosity. Our massive impact on the planet is arrogant and hubristic. A virtuous human species would do much more to accommodate itself to the world and back off from the limitless imposition of its will on it. Such a species would manifest greater acceptance of, and gratitude for, the given, gifted character of the natural world. It would gladly share the earth with others—namely, with the rivers, otters, spiders, glaciers, and forests—instead of taking more and more for itself. In short, it would respect the integrity and independence of the nonhuman other. Valuing and promoting naturalness respects that autonomy and manifests the virtues of humility, gratitude, accommodation, fairness, and self-control.[3]

In short, the rationale for naturalness value and for the ethic of respect for independent nature is based on an understanding of the proper place of humans in the world, an embrace and prioritization of certain human virtues, a theoretical explanation and accommodation of widespread value judgments, and the promotion of human and nonhuman flourishing.

Although naturalness value is a critically important value, it is, of course, not the only value worthy of promotion and it will have to compete with other, sometimes conflicting, values. While naturalness is typically value enhancing, it is by no means invariably a trumping value. Nor does naturalness guarantee that the entity with this property is good, all things considered. While a natural earthquake is less bad than the same earthquake caused by fracking, it is still likely to be of negative value overall. Although it is an increasingly important and powerful value in this supposed "age of man," naturalness value can be over-

ridden by other important values.

All life has value, although to differing degrees, depending on sophistication and context. Animals are especially important and particularly animals with an inner life. Insofar as a creature has positive and negative experiential states such as pleasure and pain and caring and fearing, I believe that gives that being a special claim to our moral attention. While the pain and fear experienced by vast numbers of the animals that are within human culture are much greater reasons for moral concern, such experiential states of animals living in nature are also morally relevant. While it is often suggested that suffering in nature is neither good nor bad, this view is not plausible. While it is true that such suffering is neither right nor wrong, this does not show that it is evaluatively neutral. While pain in nature is instrumentally valuable—warning animals of danger or protecting them from further injury, for example—this fails to show that, considered in itself (i.e., intrinsically), it is not bad. If we believe our suffering or our pets' suffering is intrinsically bad, then wild-animal suffering too is intrinsically bad. And its badness does give us a moral reason to consider alleviating or preventing it.

This sets up a tension between respect for independent nature and moral concern for potentially preventable animal suffering in nature. In deciding how we should act concerning such cases, we must weigh these two moral reasons against each other. I will defend the noninterventionist ethic by arguing that preserving naturalness value typically outweighs the importance of alleviating animal suffering. This is especially true of large-scale intervention, such as predator elimination programmes or massive contraceptive control for predator and prey populations. General attempts to remake nature in the image of compassionate welfare biology or to make nature fair extend human influence and responsibility into nature much too far. Small-scale and individual assistance that alleviates suffering (such as shooting a dying and suffering elk) and causes relatively little loss of naturalness may often be advisable.

CLARE PALMER'S NO-ENTANGLEMENT DEFENCE OF LAISSEZ-FAIRE

It will be helpful to compare this naturalness defence of nonintervention with the careful and insightful animal ethic that Clare Palmer has articulated in a recent series of papers and a book. Palmer (2010) promotes the nonintervention ethic by defending what she calls the "laissez-faire intuition" concerning our treatment of animals in the wild. Her analysis of our obligations towards animals in general is constructed in such a way that we have no duty to rescue wild animals from their fates in nature.

Palmer's position is based on the distinction between positive duties to assist and negative duties to avoid causing harm. She accepts the idea that there is a significant moral difference between failing to assist someone and harming someone. As she puts it, "One is peculiarly responsible for what one does, in a way one is not for what one fails to prevent" (2010, p. 74). For example, drowning a wildebeest is morally different from letting it drown. While the duty not to

harm applies to all sentient creatures, assistance is obligatory only when it involves those with whom we are "entangled."
These distinctions allow Palmer to embrace a set of attractive views concerning our treatment of animals, both domestic and wild. Because of rich entanglements with pets, animals used for food or kept in zoos, and other animals that are part of human culture, not only must we not harm them, but we also have obligations to take care of them, provide for their needs, and assist them when they are in trouble. This is in large part because we made them unable to take care of themselves, but more generally because our entanglements with them generate obligations. You have an obligation to rescue your dog who is drowning, or even the neighbour's dog, because you are entangled with those animals. In general, our duties to animals in the wild are limited to the negative duty not to harm; assistance when they are in need is not required unless of course we have somehow entangled ourselves with them in relevant ways.

What engagement involves is a tricky and crucial part of her theory. In the simplest case, I have a duty to assist you from drowning if I have agreed to be your life guard or if I have harmed you by pushing you into the water. I also have a duty to assist you if I have made you vulnerable or dependent. Furthermore, I have a duty to assist you if I have somehow *benefitted* from an injustice you have suffered (even if I did not cause it) or if I *share attitudes* whose existence supports and helps explain why you are in an unfortunate situation. Palmer (2010, p. 110-113) here relies on analogous arguments for global assistance developed by Thomas Pogge and arguments for group responsibility due to attitudinal climate developed by Virginia Held. Pogge argues that because of shared institutions shaped by the well off to the detriment of the worse off (resulting in, for example, uncompensated exclusion from natural resources), global assistance from the rich to the poor is required. Held argues that shared attitudes about a group's inferiority or other attitudes that lead to a group's vulnerability can give one responsibility for harm caused to that group, even if one did not directly cause it.

So, when animals are disadvantaged due to shared institutions from which humans benefit or due to shared attitudes that create vulnerability, assistance is required. For example, if a squirrel has been hit by a car, one has a duty to assist it, and this is true even if one was not driving the car, for we are "entangled" with the squirrel: we participate in and benefit from the car culture that led to the squirrel's injury. We share attitudes about the relative unimportance of animal pain and death when those conflict with our desires and with prominent institutions in our lives. As Palmer puts it: This "altitudinal climate" creates situations where, although "only some are directly responsible for harms to individual animals, many others contribute to creating the world in a way that such harms are institutionalized (as in the meat industry), encouraged, or at least tolerated" (2010, p. 114).

Palmer's account of what counts as sufficient entanglement to generate positive duties allows her to respond to an important problem for anyone who cares about

animals, rejects the speciesist excuse, and yet shares the laissez-faire intuition that we should generally not assist wild animals. The problem is that, if we are not obliged to assist animals with whom we have no relationships or other entanglements, it would seem that we also do not have any obligations to assist people with whom we have no relationships or entanglements—starving children in other countries, for example. Palmer, like most of us, wants to accommodate the intuition that we do have such obligations. So how is it that we have duties to assist unrelated humans or other people's pets, when we have no duty to assisted unrelated wild animals? Palmer's response is to invoke the entanglements clause and claim that, unlike animals in nature, both cultural animals and humans are sufficiently entangled to undergird the duty to assist.

Palmer's work in this area is insightful, sophisticated, and ground breaking. Nonetheless, I note several worries. For one thing, it seems as though, on Palmer's account, a thousand years ago, before human societies became so entangled, there would have been no obligation to assist an unrelated human. So, back then, we did nothing wrong if we let people not related to us starve, even if we had plenty. And even today, there would be no obligation to assist a suffering ET on some other planet, for there would be no entanglements to generate that duty.[4]

A more pertinent problem concerns the obligations we have to wild animals as a result of entanglements we have with them in today's world. Given recent massive human impact on nature, is it not plausible that even wild animals are entangled with human society in the ways that, according to Palmer, would bring about duties of assistance? Palmer is well aware of this problem. She writes:

> What counts, in a time of globally pervasive human influence, as a "truly wild" animal, and a "morally relevant entanglement"? Wildlife management, human development of animal habitat, anthropogenic fires, and so on, have affected many wild animals' lives; and anthropogenic climate change is already impacting many wild animals' habitats. Do more diffuse anthropogenic phenomena such as climate change create special obligations to assist wild animals?[5] (2015, p. 208)

Climate change and other human influences have affected and will continue to affect wild animals in numerous ways, including via deforestation; ocean overfishing and acidification; coral reef destruction; desertification; alteration of rainfall, seasons, and migration patterns; and increase in extreme weather events and disease occurrence.

It looks as though climate change and other human impacts on nature are likely to have harmed many wild animals. Many of us have benefitted from policies resulting in such harms, and many people share in pro-development, business-as-usual attitudes that indirectly contributed to those harms. In Pogge's language, humans and wild animals share "differential effects of a common and violent history," and many wild animals suffer from "uncompensated exclusion from natural resources." And, in Palmer's language, we are "responsible for the gener-

ation of particular vulnerabilities" in wild animals, and there is a "history of domination" with respect to many of them.
Given that our entanglements with wild animals are fairly extensive, this would seem to significantly compromise the laissez-faire intuition. Palmer understands these entanglements and accepts the weakening of that intuition that results. She writes:

> Accepting that anthropogenic environmental change does create special obligations to animals does not undermine the contextual argument; it just means that now *most* sentient animals have been drawn into relations with humans that generate special obligations, just as human societies now have entanglements that draw in virtually all people. This makes the position more demanding; but then, its objection to a requirement for humane wild intervention was not based on the over-demandingness of the requirement (2015, p. 208, italics added).

Palmer is overly sanguine about this consequence of her views. She is to a large extent abandoning the laissez-faire policy and joining the pro-interventionist, human-responsibility-for-nature camp of McMahon, Nussbaum, Horta, and Pearce. It is true that she disagrees with them about what generates our obligations to wild animals. It is also clear that the details of assistance required would be different and that the extent of assistance provided would be significantly less. Nevertheless, Palmer appears to be committed to substantial intervention on wild animals' behalf. When Palmer's entanglement view of obligation is conjoined with the belief in massive human impact on wildlife, we are approaching the view of the Anthropocene boosters who believe that human influence over the planet is now so great that we have responsibility and management authority for what happens on earth. In Palmer's case, we now have responsibilities concerning the majority of sentient wild animals. This amounts to significant human responsibility towards nature. I worry that her concessions might entail a commitment to welfare programmes for most sentient wild animals, analogous to welfare programmes for humans and cultural animals, including medical assistance, birth control, and food assistance. If sentient wild animals have become entangled with human society in the way in which distant humans and culturally embedded animals have been, then we would need to extend analogues of the assistance policies we have for these groups to the sentient wild-animal kingdom.

Palmer has several avenues of response to this worry that her views lead to such extensive assistance to wild animals. She points out that insofar as the impact we have on wild animals is significantly less than our impact on domesticated animals, our obligations would be less extensive. Furthermore, when that impact is unknowable or unrectifiable, no duties of assistance would be required. She writes:

> Any special obligations flowing from climate change are likely to be weaker than those flowing from (say) deliberate selective breeding for

> dependence. The impacts of climate change on animals are harder to identify, less intentional and certainly less predictable than selective breeding … Over time, more vulnerable animals will shift geographical location (if they can) or else disappear … And finally, there is no point offering assistance that is ineffective; given the degree of climate change to which we are now committed, there will be some cases where assistance would not constitute a benefit over time (2015, p. 208).

Palmer's defence here against large-scale obligations of assistance to wild animals relies in part on limitations of our knowledge and technical abilities. If we could know what our negative impacts are and on which sentient animals, and if we could rectify those impacts, we would have a duty to do so because of our entanglements with wild animals. This reliance on contingent matters—rather than on theoretical considerations—to support the laissez-faire policy is something that Palmer has suggested is a weakness in others' positions. She is right to be worried about such reliance. Defending the idea that we should not involve ourselves in relatively wild nature on the grounds that we don't know what our negative impacts have been or how successfully to provide reparations to animals we have harmed is an argument that becomes weaker and weaker as our knowledge grows and technology improves, as they surely will.

Palmer has an even more forceful response available that helps to salvage the laissez-faire intuition. She argues that much of our impact on wild animals is not harmful and is even beneficial. She writes:

> There will be many animals, even in a world of anthropogenic climate change, who are not harmed or made vulnerable by climate change nor negatively affected by humans in other ways. Some sentient animals may benefit from climate changes; for others, such changes would make little difference. … So even in a world of climate change, where human use of the Earth's atmosphere, land, and waters is constantly expanding, there will still be animals to whom humans do not have obligations of assistance (2010, p. 142-143).

Palmer even considers the possibility that climate change might constitute a net benefit for sentient animals. In a provocative paper questioning the common assumption among nonanthropocentrists that concern for nonhumans provides powerful moral objections to anthropogenic climate change, she writes: "But there's deep uncertainty here. We can't tell whether climate change will cause more suffering to non-humans than it will relieve" (2011, p. 290). Thus, insofar as our massive impact on sentient animals is beneficial or neutral, laissez-faire is not threatened, for such entanglements do not generate obligations to assist. Of course, even if climate change overall benefits sentient animals, it clearly harms great numbers of them as well, and they would require assistance.

Another worry Palmer's account must address concerns obligations to protect

individuals from harms caused by natural events for which no one is responsible. Examples include avalanches, floods, and windstorms. Palmer wants to come out on this issue as I would: we should protect humans and cultural animals from natural threats, but not wild animals. This concern differs from those raised above because causing harm, benefitting from that harm, and sharing in attitudes that help promote disadvantages all are entanglements that lead to duties of assistance based on considerations of justice. But justice does not come into play when wondering about obligations to assist those threatened by natural causes.

Tom Regan's theory of animal and human rights faltered on just this point. He claimed that, while we do have duties to assist in the prevention of rights violations, we have no obligation to assist animals threatened by natural causes. His argument was that only moral agents can violate rights, and since nature is not a moral agent, no rights are being violated when a predator or avalanche kills an animal. Thus, the duty to prevent rights violations does not apply in these cases (Regan 1983, p. 284-285). As Dale Jamieson (1990) and others have pointed out, given Regan's desire to parallel human and animal rights, this suggests that we have no obligation to assist humans threatened by natural causes either, a consequence clearly important to avoid.

Palmer addresses this problem by arguing that duties can arise out of "social relations" separate from relations involving injustices. She suggests that all humans and cultural animals are members of a global social community, in a way in which wild animals are not. She argues that the existence of these "strong social relations… provides a basis for maintaining that there are at least weak, community oriented obligations to assist" fellow humans and cultural animals in the mixed social community from natural threats (2010, p. 123).[6] I am not sure to what extent Palmer has finessed the obvious worries about social-relations-based duties justifying intrahuman discrimination, including against other races and sexes, as well as discrimination against humans with little ability to participate in social relations (so-called marginal cases).[7] I believe she has avoided the speciesism objection, though some disagree (Faria, 2015).

THE NATURALNESS VERSUS ENTANGLEMENT JUSTIFICATIONS FOR LAISSEZ-FAIRE

I will now consider how the argument against human involvement in the lives of wild animals based on respect for independent nature compares in its implications to the consequences of Palmer's no-entanglement justification for laissez-faire.

One might think the respect-for-independent-nature proposal for laissez-faire is dead on arrival. Given massive human impact on the planet, including widespread disruptive effects on animals and other wildlife, perhaps there is no autonomous nature left to respect. Some claim that the Anthropocene is a time in which humans have influenced all of nature. An appeal to naturalness value therefore provides absolutely no block to assisting wild animals, as you cannot

compromise something that no longer exists.

The dialogue concerning the Anthropocene is an important one, although also dangerous. Humans are so drastically affecting the planet that this has had, and will increasing have, severely negative effects on both humans and wildlife. Framing human impacts in terms of the Anthropocene construct helps us take those impacts more seriously and can propel us to the realization that we need to better manage ourselves and our effects on nature, both for our own benefit and for the benefit of nature. But the idea is dangerous when, rather than encouraging a stepping back, it is promoted as a justification for the alleged inevitability of human management of nature and for our moral responsibility to do so. Loose talk of the "human domination of nature" and the "end of nature" is used to downplay or reject traditional environmental obligations to leave nature alone, to restore natural systems, and to help nature rewild. Here is a sample of this problematic perspective:

> We are poised at an important time in human and Earth history. For the first time, we... are changing the way the entire planet functions. This is an amazing opportunity—humanity has now made the leap to an entirely new level of planetary importance. As Stewart Brand said in 1968: "We are as gods and might as well get good at it" (Ellis, 2011).

Such ideas are based on an egregious exaggeration of the extent of human influence over Earth and they manifest an anthropocentric narcissism that is blind to the ongoing agency of nature. They ignore that naturalness comes in degrees and that its relative rarity only increases its value. It is important to value naturalness in the Anthropocene, now more than ever (Hettinger, 2014). Respect for independent nature is still an absolutely crucial guiding value in our relationship with nature.

So, even in the Anthropocene, naturalness value continues to provide a powerful consideration against human intervention to assist wild animals. For example, that anthropogenic climate change has dramatically increased the rate of interbreeding between grizzly bears and polar bears does not mean there is no naturalness left to protect in our treatment of them or their ecosystems. This impact would not undermine the unnaturalness of relocating polar bears from the Arctic to Antarctica, even if we ignore the negative consequences this would have on penguins and other southern species.

Both Palmer's entanglement view and naturalness value count against harming wild animals. For Palmer, this is because we have a prima facie duty not to harm others, while the naturalness defence grounds the proscription on a respect for independent nature. One clear difference between Palmer's position and what respecting naturalness suggests is that, while anthropogenic impacts that harm wild animals lead Palmer immediately away from the laissez-faire intuition (because we are now entangled with them and justice requires making amends, if possible), on the naturalness account such harms typically do not. Palmer's view would allow rectifying harms to wild animals even if it led to further loss of natural value, and of course RIN would oppose such a move. For example, if

humans introduced a disease into an animal population that caused herd members to suffer, her view would require rectifying that injustice even if doing so involved such actions as capturing the animals affected and inserting a chemical-releasing implant into them. RIN would oppose such a move as involving additional loss of naturalness value.

Another difference is that Palmer's position sanctions positive intervention on behalf of wild animals even without entanglement. While her theory implies we have no duty to assist unentangled wild animals, it allows that such assistance is permissible. Describing her theory, she says it

> does not defend a non-interventionist view in the sense that intervention is *impermissible*... It defends, instead, a non-interventionist view in the sense that intervention in wild nature to relieve wild animal suffering, or otherwise to assist wild animals, is not *required*, although it may be *permissible* (2015, p. 206).

In contrast, respect for independent nature provides a reason to think such assistance is prima facie not permissible.

A further difference concerns what are allowable prima facie reasons for assisting wild animals in need even while embracing the laissez-faire policy. Palmer's defence of laissez-faire leads her to embrace counterintuitive ideas about the nature of these reasons. For Palmer, the mere fact that wild animals have rich experiences of suffering does not by itself generate obligations or even, it seems, direct reasons to assist them. She writes:

> One implication is that—unlike on consequentialist views such as that proposed by McMahan (2010)—we have *no reason* to try to reduce overall suffering in nature by managing or shaping nature differently, trying to find ways to reduce predation, disease and the harshness of wild conditions, assuming we could do so successfully. This seems to me to be a helpful implication (2015, p. 207, italics added).

However, as noted above, Palmer does *allow* that assistance is (or may be) permissible. Furthermore, in cases of individual encounter with suffering wildlife, Palmer says assistance is "perhaps desirable" (2010, p. 149), although the "weak reason for approving of assistance" (2010, p. 150) comes out of a concern for the character of the agent assisting (that they not be "unsympathetic" or "insensitive") rather than directly out of concern for the suffering animal.

In contrast, an advocate of RIN can accept the plausible ideas that wild-animal suffering does itself provide reasons to assist, that these reasons are directed at the animal (and not at one's own virtue), and that they are not necessarily weak. A defender of RIN would claim, however, that at least in cases of large-scale interventions to prevent animal suffering, those reasons are outweighed by the value of naturalness—that is, respect for independent nature. In cases of indi-

vidual encounter with suffering wildlife when no significant naturalness value is at stake, an advocate of RIN can insist that one ought to assist and that it would be wrong not to. In contrast, Palmer claims: "You could walk on by and … you would have done nothing wrong" (2010, p. 148) (though you could be criticized for being insensitive).

One would be mistaken to think that RIN is totally noninterventionist. As noted earlier, degrees of naturalness can return both with and without human assistance. Human restoration and rewilding can constitute an undoing, a lessening of prior human impact, or a prevention of further ongoing human impact. The overall result in such cases is a lessening of the degree of humanization, despite the additional human intervention. Clearly, not all attempts at restoration or rewilding lessen humanization. An example would be trying to restore a biotic community to a geographical location whose soil and climate have been so drastically altered that continual and ongoing significant human intervention will be needed to sustain that community. Consider a recreated animal and plant community that requires constant human watering, yearly infusions of fertilizer, and ongoing poisoning of incoming species now more suited to that locale.

A clear example of (additional) human intervention that does lessen humanization is removing human-introduced, invasive animals before they have a chance to dramatically impact ecosystems. If the European rabbits introduced into Australia in the middle of the nineteenth century had been successfully eradicated early on, human impact on the Australian continent would have been greatly lessened. From a few dozen, the rabbit population swelled into the billions, covering most of the Australian continent. They harm native wildlife by, for example, grazing plants so severely that they cannot regenerate and taking over existing burrows of other small mammals. Rabbits have been implicated in the decline (and in some cases extinction) of both native animals and plants. While eradicating them would have involved additional human activity in nature beyond the original introduction, respect for independent nature clearly would have condoned the policy.

Palmer's position seems to have more trouble with this conclusion, and I am not sure what her theory entails for this kind of case. By introducing those rabbits, we have entangled ourselves with them, and if the introduction has harmed them, we owe them duties of restitution. Eradicating these rabbits would clearly harm them and, if the original introduction was a harm, killing them would also involve a failure in our duties of restitution to them. On the other hand, those introduced rabbits are vectors by which humans will harm a far greater number of wild animals. Killing the introduced rabbits would be a way for us to harm fewer wild animals overall. If Palmer accepts eradicating the introduced rabbits, she is condoning killing animals who otherwise would survive and to whom we may have obligations of restitution, in order to avoid killing more animals.[8]

In certain circumstances RIN could be *more* interventionist than is Palmer's view. In her discussion of climate change's impact on animals she notes that

animals who have benefitted from climate change are not owed assistance. Entanglements that benefit animals do not need to be rectified, nor do entanglements that are neutral in their effects. RIN would equally oppose benefitting as well as harming wild animals and it may well condone the removal of benefits or neutral impacts if this were to enhance naturalness. For example, if anglers built a fish ladder to extend the range of mountain trout into a lake that had been devoid of fish, RIN would count in favour of their removal, while Palmer's view would suggest not. Or consider that many bird species have become smaller in size due to climate change (Palmer, 2011, p. 276). If we assume that making birds smaller does not harm them, Palmer's views suggest we need not respond to this impact, whereas RIN would consider interventionist policies trying to reverse and undo this human impact on birds.

CONCLUSION

The suffering of wild animals is a reality not taken seriously by many, including many animal advocates and environmentalists. The massive human impact on the natural world is another reality that cries out for attention and response. Taking both concerns seriously puts animal advocates and environmentalists at loggerheads. RIN is so important in today's world that, in general, it justifies the laissez-faire approach, even while acknowledging the significance of wild-animal suffering. Relying on the value of naturalness as support for the laissez-faire policy has significant advantages over Palmer's non-entanglement justification. I think the laissez-faire intuition really is the naturalness intuition and that Palmer's attempt to justify it without appeal to naturalness value involves some significant shortcomings.

NOTES

[1] A good deal of what I say below about the value of naturalness comes from ideas Bill Throop and I developed in an earlier article. There we used the term "wildness" rather than "naturalness." See Hettinger and Throop (1999).

[2] Compare Mark Woods's response to the idea that valuing naturalness sets up an unhealthy dichotomy between humans and nature. See Woods (2017, chapter 2). Woods's entire book is a valuable addition to the literature defending the value of naturalness.

[3] Emma Marris (2015) has argued that a focus on naturalness is about us (it is anthropocentric), especially when it is to the detriment of biodiversity. While naturalness value ("wildness" is the term she uses) is a human value in the sense that all values we care about and act on, including biodiversity value and the value we see in animal life, are "human values," it is a value that promotes the nonhuman and puts limits on the scope of humanity. I do not see how that could be anthropocentric in any pejorative sense.

[4] Compare Faria (2015, p. 241).

[5] In response to Palmer's question, a reviewer for this paper points out that, rather than generating additional reasons to intervene in nature, anthropogenic climate change gives us greater reasons to "back off" from nature. There is certainly something right here from the perspective of respecting independent nature: great interference in nature (as represented by climate change) gives us greater reasons to interfere less. So, there is something peculiar about using climate change as a justification for even more human intervention. However, if we end the discussion there, this ignores that (1) when we harm others, this generates prima facie obligations to make it up to them, and these obligations need to be weighed against our duty to respect independent nature, and (2) as suggested above, sometimes additional human influence on nature can lessen human influence overall.

[6] I worry about Palmer's suggestion that our obligations in these cases are "weak." It seems to me we have a strong duty to assist unrelated humans, who, for example, are buried in an avalanche or threatened by a flood. RIN can often provide a reason for assisting unrelated humans but not unrelated animals. Typically, rescuing humans does not involve a large loss of naturalness value, while rescuing wild animals does. For example, requiring that structures be elevated in flood zones does little to reduce naturalness value, while orchestrating the migration patterns for wild animals to avoid spring runoff would significantly lessen naturalness value.

[7] While it is true that severely disadvantaged humans are typically part of family groups and have humans who care about them and thus participate in one-way social relations of that sort, it is also true that many wild animals have people who care about them, though typically not in the individual way in which disadvantaged humans are cared about. Would this mean we have duties to assist those wild animals whom people care a lot about, particularly when that care is directed at individuals (e.g., radio-collared, numbered, and named wolves)?

[8] Palmer (2010, p. 146-148) allows killing some wild elk who have been infected with a human-introduced deadly disease in order to prevent the disease from spreading and killing more elk. This case is different from the introduced-rabbit case, as all the elk are at risk if we do nothing further. In contrast, the introduced rabbits are not at risk if we refrain from additional activity.

REFERENCES

Callicott, J. Baird, "La Nature est morte, vive la nature !," *Hastings Center Report*, vol. 22, no. 5 (September/October), 1992, p. 16-23.

Comstock, Gary, "How Not to Attack Animals Rights from an Environmental Perspective," *Between the Species*, vol. 4, no. 3, 1988, p. 177-178). Available at https://doi.org/10.15368/bts.1988v4n3.5

Dawkins, Richard, *River Out of Eden: A Darwinian View of Life*, New York, Basic Books, 1995.

Elliott, Robert, "Faking Nature," *Inquiry*, vol. 25, 1982, p. 81-93.

———, *Faking Nature: The Ethics of Environmental Restoration*, London, Routledge, 1997.

Ellis, Erle, "The Age of Anthropocene: Should We Worry? Neither Good nor Bad," *New York Times*, Opinion , Room for Debate, 2011. Available at: https://www.nytimes.com/roomfordebate/2011/05/19/the-age-of-anthropocene-should-we-worry/neither-good-nor-bad

Faria, Catia, "Disentangling Obligations of Assistance: A Reply to Clare Palmer's 'Against the View That We Are Usually Required to Assist Wild Animals,'" *Relations: Beyond Anthropocentrism*, vol. 3, no. 2, 2015, p. 211-218.

Hettinger, Ned, "Valuing Naturalness in the 'Anthropocene': Now More than Ever," in G. Wuerthner, E. Crist and T. Butler (eds.), *Keeping the Wild: Against the Domestication of Earth*, Washington, DC, Island Press, 2014, p. 174-179.

Hettinger, Ned and William Throop, "Refocusing Ecocentrism: De-emphasizing Stability and Defending Wildness," *Environmental Ethics*, vol. 21, no. 1, 1999, p. 3-21.

Horta, Oscar, "Debunking the Idyllic View of Natural Processes: Population Dynamics and Suffering in the Wild," *Τέλος: Revista Iberoamericana de Estudios Utilitaristas*, vol. 17, no. 1, 2010, p. 73-88.

Jamieson, Dale, "Rights, Justice, and Duties to Provide Assistance: A Critique of Regan's Theory of Rights," *Ethics*, vol. 100 (January), 1990, p. 349-362.

Light, Andrew, "Ecological Restoration and the Culture of Nature," in David Schmidtz and Elizabeth Willott (eds.), *Environmental Ethics: What Really Matters, What Really Works*, New York, Oxford University Press, 2002, p. 178-187.

Lynas, Mark, *The God Species: Saving the Planet in the Age of Humans*, Washington, DC, National Geographical Society, 2011.

Marris, Emma, "Nature is Everywhere—We Just Need to Learn to See It," TED talk, 2016, available at: https://www.ted.com/talks/emma_marris_nature_is_everywhere_we_just_need_to_learn_to_see_it

———, "Humility in the Anthropocene," in Ben Minteer and Stephen Pyne (eds.), *After Preservation: Saving American Nature in the Age of Humans*, Chicago, University of Chicago Press, 2015, pp. 41-49.

McMahan, Jeff, "The Meat Eaters," *New York Times*, Sept. 19, 2010. Available at: https://opin-

CONCERN FOR WILD ANIMAL SUFFERING AND ENVIRONMENTAL ETHICS: WHAT ARE THE LIMITS OF THE DISAGREEMENT?

OSCAR HORTA
UNIVERSITY OF SANTIAGO DE COMPOSTELA

ABSTRACT:

This paper examines the extent of the opposition between environmentalists and those concerned with wild-animal suffering and considers whether there are any points they may agree on. The paper starts by presenting the reasons to conclude that suffering and premature death prevail over positive well-being in nature. It then explains several ways to intervene in order to aid animals and prevent the harms they suffer, and claims that we should support them. In particular, the paper argues in favour of carrying out more research to learn the best ways to intervene without causing more harm to other animals and to intervene first in areas significantly transformed by human action. It then examines what positions environmentalist views can have towards intervention in nature for the sake of animals. It claims that, while ecocentric and naturocentric views will strongly oppose intervention in certain circumstances, they should not do so in other cases in which the values they promote are not at stake or might be outweighed. The paper then argues that, contrary to what it might seem at first, biocentric views should strongly support intervention. It then discusses whether there may be certain practical issues about which those concerned with wild animal suffering and environmentalists may support the same approach, such as opposition to the greening of desert ecosystems. Finally, it claims that raising awareness about wild animal suffering seems to be the most urgent task now for those concerned about it.

RÉSUMÉ :

Le présent article examine l'étendue de l'opposition entre les environnementalistes et ceux qui se préoccupent de la souffrance des animaux sauvages, afin de déterminer s'il existe des points sur lesquels ils peuvent être en accord. L'article débute en présentant les raisons permettant de conclure que la souffrance et la mort prématurée l'emportent sur le bien-être positif dans la nature. Ensuite, il explique plusieurs façons d'intervenir afin d'aider les animaux et de prévenir les maux dont ils souffrent et plaide pour la mise en œuvre de celles-ci. Plus précisément, l'article préconise un plus grand nombre de recherches afin de déterminer les meilleures façons d'intervenir sans causer davantage de maux à d'autres animaux ainsi que pour prioriser des interventions en des endroits que l'action humaine a significativement transformés. L'article examine par la suite les positions que les conceptions environnementalistes peuvent adopter quant aux interventions dans la nature pour le bien des animaux. L'article propose que, bien que des visions écocentriques et naturocentriques s'opposent vivement à l'intervention dans certaines circonstances, elles ne devraient cependant pas s'y opposer dans les cas où les valeurs qu'elles promeuvent n'entrent pas en jeu ou peuvent avoir moins de poids que d'autres facteurs. L'article soutient ensuite que, contrairement à ce que l'on pourrait penser à première vue, les théories biocentristes devraient fortement appuyer l'intervention. Il pose la question à savoir si certains problèmes pratiques peuvent faire l'objet d'une approche commune parmi les environnementalistes et ceux qui se soucient de la souffrance des animaux sauvages, par exemple s'opposer à l'écologisation des déserts. Enfin, l'article propose que la tâche la plus pressante pour ceux qui se préoccupent de la souffrance des animaux sauvages consiste à accroître la sensibilisation à ce problème.

There is an optimistic view of the wild that is relatively widespread today, according to which animals in the wild lead lives that are on the overall good, as long as we do not interfere. This notion seems to be connected to environmentalist ideas of nature as an idyllic place. There are very strong reasons, however, to conclude that this view is mistaken. Animals in the wild suffer due to many nature causes. These include, among others, malnutrition, hunger and thirst (Zimmerman, 2009; McCue, 2010), diseases, accidents and injuries (Cooper, 1996; Wobeser, 2005), hostile weather conditions (White, 2008), attacks by other animals and parasites and psychological stress (McGowan, 1997; Moberg, 2013 [1985]). In fact, many animals live short lives, enduring significant pain due to these causes (Animal Ethics, 2016a). These animals would benefit greatly if we took action to help them. For this reason, a growing number of theorists have argued in favour of intervening in the wild to reduce the harms suffered by nonhuman animals, whenever that can be done without causing more harm to others (see, for instance, Ng, 1995; Nussbaum, 2006; Tomasik, 2015a [2009]; Horta, 2010; Sözmen, 2013; Faria and Paez, 2015; McMahan, 2015; Faria, 2016; Ryf, 2016; Garmendia and Woodhall, 2016; for early precursors of this idea, see also Gompertz 1997 [1824] and Sapontzis 1987; for defences of moderate forms of intervention, see Næss, 1991; Kirkwood et al., 1994; Palmer, 2010; Donaldson and Kymlicka, 2011; for a review of the literature see Dorado, 2015).

This paper will defend this view and examine the extent to which it conflicts with environmentalist positions. To do this, section 1 presents the reasons to claim that suffering and premature death prevail in nature, by explaining that most animals have painful deaths shortly after coming into existence. Section 2 presents some of the ways in which humans are currently intervening that are positive for animals in nature, as well as other more significant forms of interventions that could be carried out. Sections 3 to 5 seek to determine the cases when these intervetions would meet opposition from different views, traditionally identified as environmentalist, on what entities are morally considerable. Section 3 examines this in the case of ecocentrism, and section 4 assesses it in the case of wilderness-focused positions (which we can refer to as "naturocentric"). Section 5 argues that biocentrism must fully support intervention in nature. Then, section 6 discusses whether there may be certain practical issues on which those concerned with wild-animal suffering may have stances similar to those of environmentalists'. Section 7 concludes by pointing out some practical implications the arguments in this paper have.

1. WHY ANIMAL SUFFERING PREVAILS IN NATURE: THE ARGUMENT IN A NUTSHELL

Most adult animals living in the wild have to face some of the sources of harm mentioned at the beginning of this paper, such as hunger, diseases, weather

conditions, attacks, and distress. However, it appears that the main reason why suffering is widespread in the wild is that the majority of young animals have to endure these sources of harm without enjoying positive things enough to compensate for them. This is related to the fact that most animals have painful early deaths. To understand this, we must consider what reproductive strategies prevail in nature. Some animals have just one offspring, who is taken care of by his or her parents and has reasonable chances of surviving. But these animals are a tiny minority. Most nonhuman animals have evolved to have huge clutches or litters. In each generation, the number of offspring that come into existence can be several orders of magnitude larger than the number of adult individuals in the previous generation. For instance, animals such as frogs and many invertebrates can lay thousands of eggs, and others such as fish can lay millions of them (Sagoff, 1984; Stearns, 1992; 2000; Ng, 1995; Cappuccino and Price, 1995). Most of them, however, die shortly after coming into existence. On average, for stable populations, only one animal per parent survives.

The way these animals die is often very painful and sometimes slow. Many of them starve. Others die of cold or dehydration. Others are eaten alive (sometimes by parasites who may take a long time to do it). They thus suffer a great deal. In contrast, because the lives of all these animals are so short, they include very few opportunities for well-being. In fact, many of them experience little more than the pain of their deaths. Others can have some opportunities for enjoyment, but they are few and brief ones in comparison to the large amounts of suffering they endure while they live. This means that the proportion of positive well-being and suffering in their lives is radically asymmetric: these animals suffer a lot but experience little positive well-being. In other words, their lives include much more suffering than happiness (Ng, 1995; Tomasik, 2015 [2009]; Faria and Paez, 2015).

To be sure, some eggs are destroyed before a sentient animal gets out of them. Moreover, some of the animals that come into existence never develop into sentient beings, and some may be only barely sentient when they die. Nevertheless, in many cases, they are certainly sentient and suffer a lot. There are also cases in which animals may survive for some time even if they fail to reproduce. A juvenile fish can live for some weeks or even months before dying before reaching adulthood. Therefore, those animals may well live enough for their lives to include some happiness that can compensate for their suffering. But, in many cases, this does not happen, as they die when they are younger than that. We have reasons, therefore, to conclude that suffering prevails in nature over positive well-being. If, in addition, we consider that premature death is also a disvalue (see, for instance, Nagel, 1970; Bradley, 2009), we will have further reason to think that disvalue prevails over positive value in nature.

2. INTERVENTIONS THAT CAN HAVE A POSITIVE IMPACT FOR ANIMALS IN NATURE

There are different ways in which we can intervene to have a positive impact for animals in the wild. In fact, many of these interventions are being currently carried out in different places and circumstances. For example, the rescue of wild animals from ponds or frozen lakes is one such intervention that appears in the media every now and then. Cases of stranded marine animals or animals victim of natural disasters being helped are common, too. In many different places, there are also rescue centres for orphaned, sick, or injured wild animals (for detailed reports of this, see Animal Ethics, 2016b).

On a wider scale, wild-animal vaccination and feeding programmes are currently carried out in different countries (see, for instance, Rupprecht et al., 2003; Buddle et al., 2011; Reuters, 2002; Nepal Mountain News, 2011). These programmes have been implemented mainly to benefit humans (for instance, to prevent wild animals from passing certain diseases onto humans or from dying off in certain areas where they are a tourist attraction, such as some national parks). Still, the fact that they have been carried out successfully shows that it is perfectly feasible to implement them for the sake of nonhuman animals themselves.

Other forms of intervention that would have a much more significant impact on reducing the harms suffered by animals in the wild could be also implemented. In particular, environmental management and engineering programmes could be carried out not with the aim of furthering human interests or environmentalist aims, but of improving the situation of animals. To do this successfully, we would need more research, in order to apply the knowledge that we already have about how ecosystems work to achieve this new aim. A whole new field of study has been proposed for this. It has been named "(animal) welfare biology," described as the study of the positive and negative well-being of living sentient beings in consideration of their interactions with each other and their environment (Ng, 1995). There is, however, a major obstacle to this field's development and to the carrying out of interventions to aid nonhuman animals. It has to do not with epistemological or technical difficulties, but with the possibility that our moral views might conflict with the idea of aiding animals in nature. We will see this problem next.

3. ECOCENTRISM AND INTERVENTION TO AID ANIMALS

While there are sound arguments in favour of the conclusions reached above, these conclusions will be quite counterintuitive to many people. This will be so in the case of those holding blatant anthropocentric[1] speciesist views, according to which we have no reason to be concerned with what happens to nonhuman animals. But this paper is going to focus in particular in what environmentalist

views have to say on this matter. It seems at first sight that intervention to aid animals in nature is at odds with what these views prescribe. Nevertheless, while this is so to some extent, it is less so than it might seem. We will see this in the case of some of the most representative positions traditionally identified as environmentalist.

Let us consider first what holistic views maintain (Leopold, 1949; Callicott, 1989). They may oppose intervention for the sake of nonhuman animals by arguing that wholes such as ecosystems or species, rather that individuals, are the locations of value we should care about.[2] In particular, ecocentric holists would claim that animal suffering and premature death are just consequences of many ecological interactions, which are what actually matters. This is because, according to ecocentrism, the entities that are morally considerable are entities such as ecosystems, biocenoses, or ecosystemic relations, not individual entities. Accepting this view would lead us to conclude that the harms suffered by nonhuman animals are either not disvalues at all or disvalues that are to be considered necessary results of more important processes. Therefore, we should not be concerned with them.

This view can be opposed by challenging the conception of value on which it is based. But there are also several reasons why, even if we accepted an ecocentric view, we may be less reluctant to accept intervention for the sake of animals than we may initially think. To start with, it is worth pointing out that ecocentrists see nothing wrong with intervention in nature as such. In fact, they often support it, though not to aid animals, but in order to conserve, restore, or recreate a certain ecosystem. So, it is not that those defending this view think that nature is sacrosanct and that we cannot interfere with it. It is just that they want nature to be in certain ways, rather than in others. However, even if we accept that ecosystems are valuable, if the harms suffered by nonhuman animals matter too, then that should give us at least pro tanto reasons to intervene (Cunha, 2015). Intervention would be problematic only when it transformed significantly the ecosystems where it took place. In addition, it can also be argued that, if what matters is the existence of ecosystems as such, then transforming a previously existing ecosystem into a new one with less animal suffering should not be really problematic. After all, a new ecosystem would be present afterwards (Johnson, 1981, p. 271).

This is a characterization of the implications that ecocentrism (as defined above) has. However, it is not the way in which those who typically claim to be ecocentrists think. Rather, those who identify with this view usually value *present* ecosystems, rather than future or past ones. They do not usually regret that old ecosystems previously existing on Earth were eventually substituted by current ones, and are not thrilled by the prospect of present ecosystems being substituted by new ones. Still, it is also the case that most of those holding this view

also reject the claim that only ecosystems are valuable. They typically accept that the positive well-being and negative well-being of humans are also valuable and disvaluable (see Callicott, 1990, p. 103; 2000, p. 211; Varner, 1991). If this is so, then, lest they hold a speciesist position, they would have to accept a similar stance in the case of nonhuman animals.

To be sure, supporters of ecocentrism can acknowledge this and yet claim that ecosystems have a special value that outweighs the importance of the interests of animals. But note that this view would be contingent on the weight those interests have. If, aggregated together, those interests were significant enough, they could outweigh the holistic value of the ecosystems they live in. Given the extent of the disvalue suffered by nonhuman animals in the wild, we may have reasons to conclude that this is actually so in the wild. If this is correct, then even defenders of this ecocentric view would be forced to accept intervention, too. The only way to avoid this would be to claim that ecosystemic relations possess a value that trumps any disvalue. This position, however, seems quite hard to accept. It is certainly not the one held by defenders of this view when significant human interests are at stake, and very few other people will accept it in that case, either (on this, see again Varner, 1991; for an exception, see Linkola, 2009). Again, if this is so, it seems speciesist to hold a different view when equally strong or actually stronger interests of other animals are at stake.

Finally, it is important to note that supporters of ecocentrism are typically concerned not with all ecosystems, but only with those that exist in areas where human presence is not too significant, and that have not been too radically transformed in ways that bear little resemblance to other naturally existing ecosystems. This excludes at least urban, industrial, suburban, and intense-agriculture areas, and maybe also those used for extensive agriculture, as well as those radically transformed for recreation or other purposes. All versions of ecocentrism may accept intervention in these places. This leaves significant room for intervention, as together these places cover a very significant area, where an immense number of animals live.

Given all this, it seems that the environmentalist case against intervention in nature is not as strong as many people think, at least not when we consider ecocentric views. Let us examine now what wilderness-focused positions imply.

4. NATUROCENTRISM AND INTERVENTION TO AID ANIMALS

According to the views focused on the idea of wilderness, the value different entities have depends not (or not only) on the features they possess but also on how these entities got to exist and to be the way they are. In line with this, those who have defended this position hold that natural entities have value either just by virtue of being the result of natural processes not caused by human beings or

else by having certain features *and* by having them as a result of a natural process (Katz, 1992; Elliot, 1997).[3] We can thus refer to these views as "naturocentric" ones (even if this term has not been widely used in the environmentalist literature). Supporters of this view can argue that, while suffering and premature death are often bad, they are not so when they occur for natural reasons, as it happens in the case of nonhuman animals in nature.

The ways to oppose this argument are similar to the ones we have seen in the case of ecocentric views. We may object to the naturocentric view of what is valuable and argue that how some entity has become what it is, is not what makes it valuable. Or we may accept that being natural is a valuable feature, but deny that there can be no disvalue in something that is natural. According to this view, one thing can have value by virtue of its being natural (or both by having certain remarkable features and by these features being the result of natural processes), and yet be disvaluable in another respect. This may happen, for instance, if it causes suffering and premature death to animals. Again, this means that, if this disvalue becomes significant enough, it will eventually outweigh the value it possesses by being natural. As in the case of ecocentrism, we might think that the value that a certain ecosystem has by virtue of its being the result of natural history outweighs the disvalue of the harms animals suffer in it (this is a view similar to the one held in Rolston, 1992; see also Hettinger, 1994). But, once again, if this were so, then there might be a point at which, if those harms become too significant, then they may no longer be outweighed.

Finally, we must note also that, rigorously speaking, naturocentric views will in any case oppose intervention for the sake of animals only when it is carried out in those areas untouched (or at least only slightly affected) by humans. Naturocentrism as such gives us no reason to oppose intervention in ecosystems created or restored by humans. In this way, this position would allow helping animals in even wider areas than ecocentric views would. This would leave huge wild areas open to intervention, as many of the ecosystems currently existing are not the mere result of natural processes, but also the product of human action.

This is interesting in one respect. As naturocentric positions are defined by their opposition to human intervention in the wild, we might expect them to be even more reluctant than ecocentric ones to accept intervention to aid animals in nature. But the fact that many ecosystems are no longer natural implies that at the end of the day naturocentrists' opposition will be less important. This is because such opposition, while stronger in untouched areas, will be restricted to those untouched areas and will not apply in other places (such as forests created by humans). There may be supporters of this view who disagree with this, but then it has to be for reasons different from that of the respect for untouched nature.

5. WHY BIOCENTRISM SHOULD STRONGLY SUPPORT INTERVENTION

Finally, we can consider what biocentrism has to say about this. Claiming that the entities that are morally considerable are living organisms, biocentrism is, unlike the two positions presented above, an individual-focused view (Goodpaster, 1978; Taylor, 1986; Agar, 2001). The differences between biocentric views and those positions focused on the interests of sentient animals often rest on the views they have about what is valuable for individuals (Varner, 2002). That is, the differences often rest on the conceptions of what sort of things can be positive or negative for a being (as this is what determines which kinds of beings can be recipients or locations of that which is positive or negative).

Some biocentric positions may accept that suffering and happiness are negative and positive, while others may reject it. Consider first those that accept that merely being alive is good and dying is bad, but that having positive and negative experiences can also be good and bad. These views will support intervention out of a concern for the harms suffered by animals. But consider now those biocentric views that reject that anything else in addition to being alive and dying can be positive or negative. These views should also support intervention. The reason is that the same argument from population dynamics presented above applies when we consider not just sentient animals, but all living beings. The overwhelming majority of living beings have premature deaths, too. Consequently, it turns out that biocentrists also have strong reasons to support significant intervention in nature. The only difference would be that they would not (or not only) do it to reduce suffering, but (also) to prevent the huge amount of premature death that there is in the wild.

We might think that intervention would be problematic for biocentrism, since, if successful, it would result in less living entities existing. But this claim fails to understand properly what biocentric positions defend. Biocentrism is the view that morally considerable entities are living beings. This means it is concerned with what is good for living beings, not with how many living beings there are. Note that an anthropocentric view focused on achieving what is best for human beings need not resolve whether it is better if more, rather than less, human beings exist. It would conclude this if the level of well-being of any human who came into existence were above the zero level at which the value that is present in one's life exceeds the disvalue that there is in it. But it would reject bringing into existence human beings whose level of well-being fell below zero, as that would be bad for humans. Similarly, a view concerned with sentient beings would also oppose raising the population of animals if (in line with what this paper is claiming) their lives were net negative. Biocentrism would hold the same view in the case of living entities in general. As a result, we can conclude that in the discussion concerning intervention in nature biocentrism must side

together with animal defenders. This may be a conclusion that some (or maybe many) of those who see themselves as supporters of biocentrism may not want to accept. But, again, if they reject this view, it needs to be for reasons other than the moral consideration of living entities. As such, biocentrism does not oppose intervening to reduce the disvalues those entities may suffer, but actually supports such intervention.[4]

6. CAN THERE BE PRACTICAL CASES OF CONVERGENCE BETWEEN ENVIRONMENTALIST AND SENTIENCE-FOCUSED APPROACHES?

Once we have seen what kinds of environmentalist positions may accept or reject intervention for the sake of animals in the wild, we can consider the question of whether there can be further examples of divergence and convergence between supporters of helping animals in nature and environmentalists. Cases of divergence are not difficult to find. There are different circumstances in which environmentalist views typically support measures that are harmful to animals. The most visible of them is possibly the killing of animals of certain populations for the sake of ecosystem conservation or restoration, or other measures that harm animals in other ways for this purpose (Shelton, 2004; Horta, 2010). Another example of this is the promotion of animal experimentation to test the impact of chemicals on the environment, which has been lobbied for by big environmentalist organizations such as the WWF, the Sierra Club, and Friends of Earth (Environmental Protection Agency, 2004; Warhurst, 2004). Clear cases of convergence are less easy to find. Still, one where both approaches may agree is the following one.

> *Opposition to the greening of desert ecosystems*. Certain interventions have been carried out to increase the productivity of certain areas where primary production used to be quite low, such as desert or semidesert areas (see, for instance, Richmond, 1987; Issar, 2010). These interventions include planting certain types of vegetation and installing irrigation, among other measures. They are often referred to as "regreening" efforts, partly because similar efforts have been carried out in areas where desertification has taken place recently due to human action. However, there are cases in which they aim at greening areas that have been arid or semiarid for natural reasons and for significantly long periods of time.
>
> These measures can be very useful to human beings. But let us consider what should be said of them from a non-anthropocentric viewpoint. It seems that, while some environmentalist views will support these efforts, both ecocentric and naturocentric ones should reject them, as they entail the radical transformation of natural ecosystems. But those concerned with the well-being of animals should also oppose them, as these interventions result in ecosystems with much higher primary production. This creates the possibility that more animals will come into existence to suffer and die shortly after. So, this is indeed a case of clear convergence between these different approaches.

Other cases, however, are more problematic. In them, convergence between animal and environmental ethicists may depend on contingent circumstances, and our current limited knowledge may not allow us to reach a clear conclusion. One example of this is the following one.

> *Protecting large herbivores*. Large-sized primary consumers can reduce significantly the amount of biomass available to other consumers in the areas where they are. Even if not all the biomass they eat would be otherwise eaten by other animals, a nonnegligible amount of it could be eaten by smaller animals who would have large numbers of offspring and who would be eaten by larger animals (who then, in turn, might also have large numbers of offspring and be eaten by larger animals as well). The presence of these large animals thus prevents a significant amount of suffering and premature death from taking place. This seems to happen, for instance, in the case of elephants (Cumming et al., 1997; Guldemond and Van Aarde, 2008; Guldemond et al., 2017). Protecting elephants thus appears to be a good way not only to aid them (Pearce, 2015), but also to prevent other animals who would otherwise come into existence from having terrible lives. If this is so, then conservationist efforts to prevent these animals from disappearing can also be supported by those concerned with wild animal suffering.

Still, this needs to be examined in detail case by case, as there can be other factors that explain why the presence of some big consumers may end up causing more suffering and premature death. To see this, consider the case of whales. Even if they are secondary instead of primary consumers, their case seems at first sight similar to that of elephants. They too eat significant amounts of biomass that might otherwise be eaten by other, much smaller animals. However, there are other reasons why their presence may not reduce, but actually increase the number of other sentient beings who may come into existence. This is because whales' feces allow the circulation of nutrients (such as iron, which is a limiting factor for phytoplankton growth) in areas where otherwise significantly fewer primary and secondary consumers would have existed (Lavery, 2010; Nicol, 2010; Roman, 2010). It is possible that also in the case of big herbivores such as elephants (and others such as rhinos or hippos) other relevant considerations could modify our initially optimistic assessment of their impact on other animals' well-being.

There are other cases where convergence may be uncertain, too. An example of this is opposition to global warming. Of course, climate change can directly affect a significant number of animals (particularly specialists), who may suffer for some time and be substituted by generalists. However, the indirect impact of global warming on the net aggregate well-being of animals will be determined by something else: by whether it will eventually increase or decrease the number of animals coming into existence to suffer and die shortly after. The crucial factor

for this is likely to be whether global warming will trigger an increment or a reduction of global net primary production. Unfortunately, it is still very hard to appraise which of these two outcomes will obtain (Finkel, 2014; Li et al., 2017; see also Tomasik, 2017 [2008]). There are many different factors to take into account here (including not only the relation between temperature and terrestrial productivity, but also, for instance, the distribution of land masses on Earth and the location of the different biomes, the variation of oxygen solubility at different temperatures, the relation between nutrient availability and water cycles, and the impact on productivity of having thicker or thinner ice layers and sea levels). For this reason, it is yet an open question whether this can be a case of convergence or divergence between environmentalism and the defence of animals in the wild. Similar assessments may be made in the case of other ecosystem disruptions on a smaller scale.

7. CONCLUSION

This paper has argued in favour of intervention in nature for the sake of sentient animals and examined to what extent this measure should be opposed or accepted by environmentalists of different sorts. As we have seen, this opposition should be less significant than it might appear at first sight. This is so, in particular, when intervention is carried out in areas that humans have already transformed significantly. Consequently, a promising course of action may be to promote research aimed at learning how to best intervene in those areas.

This paper has also examined whether there might be cases of convergence between environmentalists and those concerned with the harms suffered by animals in nature. Such cases appear to be quite few and uncertain, although future research might shed more light on this.

In any case, it seems that gaining more knowledge is insufficient to promote measures making a difference for animals in the wild. Spreading concern about the importance of wild animal suffering is even more necessary. Accordingly, to increase awareness about this should be a crucial task for animal defenders. While their efforts may be met at first with opposition by some people, including environmentalists, what we have seen here suggests that this resistance may decrease as their case is better known.

NOTES

[1] In this paper, I will be using the term "anthropocentrism" with the meaning it typically has in the animal ethics literature—that is, that the interests of human beings are more important than similar interests of other beings. This meaning is different from the different ones it has had in the environmental ethics literature (where the term may name, among other things, the view that only human beings have value, or the idea that the value of natural entities depends on human valuation of them, or the view that our reasons to be concerned by the environment rest on human interests).

[2] Ecocentrism, like other positions assessed in this paper, is a normative view about what entities deserve moral consideration. These views need not be based on a conception of what is valuable. An ecocentric view may accept normative reasons to claim that we should respect ecosystems not derived from any consideration about what has value to claim (they may consist, for instance, in some deontological norm just prescribing to do so). For the sake of simplicity, this paper focuses on arguments that appeal to what is valuable or disvaluable. But similar arguments could be built considering other kind of reasons.

[3] To be sure, there are positions that would not fit comfortably into the distinction made here between those views that focus on the conservation of ecosystems and those that focus on the conservation of what is natural (see, for instance, Rolston, 1994; Hettinger and Throop, 1999). But this still seems to be a cogent distinction (this is shown, for instance, by the contrasting views that ecocentric and naturocentric positions have towards restoration).

[4] This contrast between biocentrism and the two environmentalist views we have seen above should not be surprising. In fact, it is not clear whether biocentrism really is an environmental ethic, even if this has been commonly accepted in the literature. After all, we can define environmentalism as the view that we should be concerned about how we behave towards our environment. But biocentrism is not about that, but about the way we should consider and behave towards other individuals. Its approach is therefore just like that of anthropocentrism or sentience-focused views. As we have seen, the only difference between these positions rests on their account of what entities are the individuals that we need to take into account (that is, on whether they are human beings, sentient beings, or living beings). These three views do not treat individuals as a part of our environment, but as beings who, like ourselves, belong to the realm of those who should be respected. There is no difference in this respect between anthropocentrism and the other two views. The only difference between them rests on the view of who the morally considerable individuals are.

REFERENCES

Agar, Nicholas, *Life's Intrinsic Value: Science, Ethics and Nature*, New York, Columbia University Press, 2001.

Animal Ethics, "The Situation of Animals in the Wild," *Animal Ethics,* 2016a: http://animal-ethics.org/wild-animals.

———, "Helping Animals in the Wild," *Animal Ethics*, 2016b: http://animal-ethics.org/helping-animals-in-the-wild.

Bradley, Ben, *Well-Being and Death*, New York, Oxford University Press, 2009.

Buddle, Bryce M., D. Neil Wedlock, Michel Denis, H. Martin Vordermeier, and R. Glyn Hewinson, "Update on Vaccination of Cattle and Wildlife Populations against Tuberculosis," *Veterinary Microbiology*, vol. 151, no. 1-2, 2011, p. 14-22.

Callicott, J. Baird, *In Defense of the Land Ethic: Essays in Environmental Philosophy*, Albany, State University of New York, 1989.

———, "The Case against Moral Pluralism," *Environmental Ethics*, vol. 12, no. 2, 1990, p. 99-124.

Cappuccino, Naomi, and Peter W. Price (eds.), *Population Dynamics: New Approaches and Synthesis*, San Diego, Academic Press, 1995.

Cooper, Jonathan, Physical Injury, in A. Fairbrother, Jr. N. Locke, and G. L. Hoff (eds.), Noninfectious Disease of Wildlife, Iowa State University Press, 1999 [1982], p. 157-172.

Cumming, David H. M., M. Brock Fenton, Ignatius L. Rautenbach, Russell D. Taylor, Graeme S. Cumming, Meg S. Cumming, Jennifer M. Dunlop, A. Gavin Ford, Mark D. Hovorka, David S. Johnston, Matina C. Kalcounis, Zaccheus Mahlanga, and Christine V.R. Portfors,"Elephants, Woodlands and Biodiversity in Miombo Woodland in Southern Africa," *South African Journal of Science*, vol. 93, 1997, p. 231-236.

Cunha, Luciano Carlos, "If Natural Entities Have Intrinsic Value, Should We Then Abstain from Helping Animals who Are Victims of Natural Processes?" *Relations: Beyond Anthropocentrism*, vol. 3, no. 1, 2015, p. 51-63.

Donaldson, Sue, and Will Kymlicka, *Zoopolis: A Political Theory of Animal Rights*, New York, Oxford University Press, 2011.

Elliot, Robert, *Faking Nature: The Ethics of Environmental Restoration*, New York, Routledge, 1997.

Environmental Protection Agency, United States, (EPA) *Status and Future Directions of the High Production Volume Challenge Program*, Washington, D. C., Office of Pollution Prevention and Toxics, 2004.

Faria, Catia, and Eze Paez, "Animals in Need: The Problem of Wild animal Suffering and Intervention in Nature," *Relations: Beyond Anthropocentrism*, vol. 3, no. 1, 2015, p. 7-13.

Faria, Catia, "Animal Ethics Goes Wild: The Problem of Wild Animal Suffering and Intervention in Nature," PhD thesis, Barcelona, Pompeu Fabra University, 2016.

Finkel, Zoe V, "Marine Net Primary Production," in Freedman, B. (ed.), *Global Environmental Change*, Dordrecht, Springer, 2014, p. 117-124.

Garmendia, Gabriel, and Andrew Woodhall (eds.), *Intervention or Protest: Acting for Nonhuman Animals*, Wilmington, Vernon Press, 2016.

Gompertz, Lewis, *Moral Inquiries on the Situation of Man and of Brutes*, Lewiston, Edwin Mellen, 1997 [1824].

Goodpaster, Kenneth E., "On Being Morally Considerable," *Journal of Philosophy*, vol. 75, no. 6, 1978, p. 308-325.

Guldemond, Robert A. R., Andrew Purdon, and Rudi J. van Aarde, "A Systematic Review of Elephant Impact across Africa," *PloS ONE*, vol. 12, no. 6, 2017.

Guldemond, Robert A. R., and Rudi J. Van Aarde, "A Meta-analysis of the Impact of African Elephants on Savanna Vegetation," *Journal of Wildlife Management*, vol. 72, no. 4, 2008, p. 892-899.

Hettinger, Ned, and Bill Throop, "Refocusing Ecocentrism," *Environmental Ethics*, vol. 21, no. 1, 1999, p. 3-21.

Hettinger, Ned, "Valuing Predation in Rolston's Environmental Ethics: Bambi Lovers versus Tree Huggers," *Environmental Ethics*, vol. 16, no. 1, 1994, p. 3-20.

Horta, Oscar, "The Ethics of the Ecology of Fear against the Nonspeciesist Paradigm: A Shift in the Aims of Intervention in Nature," *Between the Species*, vol. 13, no. 10, 2010, p. 163-187: http://digitalcommons.calpoly.edu/bts/vol13/iss10/10/.

Huston, Michael A., and Steve Wolverton, "The Global Distribution of Net Primary Production: Resolving the Paradox," *Ecological Monographs,* vol. 79, no. 1, 2009, p. 343-377.

Issar, Arie S., "Progressive Development by Greening the Deserts, To Mitigate Global Warming and Provide New Land and Income Resources," in Issar, Arie S. (ed.), *Progressive Development To Mitigate the Negative Impact of Global Warming on the Semi-arid Regions*, Dordrecht, Springer, 2010, pp. 37-42.

Johnson, Edward, "Animal Liberation against the Land Ethic," *Environmental Ethics*, vol. 3, no. 3, 1981, p. 265-273.

Katz, Eric, "The Big Lie: Human Restoration of Nature," *Research in Philosophy and Technology*, vol. 12, no. 1, 1992, p. 231-241.

Kirkwood, James K., Anthony W. Sainsbury, and Peter M. Bennett, "The Welfare of Free-Living Wild Animals: Methods of Assessment," *Animal Welfare*, vol. 3, no. 4, 1994, p. 257-273.

Lavery, Trish J., Ben Roudnew, Peter Gill, Justin Seymour, Laurent Seuront, Genevieve Johnson, James G. Mitchell, and Victor Smetacek, (2010) "Iron Defecation by Sperm Whales Stimulates Carbon Export in the Southern Ocean," *Proceedings of the Royal Society of London B: Biological Sciences*, 2010, rspb20100863.

Leopold, Aldo, *Sand County Almanac, with Essays on Conservation from Round River*, New York, Ballantine Books, 1966 [1949].

Li, Peng, Changhui Peng, Meng Wang, Weizhong Li, Pengxiang Zhao, Kefeng Wang, Yanzheng Yang, and Qiuan Zhu, "Quantification of the Response of Global Terrestrial Net Primary Production to Multifactor Global Change," *Ecological Indicators*, vol. 76, 2017, p. 245-255.

Linkola, Pentti, *Can Life Prevail? A Radical Approach to the Environmental Crisis*, London, Integral Tradition Publishing, 2009.

McCue, Marshall D., "Starvation Physiology: Reviewing the Different Strategies Animals Use To Survive a Common Challenge," *Comparative Biochemistry and Physiology A: Molecular and Integrative Physiology*, vol. 156, no. 1, 2010, p. 1-18.

McGowan, Christopher, *The Raptor and the Lamb: Predators and Prey in the Living World*, New York, Henry Holt and Company, 1997.

McMahan, Jeff, "The Moral Problem of Predation," in Chignell, Andrew, Terence Cuneo, and Matthew C. Halteman (eds.), *Philosophy Comes to Dinner: Arguments on the Ethics of Eating*, London, Routledge, 2015, p. 268-294.

Moberg, Gary P. (ed.), *Animal stress*, New York, Springer, 2013 [1985].

Næss, Arne, "Should We Try To Relieve Clear Cases of Suffering in Nature?" *Pan Ecology*, vol. 6, no. 1, 1991, p. 1-5.

Nagel, Thomas, "Death," *Noûs*, vol. 4, no. 1, 1970, p. 73-80.

Nepal Mountain News, "Quenching Wildlife Thirst by Pumping Ground Water," *Nepal Mountain News*, 9 December 2011: http://www.nepalmountainnews.com/cms/2011/12/09/quenching-wildlife-thirst-pumping-ground-water.

Ng, Yew-Kwang, "Towards Welfare Biology: Evolutionary Economics of Animal Consciousness and Suffering," *Biology and Philosophy*, vol. 10, no. 1, 1995, p. 255-285.

Nicol, Stephen, Andrew Bowie Simon Jarman, Delphine Lannuzel, Klaus M. Meiners, and Pier Van Der Merwe, "Southern Ocean Iron Fertilization by Baleen Whales and Antarctic Krill," *Fish and Fisheries*, vol. 11, no. 2, 2010, p. 203-209.

Nussbaum, Martha C., *Frontiers of Justice: Disability, Nationality, Species Membership*, Cambridge, Harvard University Press, 2006.

Palmer, Clare A., *Animal Ethics in Context*, New York, Columbia University Press, 2010.

Pearce, David, "A Welfare State for Elephants? A Case Study of Compassionate Stewardship," *Relations: Beyond Anthropocentrism*, vol. 3, no. 2, 2015, p. 133-152.

Reuters, "Zambia Distributes Food to Starving Wildlife," *SOS Rhino*, October 18, 2002: http://www.sosrhino.com/news/rhinonews101802.php.

Richmond, Amos, "The Greening of the Desert: A Case for the Development of the Arid Lands,"

Technology in Society, vol. 9, no. 1, 1987, p. 113-121.
Rolston III, Holmes, "Disvalues in Nature," *The Monist*, vol. 75, no. 2, 1992, p. 250-278.

———, *Conserving Natural Value*, Columbia University Press, 1994.

Roman Joe, and James J. McCarthy, "The Whale Pump: Marine Mammals Enhance Primary Productivity in a Coastal Basin," *PLoS ONE*, vol. 5, no. 10, e13255, 2010.

Rupprecht, Charles E., Colleen A. Hanlon, and D. Slate, "Oral Vaccination of Wildlife against Rabies: Opportunities and Challenges in Prevention and Control," *Developments in Biologicals*, vol. 119, no. 1, 2003, p. 173-184.

Ryf, Patrick, "The Case of Wild Animals," master's thesis, Basel, University of Basel, 2016.

Sagoff, Mark, "Animal Liberation and Environmental Ethics: Bad Marriage, Quick Divorce," *Osgoode Hall Law Journal*, vol. 22, no. 1, 1984, p. 297-307.

Sapontzis, Steve F., *Morals, Reason, and Animals*, Philadelphia, Temple University Press, 1987.

Shelton, Jo-Anne, "Killing Animals that Don't Fit In: Moral Dimensions of Habitat Restoration," *Between the Species*, vol. 13, no. 4, 2004, p. 1-21: `http://digitalcommons.calpoly.edu/bts/vol13/iss4/3.`

Sözmen, Beril İdemen, "Harm in the Wild: Facing Non-human Suffering in Nature," *Ethical Theory and Moral Practice*, vol. 16, no. 5, 2013, p. 1075-1088.

Stearns, Stephen C., *The Evolution of Life Histories*, Oxford, Oxford University Press, 1992.

Taylor, Paul, *Respect for Nature*, Princeton, Princeton University Press, 1986.

Tomasik, Brian, "The Importance of Wild-Animal Suffering," *Relations: Beyond Anthropocentrism*, vol. 3, no. 2, 2015a [2009], p. 133-152.

———, "Climate Change and Wild Animals," *Essays on Reducing Suffering*, 2017 [2008]: http://reducing-suffering.org/climate-change-and-wild-animals.

Varner, Gary, "Biocentric Individualism," in Schmidtz, David, and Elizabeth Willott, (eds.), *Environmental Ethics: What Really Matters, What Really Works*, Oxford, Oxford University Press, 2002, p. 108-120.

Warhurst, A. Michael, *The REACH Files: A Policy Guide*, Brussels, World Wildlife Fund (WWF), 2004.

White, T. C. R., "The Role of Food, Weather and Climate in Limiting the Abundance of Animals," *Biological Reviews*, vol. 83, no. 3, 2008, p. 227-248.

Wobeser, Gary A., *Essentials of Disease in Wild Animals*, New York, John Wiley and Sons, 2005.

CONVERGENCE AND DIVERGENCE BETWEEN ECOCENTRISM AND SENTIENTISM CONCERNING NET VALUE

GREGORY M. MIKKELSON
MCGILL UNIVERSITY

ABSTRACT:

Animal and environmental ethics should converge on the following three value judgments: natural ecosystems generally involve more good than harm; predation in nature tends to yield positive net benefits; and, at least on a global scale, livestock farming is destroying more value than it is creating. But the ecocentric criteria of environmental ethics and the sentientist criteria of animal ethics may have divergent implications for capitalism's main effect on the world: the collapse of wild nature due to explosive growth in the human economy. Sentientism risks counting this effect as a net gain, whereas ecocentrism surely rates it a massive net loss. While supporting the above claims, I show how they fit into a larger argument in favour of the broader, ecocentric value theory of environmental ethics and against the narrower, sentientist axiology of animal ethics.

RÉSUMÉ :

Les éthiques animale et environnementale devraient converger vers les trois jugements de valeur suivants: les écosystèmes naturels impliquent généralement plus de bien que de mal, la prédation dans la nature a tendance à produire des avantages nets positifs et, au moins à l'échelle mondiale, l'élevage animal détruit plus de valeur qu'il n'en crée. Mais les critères écocentriques de l'éthique environnementale et les critères de l'éthique animale fondés sur la sentience pourraient avoir des implications divergentes sur l'effet principal du capitalisme sur le monde: l'effondrement de la nature sauvage dû à la croissance explosive de l'économie humaine. Le sentientisme risque de considérer cet effet comme un gain net, alors que l'écocentrisme le considère sûrement comme une perte nette massive. Tout en soutenant les affirmations ci-dessus, je montre comment elles s'intègrent dans un argument plus large en faveur d'une théorie de la valeur écocentrique plus englobante propre à l'éthique environnementale et contre l'axiologie sentientiste plus étroite de l'éthique animale.

INTRODUCTION

"Two streams of thought meet and are woven together… [in]to the beginnings of what, I believe, will be a lasting marriage. (Though I have no illusions about the tranquility of that particular relationship.)" (Singer, 1992)

Environmental ethics and animal ethics have much in common. For one thing, each field has firmly established itself over just the past few decades. On the theoretical side, this has meant the founding of journals like *The Journal of Animal Ethics* and *Environmental Ethics*; on the practical side, this has meant the organization of activist groups running the gamut from polite to militant. For the most part, both fields have also shared a commitment to non-anthropocentrism. As the editor of a recent anthology put it, "Environmental ethics [which for him includes animal ethics] begins the moment we reject the view that only humans can be moral patients," (Williston, 2016). In other words, humans are not the only entities in the universe worthy of direct moral concern.

Animal and environmental ethics have tended to differ, however, on the question of just which other entities do count for their own sakes (rather than merely for the sake of humans). Environmental ethicists have often included all individual animals, plants, and other organisms, along with "soils, waters" and the ecosystemic "community as such" (Leopold, 1949). In contrast, animal ethicists have tended to limit their direct moral concern to beings able to experience joy and suffering (Singer, 1973). Animal and environmental ethicists have also largely applied their respective theories to different domains—i.e., domesticated animals including livestock, laboratory subjects, and pets versus wild organisms, species, and ecosystems.

However, again, humans are causing increasingly strong interactions between the wild and domestic realms. For example, the overfishing of wild populations has induced a massive rise in fish farms. Conversely, scientists now identify animal agriculture in general as the world's leading cause of biodiversity loss (Machovina et al., 2015). Furthermore, it has been more than twenty-five years since two important book-length anthologies focused on the relationships between environmental and animal ethics (Hargrove, 1992; Ryder, 1992). This paper and the others in this special issue therefore address these relationships anew.

In this paper, I argue that a shared commitment to non-anthropocentrism should lead animal and environmental ethics to agree on the following more specific points: that natural ecosystems involve more good than ill and that, while predation in nature yields positive net benefits, livestock farming is a huge net negative. I also show, however, that ecocentric environmental ethics may diverge from sentientist animal ethics in evaluating capitalism's main effect on the

planet: the relentless supplanting of wild nature by domesticated artifice. Ecocentrists should condemn this trend along with its root cause and seek to restore a state of balance—and cultivate harmony—between humanity and nature. Sentientists, on the other hand, may be stuck with the conclusion that ongoing humanization of the planet is doing more good than harm, even if it is decimating the world population of sentient beings. Below, I relate arguments for the above points to other crucial respects in which ecocentrism gets closer to the truth than does sentientism.

CONCEPTUAL PRELIMINARIES

Before proceeding, I wish to clarify two things. The first is that the basic concerns of ecocentrism include, rather than substitute for, those of sentientism. Much mischief has resulted from the tendency of both animal and environmental ethicists to speak as if ecocentrism concerns itself with ecological collectives *instead of* with individual animals. A leading ecocentrist recently put it this way:

> Ethical concern for endangered species populations… whole endangered species… biotic communities and their associated ecosystems… landscapes… and biomes… greatly exceeds the ethical concern that many environmentalists and environmental professionals feel for individual living/conative/teleological centers of life… if for such beings they feel any ethical concern at all. (Callicott, 2017, p. 116-117)

While ecocentrism should indeed ascribe intrinsic value to endangered species that exceeds the sum of their members' well-being (for example), this in no way implies or excuses lack of ethical concern for individuals. Any defensible ecocentric ethic must do justice to both individual well-being and higher-level properties like the rarity or commonness of different species.

The two best-known exponents of ecocentrism to date—Aldo Leopold and Arne Naess—confirm this construal of ecocentrism as encompassing, rather than replacing, concern for animals. As Leopold put it, "A land ethic changes the role of *Homo sapiens* from conqueror of the land-community to plain member and citizen of it. It implies respect for his fellow-members, and also respect for the community as such" (1949, p. 240). As noted above in the introduction, for Leopold these fellow members include animals (along with plants, etc.). Naess made concern for the "the well-being and flourishing of human and nonhuman life on Earth"—which of course includes animal life—the very first plank in his eight-point platform for deep ecology (Naess and Sessions, 1984). Only in the second plank did he widen the focus to also bring the more holistic "richness and diversity of life forms" into view.

The second clarification involves a related confusion between the good of "the whole" conceived individualistically versus holistically. Many sentientists and ecocentrists write as if they disagreed with each other about *whether* species and ecosystems have intrinsic value. But their actual disagreement concerns *how to compute* that value. For example, a utilitarian (the best-known type of sentientist) would compute the total intrinsic value of an ecosystem as the sum of the well-beings of all sentient animals within it. This is an individualistic approach, because it defines the good of the whole as a strict function of the goods of the individual parts. In contrast, a deep ecologist would directly factor in the biodiversity of the ecosystem, along with the well-beings of its component individuals. Because species diversity is not a strict function of organismal well-being, this is a holistic approach.

CONVERGENCE

In the first two subsections below, I argue that sentientists and ecocentrists should converge in judging wild ecosystems and, more specifically, predation in the wild to involve more good than harm. I proceed by refuting arguments to the contrary that have achieved a dismaying level of credence, given their obvious failures to meet their burden of proof. In the third subsection below, I sketch the argument and some evidence for what I take to be uncontroversial common ground for sentientists and ecocentrists: that meat consumption by humans must (at least) diminish tremendously. I then conclude this section with several "convergence arguments for ecocentrism," before moving on to the next section about a point on which the two value theories may diverge.

Wild value

Sentientist Horta (2010a) claimed to "debunk" the "idyllic view of nature" that "happiness… prevails over suffering in the wild" (p. 76). To his credit, he did not limit himself to abstract arguments, but instead discussed a concrete example that supposedly illustrates his point: the Atlantic cod population (*Gadus morhua*) in the Gulf of Maine. However, his discussion of this example demonstrates only what everyone already knows: that there is plenty of suffering in the wild. It does *nothing* to support his claim that "suffering prevails [over happiness] in nature" (p. 75), because he did not bother to examine the positive side of the balance at all. Horta (2017) made essentially the same one-sided argument, but without any such quantitative detail. By even more forcefully insisting that "most sentient beings undergo lives that are not worth living, and suffering vastly outweighs well-being in nature" (p. 265), Horta went far beyond his sources, including Darwin, who famously wrote that

> when we reflect on this struggle [by organisms for existence], we may console ourselves with the full belief, that the war of nature is not incessant, that no fear is felt, that death is generally prompt, and that the vigorous, the healthy, and the happy survive. (1859, p. 79)

Horta offered the following estimates to portray the suffering experienced by young cod fish. First, there are around one million adult cod in the Gulf. Second, on average each of these adults lay one million eggs per year.[1] Third, he guessed that ten percent of these eggs hatch, and assigned a ten-percent epistemic probability to the possibility that hatchlings are sentient. Finally, he assumed that, on average, the near entirety of these codlings who get eaten by predators experience ten seconds of suffering in the process. Multiplying these numbers together, we get 100 billion seconds of suffering per year.

If we do what Horta did not, and sketch the positive side of the balance for this example, it ironically supports what he called the "idyllic" view that good experiences greatly exceed bad ones in nature. The psychological goods that count toward intrinsic value for both sentientists and ecocentrists include at least the following: (1) codlings' own enjoyment of life prior to being eaten, (2) the net pleasure/happiness/satisfaction experienced by the adult cod, and (3) the predators' well-being enabled by nutrition from codlings. Any one of the above goods, by itself, easily outweighs the suffering estimated by Horta—even more so for the three combined. For example, each codling plausibly experiences more than ten seconds of net joy prior to being eaten. Likewise, most adult cod plausibly live lives that are at least barely worth living. Doing the math, if on average each adult experiences just a bit more than a single day's (100 000 seconds') worth of net positive well-being per entire year, we see that it is enough to outweigh the suffering of all their offspring that year. Finally, we can safely assume that the nutrition gained from each codling eaten enables more than ten seconds' worth of net enjoyment for the predator.

Thus, a sentientist calculus—considering both positive and negative experiences in nature, rather than just negative ones *à la* Horta—implies that the Gulf cod population involves more good than harm. An ecocentric calculus strongly agrees with this conclusion, since it ascribes intrinsic value not only to the individual well-being of sentient fish and their predators, but also to the species diversity and ecosystem function they involve. In particular, the cod's "r-selected" reproductive strategy sustains its own species, while consumption of codlings helps sustain predator diversity. In addition, perhaps adult cod serve as "keystone predators" themselves, supporting the diversity of their own prey (cf. Paine, 1966; Terborgh, 2015). Finally, cod, their predators, and their prey all contribute to energy flow through the Gulf of Maine, nutrient cycling within it, and other aspects of ecosystem function.

Predation by nonhumans

In another paper, Horta made a related argument, that reintroducing predators into ecosystems is "not compatible with a nonspeciesist approach" (2010b, p. 163). Again, he offered a concrete example to supposedly support his point:

the famous reintroduction of *Canis lupus* to Yellowstone National Park in 1995. But again, he considered only the negative experiences that resulted from this reintroduction. In particular, he cited studies showing that the wolves' elk prey have suffered not only higher death rates, but also greater stress levels and poorer nutrition, since fear of wolves now keeps them out of food-rich open meadows where they would be hunted more easily.

Recent studies have confirmed the negative impact of wolves on at least elk numbers and also on one other species, the wolves' competitor, the coyote. But *scores* of other vertebrate species have *surged* due to wolf reintroduction. This is because plant species like willows and aspens have flourished as herbivory by elk has declined. In turn, these plants have directly or indirectly improved the supply of food and/or habitat for amphibians, badgers, bears, beavers, ducks, eagles, fish, flycatchers, foxes, hawks, mice, muskrats, otters, rabbits, ravens, reptiles, sparrows, vireos, warblers, weasels, yellowthroats, and other sentient animals (Baril et al., 2011; Ripple and Beschta, 2012; Monbiot, 2013). The enhanced living conditions behind these surging numbers have arguably also raised the average levels of well-being experienced by individual members of these species. Even bison, though preyed upon by wolves, have nevertheless benefitted from the latter's reintroduction. Though some have been eaten, far more have prospered due to reduced competition from elk.

Once again, by sentientist criteria alone, the very example cited by Horta to condemn predation in the wild turns out to support the conclusion that such predation yields net benefits rather than net harm. All that it takes to reach this conclusion is to do the obvious and consider both positive and negative effects rather than just the latter. Once again, ecocentrism strongly concurs. In addition to the above-mentioned net-positive psychological goods, ecocentrists would also count the net-positive ecological goods provided by the wolf, such as improved species diversity and ecosystem function. As an example of the latter, the recovering willows and other streamside vegetation "provide increased hydraulic roughness and root strength thereby increasing the stability of formerly eroding streambanks" (Ripple and Beschta, 2012, p. 211).

Animal agriculture

In contrast to predation by some nonhuman animals on others, predation by humans may have perverse consequences at any level (Darimont et al., 2015) and certainly has devastating effects at current levels (Brashares et al., 2004). Livestock farming wreaks even more colossal disaster on both animals and ecosystems. On the positive side, humans obviously get protein and other nutrients from meat. However, since plant sources can provide the same nutrients, and since many humans overconsume meat to the point of inducing heart disease, it is doubtful whether current levels of meat consumption yield net benefits even from the narrow perspective of human health.[2]

Any broader perspective clearly indicates massive net harm. First, factory farms immiserate billions of sentient creatures. Second, nearly eighty percent of all agricultural land (cropland plus pasture) now goes to feed livestock rather than humans directly. In turn, agriculture is the leading cause of habitat loss for wild species and thus of biodiversity loss worldwide. The fact that it takes far more plant biomass to produce any given amount of animal biomass means that eating lower on the food chain would meet human nutritional needs on a small fraction of the land now used for agriculture. This by itself would reduce and possibly even reverse the current mass extinction, as well as mitigating both depletion of groundwater for irrigation and pollution by pesticides, fertilizer, and greenhouse gas (WWF, 2016; Machovina et al., 2015).[3]

Convergence arguments for ecocentrism

Sentientism and ecocentrism thus converge on three important *qualitative* value judgments: that value outweighs disvalue in nature and that predation by nonhumans contributes to this positive balance, but that predation by humans on livestock entails a net negative. Nevertheless, they differ *quantitatively* on these matters. Ecocentrism counts not only the net pleasure/happiness/satisfaction experienced by animals, but also the flourishing and health of nonanimal organisms and also the variety and harmony among organisms within and across more-than-animal ecosystems. Thus, relative to sentientism, ecocentrism ascribes much greater positive intrinsic value to natural ecosystems, net benefit to predation by nonhumans, and net harm to livestock farming. This quantitative difference despite qualitative convergence grounds the first among three of what I shall call "convergence argument for ecocentrism": if one is more confident in the three value judgments discussed above than in either of the two value theories converging on them, then it is best to go with ecocentrism, which supports the judgments more strongly.

Second, it is arguably worse to mistakenly exclude from direct moral consideration a being or entity who deserves it than to mistakenly include one who does not. While sentientism opens the door to nonhuman animals, it slams the door shut after them. Ecocentrism, in contrast, continues to hold the door open for plants, fungi, protists, and bacteria. And it acknowledges the moral considerability of ecological collectives like species and ecosystems based on more than just the well-being of the organisms within them. Thus, again, uncertainty about which value theory is correct should lead us to favour the more inclusive one, ecocentrism.

I offer the last of three convergence arguments by way of analogy with Norton's (1984) argument for anthropocentrism, which he wrongly assumed the public favours. Social science actually shows widespread adherence to ethical views exceeding not only anthropocentrism, but also sentientism. For example, strong

majorities of Americans agree that "humans have moral duties and obligations [not only] to other animal species," but also "to plants and trees," and even "to non-living nature" (Leiserowitz et al., 2005, p. 28). Thus, given the above-discussed practical convergences of sentientism and ecocentrism, it is best to stick with ecocentrism, since it fits better with public opinion.

The evidential basis of this last argument suggests a rather pointed challenge for sentientists. The best-known sentientist arguments about basic axiology—such as Singer's classic 1973 essay—oppose their view to the narrower one of anthropocentrism. Though there is still a long way to go (Donaldson and Kymlicka, 2011), such arguments have done great good. They have compelled many academic philosophers to broaden their perspectives and have inspired many individuals and institutions to change their practices. However, many sentientists now also defend their view against the broader ones of biocentrism and ecocentrism (see, e.g., Singer, 2011). These latter attempts resemble the anthropocentric defences once raised against sentientism. This resemblance and the social-scientific evidence cited above prompt the following question for sentientists: Do you really want to spend your career trying to get people to *narrow* their ethical horizons?

POSSIBLE DIVERGENCE: ECOCIDE

Convergence arguments are of course not the only kind bearing on the choice between sentientism and ecocentrism. In Mikkelson (in press), I follow up on Kelly's (2003) inference to the best explanation. We contend that the best account of what makes various aspects of sentient life intrinsically valuable entails that "nonsentient" life and higher-level properties of entire species and ecosystems have intrinsic value as well. In this section, I sketch a possible divergence between sentientism and ecocentrism. If the reader agrees with the value judgment in question—that the disvalue of plummeting wild animal populations outweighs the value of skyrocketing human numbers—then the fact that only ecocentrism clearly supports this judgment provides another argument in its favour.

The most recent version of the WWF's living planet index (LPI) tracks the average percent change in population size, from 1970 to 2012, among thousands of wild vertebrate species around the world. The upshot is that nature is collapsing. Every year sees two percent more lost, with a total of fifty-eight percent gone over the forty-two-year period, and populations set to be hacked down to a mere one-third of their initial levels by 2020 (WWF, 2016). If anything, the invertebrates making up most of the 10 million species on Earth have fared even worse (Dirzo et al., 2014; Hallmann et al., 2017).

The root cause of this downward spiral is relentless, exponential—i.e., explosive—growth of the human economy. While efficiency gains have reduced ecological damage per unit of economic activity by more than one percent per year, total economic activity has risen by more than three percent a year. Between 1970 and 2012, the world economy nearly quadrupled (data from the Global Footprint Network and World Bank). This means more, every year, of nature extracted, transformed into commodities, consumed, then discarded as waste, often toxic (Leonard, 2010).[4]

The almost-quadrupled economy sustained more than twice as many humans in 2012 than it did in 1970 (data from United Nations). Does this human gain outweigh the nonhuman devastation indicated by the LPI? Here is where sentientism and ecocentrism may very well part ways. The reason is that sentientism counts only gains and losses of individual sentients' well-being, whereas ecocentrism also counts both the well-being of so-called "nonsentient" organisms and higher-level properties of entire species and ecosystems. Because humans are more psychologically (and physiologically) complex than most of the nonhuman sentient animals we've been replacing, it may be that total sentient well-being has increased. If humans indeed experience greater well-being than most other sentient animals, then average sentient well-being has surely increased as well. Thus, the sentientist may be committed to valuing the billions of additional humans more highly than the trillions of wild animals they have supplanted.

Ecocentrism delivers the opposite verdict. Even a minimal version, which merely adopts Hurka's (1983) proposal of a diminishing-returns relationship between the intrinsic value of a species and its population size, supports the conclusion that "defaunation [as well as defloration] in the Anthropocene" (cf. Dirzo et al., 2014) has subtracted vastly more value than economic growth has added (Mikkelson and Chapman, 2014). More robust versions of ecocentrism, which more explicitly value species diversity and ecosystem function, support this conclusion even more strongly (Mikkelson, 2011).

CONCLUSION: SUPPLANTING THE UNJUST WITH THE NATURAL

> There is no jettisoning the concept of the wild or the effort to preserve some nature relatively free from human interference without accepting the human conquest of the biosphere… And we should not accept that conquest because it is selfish and unjust… Better to step back from the moral abyss of mass extinction… and set limits to human domination. (Cafaro, 2017, p. 128-129)

I have thus argued that sentientists and ecocentrists should agree on the positive net value of wild nature and predation within it and on the negative net value of livestock farming. I also showed why they might nevertheless disagree about the net (dis-)value resulting from the massive rise in human domination of the

biosphere that has occurred over the past few decades. To be fair, however, neither sentientists nor ecocentrists would endorse this latter trajectory as having been the best one. I thus conclude by contrasting two actually endorsed visions of the future that came into clearer focus during the conference of May 2017. One proceeds from the nature-is-Hell picture painted by Horta (see this volume, p. 85-100), along with the heroic assumptions about humanity's ability to save it critiqued by Delon and Purves. The other vision springs from something more like the "respect for independent nature" espoused by Hettinger (see this volume, p. 65-84).

I frame both visions as answers to the question, What is to be done about sentience and wildness? One answer is to massively intervene in nature to reduce animal suffering. This answer finds support not only from Horta, but also from several other animal ethicists, including Nussbaum (2006) who (in-)famously called for "supplanting the natural with the just." Such beneficent domestication would likely involve further massive reduction in the total number of sentient animals on Earth. Given that domesticated animals generally have smaller brains than their wild ancestors (Kruska, 2005), it would also probably reduce the average level of sentience among the nonhuman animals remaining. Without a doubt, it would further decimate the diversity of sentient and other life. This vision's single-minded focus on reducing suffering—while foregoing the huge amounts of pleasure, happiness, satisfaction, consciousness, knowledge, love, etc. that more numerous, more sentient animals would otherwise enjoy—leads me to ask whether it deserves the name "sentientist." "Antisentientist" seems closer to the mark.

The other answer to the question posed above is to massively intervene in society, to reduce human impacts on wild nature. This vision would involve short-term, limited interventions in nature to facilitate the rewilding of large areas—half the Earth, according to many proponents—but those areas would then be free to continue evolving on their own (Dinerstein *et al*. 2017). In this vision, the numbers of sentient animals in thousands to millions of species begin to recover from their anthropogenic—or, perhaps more accurately, "plutogenic" (cf. d'Arcy 2014)—collapse. Average levels of sentience resume the upward evolutionary trajectories set back when humans first started massively intervening in nature. And the variety of sentient and other life, along with the integrity and functioning of wild ecosystems, restores itself as well.

To the extent that animal ethicists disavow the points of convergence defended herein and commit themselves instead to the first vision sketched above, we seem to have again what Callicott (1980) called a "triangular affair": stark conflict not only between business as usual and the alternative visions of animal and environmental ethics, but also between those competing alternatives.

NOTES

[1] Horta supposed that each female lays two million (p. 81), but seems to have forgotten that half the population are male, which requires cutting the estimated number of eggs per adult in half.

[2] Also, as any connoisseur of vegan food knows, at least comparable and perhaps even greater levels of pleasure, happiness, satisfaction, and other psychological goods are attainable through consuming mostly plants as are now attained by overconsuming animals.

[3] In addition, while humans would consume more plants if they ate less meat, a larger number of domestic plants would be spared consumption by livestock, and a still greater number of wild plants would be spared the habitat loss involved in growing feed. Thus, not only would fewer animals be harmed by agriculture, but fewer plants as well.

[4] See Mikkelson (2013) and (in review) for why environmental conditions are unlikely to improve unless economic growth slows to substantially below the rate at which economists and governments typically aim (around three percent per year).

REFERENCES

Baril, Lisa M., A. J. Hansen, Roy Renkin, and Rick Lawrence, "Songbird Response to Increased Willow (*Salix* Spp.) Growth in Yellowstone's Northern Range," *Ecological Applications*, vol. 21, no. 6, 2011, p. 2283-2296.

Brashares, Justin S., Peter Arcese, Moses K. Sam, Peter B. Coppolillo, A. R. E. Sinclair and Andrew Balmford, "Bushmeat Hunting, Wildlife Declines, and Fish Supply in West Africa," *Science*, vol. 306, no. 5699, 2004, p. 1180-1183.

Cafaro, Phil, "Valuing Wild Nature" *in* Stephen M. Gardiner and Allen Thompson (eds.), *Oxford Handbook of Environmental Ethics*, Oxford, Oxford University, 2017, p. 125-138.

Callicott, John Baird, "Animal Liberation: A Triangular Affair," *Environmental Ethics*, vol. 2, no. 4, 1980, p. 311-338.

———, "How Ecological Collectives Are Morally Considerable," *in* Stephen M. Gardiner and Allen Thompson (eds.), *Oxford Handbook of Environmental Ethics*, Oxford, Oxford University, 2017, p. 113-124.

D'Arcy, Stephen, "Environmentalism as if Winning Mattered: A Self-Organization Strategy," https://publicautonomy.org/2014/09/17/environmentalism, 2014.

Darimont, Chris T., Caroline H. Fox, Heather M. Bryan, and Thomas E. Reimchen, "The Unique Ecology of Human Predators," *Science*, vol. 349, no. 6250, 2015, p. 858-860.

Dinerstein, Eric, David Olson, Anup Joshi, Carly Vynne, Neil D. Burgess, Eric Wikramanayake, Nathan Hahn, Suzanne Palminteri, Prashant Hedao, Reed Noss, Matt Hansen, Harvey Locke, Erle C. Ellis, Benjamin Jones, Charles Victor Barber, Randy Hayes, Cyril Kormos, Vance Martin, Eileen Crist, Wes Sechrest, Lori Price, Jonathan E. M. Baillie, Don Weeden, Kierán Suckling, Crystal Davis, Nigel Sizer, Rebecca Moore, David Thau, Tanya Birch, Peter Potapov, Svetlana Turubanova, Alexandra Tyukavina, Nadia De Souza, Lilian Pintea, José C. Brito, Othman A. Llewellyn, Anthony G. Miller, Annette Patzelt, Shahina A. Ghazanfar, Jonathan Timberlake, Heinz Klöser, Yara Shennan-Farpón, Roeland Kindt, Jens-Peter Barnekow Lillesø, Paulo Van Breugel, Lars Graudal, Maianna Voge, Khalaf F. Al-Shammari, And Muhammad Saleem, "An Ecoregion-Based Approach to Protecting Half the Terrestrial Realm", *BioScience*, vol. 67, no. 6, 2017, p. 534-545.

Dirzo, Rodolpho, Hillary S. Young, Mauro Galetti, Gerardo Ceballos, Nick J. B. Isaac and Ben Collen, "Defaunation in the Anthropocene," *Science*, vol. 345, no. 6195, 2014, p. 401-406.

Donaldson, Sue and Will Kymlicka, *Zoopolis: A Political Theory of Animal Rights*, New York, Oxford University, 2011.

Hallmann, Caspar A., Martin Sorg, Eelke Jongejans, Henk Siepel, Nick Hofland, Heinz Schwan, Werner Stenmans, Andreas Müller, Hubert Sumser, Thomas Hörren, Dave Goulson and Hans de Kroon, "More than 75 Percent Decline over 27 Years in Total Flying Insect Biomass in Protected Areas," *Public Library of Science ONE*, vol. 12, 2017, e0185809.

Hargrove, Eugene C. (ed.), *The Animal Rights/Environmental Ethics Debate: The Environmental Perspective*, New York, SUNY, 1992.

Horta, Oscar, "Debunking the Idyllic View of Natural Processes: Population Dynamics and Suffering in the Wild," *Telos*, vol. 17, no. 1, 2010a, p. 73-88.

———, “The Ethics of the Ecology of Fear against the Nonspeciesist Paradigm: A Shift in the Aims of Intervention in Nature,” *Between the Species*, vol. 10, 2010b, p. 163-187.

———, “Animal Suffering in Nature: The Case for Intervention,” *Environmental Ethics*, vol. 39, no. 3, 2017, p. 261-279.

Hurka, Thomas, “Value and Population Size,” *Ethics*, vol. 93, no. 3, 1983, p. 496-507.

Kelly, Christopher, *A Theory of the Good*, Boulder, University of Colorado, 2003.

Kruska, D. C. T., “On the Evolutionary Significance of Encephalization in Some Eutherian Mammals: Effects of Adaptive Radiation, Domestication, and Feralization,” *Brain, Behavior and Evolution*, vol. 65, no. 2, 2005, p. 73-108.

Leiserowitz, Anthony A., Robert W. Kates and Thomas M. Parris, “Do Global Attitudes and Behaviors Support Sustainable Development?,” *Environment*, vol. 47, no. 9, 2005, p. 22-38.

Leonard, Annie, *The Story of Stuff: How Our Obsessions with Stuff is Trashing the Planet, Our Communities, and Our Health—A Vision for Change*, New York, Simon and Schuster, 2010.

Leopold, Aldo, *A Sand County Almanac*, New York, Oxford University, 1949.

Machovina, Brian, Kenneth J. Feeley and William J. Ripple, “Biodiversity Conservation: The Key Is Reducing Meat Consumption,” *Science of the Total Environment*, vol. 536, 2015, p. 419-431.

Mikkelson, Gregory M., “Weighing Species,” *Environmental Ethics*, vol. 33, no. 2, 2011, p. 185-196.

———, “Growth is the Problem; Equality is the Solution,” *Sustainability*, vol. 5, 2013, p. 432-439.

———, “Sentience, Life, Richness,” *in* Tyler DesRoches, Frank Jankunis and Byron Williston (eds.), *Canadian Environmental Philosophy*, in press.

———, “Invisible Hand or Ecological Footprint? Comparing Social vs. Environmental Impacts of Recent Economic Growth,” in review.

Mikkelson, Gregory M. and Colin A. Chapman, “Individualistic Environmental Ethics: A *Reductio ad Exstinctum*?,” *Environmental Ethics*, vol. 36, no. 3, 2014, p. 333-338.

Monbiot, George, *Feral*, Toronto, Penguin, 2013.

Naess, Arne and George Sessions, *The Deep Ecology Platform*, www.deepecology.org/platform.htm, 1984.

Norton, Bryan G., “Environmental Ethics and Weak Anthropocentrism,” *Environmental Ethics*, vol. 6, no. 2, 1984, p. 131-148.

Paine, Robert T., “Food Web Complexity and Species Diversity,” *American Naturalist*, vol. 100, no. 910, 1966, p. 65-75.

Ripple, William J. and Robert L. Beschta, “Trophic Cascades in Yellowstone: The First 15 Years after Wolf Reintroduction,” *Biological Conservation*, vol. 145, no. 1, 2012, p. 205-213.

Ryder, Richard (ed.), *Animal Welfare and the Environment*, London, Gerald Duckworth, 1992.

Singer, Peter, "Animal Liberation," *The New York Review of Books*, April 5, 1973.

———, Foreword, in Ryder, Richard (ed.), *Animal Welfare and the Environment*, London, Gerald Duckworth, 1992.

———, *Practical Ethics*, New York, Cambridge University, 2011.

Terborgh, John W., "Toward a Trophic Theory of Species Diversity," *Proceedings of the National Academy of Sciences of the United States of America*, vol. 112, no. 37, 2015, p. 11415-11422.

Williston, Byron (ed.), *Environmental Ethics for Canadians*, Toronto, Oxford University, 2016.

WWF, *Living Planet Report 2016: Risk and Resilience in a New Era*, Gland, WWF International, 2016.

INTERVENTIONNISME ET FAUNE SAUVAGE

VIRGINIE MARIS
CENTRE D'ÉCOLOGIE FONCTIONNELLE & ÉVOLUTIVE (CEFE - UMR5175)

ÉLISE HUCHARD
INSTITUT DES SCIENCES DE L'ÉVOLUTION, UNIVERSITÉ DE MONTPELLIER (ISEM - UMR5554)

RÉSUMÉ :

Considérant l'ubiquité de la souffrance dans le monde sauvage, la question se pose de notre obligation d'intervenir. Du simple devoir d'assistance dans des situations ponctuelles à des projets de transformation des conditions de vie animale à grande échelle, la défense de l'interventionnisme entre en conflit avec la pensée conservationniste qui valorise la naturalité ou l'autonomie des systèmes écologiques. Dans cet article, nous tentons de mettre en dialogue les intuitions interventionnistes et la pensée conservationniste. Nous exposons tout d'abord l'argument interventionniste et ses limites épistémiques. Nous mitigeons ensuite le constat selon lequel les conditions de vie des animaux sauvages justifient notre intervention en replaçant le problème de la souffrance dans un cadre évolutif et écologique plus large puis en insistant sur d'autres obligations vis-à-vis des animaux sauvages comme le respect de leur autonomie ou de leur souveraineté. Enfin, nous défendons une conception pluraliste de nos relations au monde naturel dans laquelle le souci pour les animaux s'équilibre avec d'autres valeurs écocentrées. Nous concluons en présentant les ressources encore peu explorées d'une conservation compassionnelle qui intègre le souci pour les individus et le souci pour les collectifs écologiques dans les normes de ses actions.

ABSTRACT:

The ubiquity of suffering in the wild raises the question of our obligation to intervene. From a simple duty of assistance in particular situations to large-scale projects aimed at transforming animal living conditions, the defense of interventionism often conflicts with conservationist values, which emphasize the naturalness or autonomy of ecological systems. In this article, we attempt to open a dialogue between interventionist intuitions and the conservationist school of thought. We first expose the interventionist argument and its epistemic limitations. We subsequently mitigate the statement according to which the living conditions of wild animals justify human intervention by replacing the problem of suffering in a broader ecological and evolutionary framework, as well as by insisting on other obligations that we may have towards wild animals, such as the respect of their autonomy and sovereignty. Finally, we defend a pluralistic conception of our relationships to the natural world, in which care for animals has to be balanced with other, eco-centered, values. We conclude by presenting the resources of a compassionate conservation approach, which remains largely unexplored and integrates care for individual animals as well as for ecological entities in its norm for action.

« Il ne tiendra qu'à vous beau sire, d'être aussi gras que moi, lui repartit le Chien. Quittez les bois, vous ferez bien : vos pareils y sont misérables. Cancres, haires, et pauvres diables, dont la condition est de mourir de faim. Car quoi? rien d'assuré : point de franche lippée : Tout à la pointe de l'épée. Suivez-moi : vous aurez un bien meilleur destin. »
Le Loup reprit : « Que me faudra-t-il faire? Presque rien, dit le Chien, donner la chasse aux gens portant bâtons, et mendiants; Flatter ceux du logis, à son Maître complaire : Moyennant quoi votre salaire sera force reliefs de toutes les façons : Os de poulets, os de pigeons, sans parler de mainte caresse. »
Le Loup déjà se forge une félicité qui le fait pleurer de tendresse. Chemin faisant, il vit le col du Chien pelé.
« Qu'est-ce là? lui dit-il.
- Rien.
- Quoi? Rien?
- Peu de chose.
- Mais encore?
- Le collier dont je suis attaché, de ce que vous voyez est peut-être la cause.
- Attaché? dit le Loup : vous ne courez donc pas où vous voulez?
- Pas toujours; mais qu'importe?
- Il importe si bien, que de tous vos repas je ne veux en aucune sorte, et ne voudrais pas même à ce prix un trésor. »
Cela dit, maître Loup s'enfuit, et court encore.

Le loup et le chien
Jean de Lafontaine, *Les Fables, Livre I*

INTRODUCTION

En février 2012, une vague de froid s'abat sur la Camargue. Alors que dans cette région le mercure ne passe presque jamais sous zéro, les températures atteignent - 6°C plusieurs jours d'affilée, entraînant le gel de la plupart des étangs. Les paysages sont d'une beauté à couper le souffle, mais la splendeur fait rapidement place à la tragédie. Le froid affaiblit considérablement les animaux. Les flamants roses (*Phenopticus roseus*) sont particulièrement vulnérables. Alors qu'ils dépensent beaucoup d'énergie pour maintenir leur température corporelle, les ressources se raréfient. Leur alimentation, exclusivement composée de petits organismes qu'ils filtrent dans l'eau des étangs, est entravée par le gel. Certains oiseaux sont pris dans la glace, brisent leurs pattes en tentant de s'en libérer ou meurent simplement de faim sur place. On estime que 1500 individus ont péri dans cet épisode. Une telle situation de crise, bien que rare, n'est pas exceptionnelle. En 1983, lors de la précédente vague de froid plus longue et plus rigou-

reuse encore, c'est plus de 3000 flamants qui sont morts. Face à une telle crise, au cœur de la réserve naturelle nationale de Camargue, une question cruciale se pose alors : que signifie protéger la nature dans un tel contexte? Faut-il secourir les flamants en brisant la glace, leur apporter de la nourriture additionnelle sous forme de granulés? Non loin de là, dans l'Aude, les pompiers ont recueilli une dizaine d'oiseaux à la caserne pour les réchauffer et les nourrir, improvisant des baudriers qui les maintiennent en suspension le temps qu'ils retrouvent la force de se tenir sur leurs pattes. Ou bien convient-il de « laisser faire la nature », se contenter de compter les morts et profiter éventuellement de l'occasion pour récolter des cadavres afin d'améliorer les connaissances sur cette espèce? Du point de vue écologique, une telle mortalité massive, à condition de rester occasionnelle, ne met pas en péril la population camarguaise, qui est en croissance depuis les années 1960 et s'élève aujourd'hui à plus de 12 000 couples nicheurs, pouvant facilement supporter une telle baisse d'effectif. Néanmoins, riverain.es, chercheuses, chercheurs et naturalistes ont été bouleversé.es par cet épisode clivant. Alors que de nombreuses personnes attendaient des gestionnaires et des écologues qu'ils portent secours aux oiseaux en détresse, ceux-ci ont décidé de laisser faire, en partie par manque de moyens pour un sauvetage efficace, mais aussi, et peut-être surtout, considérant que le caractère « naturel » de la situation ne justifiait pas une intervention extérieure.

Cet épisode met en scène une situation commune : la nature ne ressemble pas à une carte postale de flamants roses dans le soleil couchant. Elle est le théâtre de grandes souffrances. Dans cet article, nous nous interrogeons sur ce que peut signifier cette souffrance pour celles et ceux qui se donnent comme mission de protéger la nature. En particulier, nous tentons de cerner la pertinence et les limites du devoir d'intervention quant à la souffrance des animaux sauvages. Nous présentons tout d'abord l'argument interventionniste tel qu'il s'est articulé dans la littérature philosophique. Nous interrogeons ensuite la prévalence de la souffrance dans le monde sauvage, le sens qu'elle peut avoir d'un point de vue biologique ainsi que la façon dont elle s'articule avec d'autres composantes du bien-être animal, en particulier l'autonomie. Enfin, nous montrons comment, sans nier l'importance morale des animaux, d'autres valeurs peuvent intervenir dans la délibération lorsqu'il est question d'évaluer si et comment il convient d'intervenir pour réduire la souffrance des animaux sauvages, en s'intéressant à des valeurs centrées sur les êtres humains et à des valeurs centrées sur des entités écologiques complexes, défendant ainsi une conception pluraliste de nos obligations morales vis-à-vis du monde naturel.

1. L'ARGUMENT INTERVENTIONNISTE

A. Le problème de la souffrance des animaux sauvages

Ce à quoi se sont trouvé.es confronté.es les gestionnaires de la nature durant la vague de froid de 2012 n'est qu'un exemple, particulièrement dramatique, parmi tant d'autres dans lesquels le souci pour le bien-être des individus et le souci pour la communauté biotique ou l'écosystème renvoient à des prescriptions

différentes. Car quiconque s'intéresse à la nature, à l'évolution, au fonctionnement des écosystèmes ne peut ignorer cet implacable constat : le monde naturel, si beau et si inspirant puisse-t-il être, est le théâtre d'une multitude de souffrances, de peines, de morts. Comme le dit la sagesse populaire, « la nature est cruelle », et les philosophes l'ont depuis longtemps souligné. Lorsqu'il s'attache à réfuter les morales fondées sur la nature, John Stuart Mill écrit :

> La simple vérité est que la nature accomplit chaque jour presque tous les actes pour lesquels les hommes sont emprisonnés ou pendus lorsqu'ils les commettent envers leurs congénères. Elle fauche ceux dont dépend le bien-être de tout un peuple [...] avec aussi peu de remords que ceux pour qui la mort est un soulagement pour eux-mêmes ou une bénédiction pour les personnes soumises à leur influence nocive. En matière d'injustice, de ruine et de mort, un ouragan et une épidémie l'emportent de beaucoup sur l'anarchie et le règne de la terreur (Mill, 1904/2003, p. 69-70).

Cette idée que la nature est cruelle, injuste, aveugle, et que la responsabilité humaine est d'instituer le bien dans un ordre amoral est développée par plusieurs auteur.trices et ses implications sur notre devoir d'intervention dans le monde naturel sont multiples. Martha C. Nussbaum suggère qu'il conviendrait, dans certaines circonstances, de « remplacer graduellement le naturel par le juste » (Nussbaum, 2006, p. 400) et Oscar Horta invite à intervenir dans la nature afin de remplacer une écologie de la peur par une écologie de la compassion (Horta, 2010).

La question de l'importance morale de la souffrance dans le monde sauvage est un objet de discorde entre éthique environnementale et éthique animale, donnant lieu à des positions polarisées : d'un côté, il s'agit de nier toute pertinence à la prise en compte morale de ces souffrances et de caricaturer la position animaliste comme une sensiblerie puérile d'amoureux de Bambi (Hettinger, 1994); de l'autre, il s'agit de réduire à l'absurde les arguments environnementalistes parce qu'ils relèveraient d'une vision idyllique de la nature foncièrement bonne. Entre ces deux pôles, plusieurs auteur.trices ont essayé de ménager un mi-chemin, généralement en acceptant que la souffrance des animaux sauvages est un mal, mais en arguant que l'intervention risque d'entraîner des maux bien pires encore. À notre connaissance, le travail d'articulation de ces deux prescriptions contraires que sont la protection de la nature et la réduction de la souffrance a été davantage pris en charge par les tenants de l'éthique animale (par exemple Donaldson et Kymlicka, 2013; Everett, 2001) que par ceux qui se réclament de l'éthique environnementale. Dans cet article, nous prenons un point de départ différent : comment faire sens, du point de vue de la protection de la nature, et donc en se situant d'emblée plutôt en familiarité avec les éthiques environnementales, de cette apparente ubiquité du mal dans le monde naturel?

B. La forme logique de l'argument interventionniste

La forme probablement la plus convaincante de défense de l'interventionnisme est une extension du devoir d'assistance aux animaux sauvages. Si les animaux sauvages ont des droits ou des intérêts, nous aurions dans certaines circonstances la responsabilité de leur porter secours lorsqu'ils font face à de grands périls.

Bien qu'il prenne des formes variées, le noyau argumentatif de l'interventionnisme s'apparente à la forme suivante :

Prémisse 1 - Il est moralement requis de réduire les souffrances des êtres sensibles.
Prémisse 2 - Les animaux sauvages sont des êtres sensibles.
Prémisse 3 - La vie des animaux sauvages est faite de nombreuses souffrances.
Conclusion - Il est moralement requis d'intervenir pour réduire les souffrances des animaux sauvages.

La question se pose alors des implications pratiques d'une telle responsabilité. Où commence, et surtout où s'arrête notre responsabilité d'intervenir pour réduire les souffrances des animaux sauvages? L'intuition qu'il serait moralement condamnable de ne pas intervenir lorsqu'un petit geste peut sauver la vie d'un animal, comme lorsque le simple bris de la surface glacée d'un étang peut secourir un flamant rose, n'indique rien quant au degré de détresse justifiant l'application du devoir d'assistance, sur l'intensité des efforts qui peut être exigé, ou sur les modalités de l'intervention requise. S'il ne suffit pas de se baisser, de ramasser une pierre et de la jeter sur la surface glacée de l'étang, mais qu'il faut marcher sur la glace, risquer de se mouiller les pieds, de se geler les orteils, d'attraper froid, d'arriver en retard à un rendez-vous... Et s'il faut aller chercher des outils, mobiliser des ressources humaines et matérielles importantes, accaparer des sapeurs-pompiers quand ils pourraient être nécessaires ailleurs, ce devoir d'assistance se trouverait-il mitigé par d'autres considérations?

C. Les implications pratiques de l'argument interventionniste

Le problème de l'interventionnisme a parfois été utilisé comme réduction à l'absurde de l'éthique animale. S'il est moralement requis de diminuer les souffrances animales, alors il faudrait par exemple empêcher les prédateurs de chasser, ce qui serait un non-sens et prouverait ainsi par l'absurde que la souffrance animale n'est pas un problème moral. Mais l'argument interventionniste prend différentes formes qui ne sont pas toutes si faciles à écarter. Pour John Hadley (2006), qui défend un « principe minimal d'assistance », nous avons l'obligation de porter secours aux animaux sauvages lorsque le coût pour nous est minime et qu'ils sont en grande détresse. Des versions beaucoup plus exigeantes sont également défendues. Pour certain.es auteur.trices, il conviendrait par exemple de réduire la fécondité des individus dont les stratégies de reproduction sont fondées sur la production d'une très nombreuse progéniture

avec des taux de survie très faibles (Johannsen, 2017); de réduire drastiquement le nombre d'animaux sauvages par stérilisation puis de maintenir les survivants dans des parcs zoologiques où l'on serait en mesure d'assurer leur bien-être (Moen, 2016); ou encore d'organiser l'extinction des espèces prédatrices (McMahan, 2015). Le problème de la souffrance des animaux sauvages soulève en effet immédiatement celui de la prédation et de notre responsabilité à son endroit, débat assez ancien qui se trouve aujourd'hui réactivé par l'espoir de nouvelles formes possibles d'intervention fondées sur les biotechnologies. Sur son blogue intitulé l'« Impératif Hédonistique », le transhumaniste David Pearce va jusqu'à plaider en faveur d'un déploiement des recherches en ingénierie génétique afin de reprogrammer génétiquement les prédateurs pour qu'ils adoptent des régimes végétariens (Pearce, 2009).

Penser notre devoir d'intervention dans le monde sauvage demande en effet de répondre à plusieurs questions difficiles : 1. Est-ce que toutes les formes de souffrance en appellent également au devoir d'assistance? Doit-on seulement sauver la vie des animaux lorsque celle-ci est en danger critique ou faudrait-il également réduire leurs peines dans des circonstances plus communes, par exemple en réduisant la faim, la soif et certaines souffrances liées à des maladies en leur fournissant de la nourriture, de l'eau, des médicaments, des vaccins? 2. Quelle quantité d'efforts peut être exigée des humains face à la souffrance des animaux sauvages? Sommes-nous dans l'obligation d'aider un animal uniquement lorsque cela ne coûte presque rien ou avons-nous la responsabilité de mettre en œuvre les moyens nécessaires même lorsque ceux-ci sont coûteux, et si oui, jusqu'où? 3. Enfin, quelles sont les réponses qu'il convient d'apporter à cette souffrance? Doit-on limiter nos interventions à des petits « coups de pouce » ponctuels ou peut-on envisager des actions qui modifient significativement les conditions de vie des animaux, par exemple en neutralisant leurs prédateurs, en les transférant dans des habitats plus propices à leur épanouissement ou encore en modifiant leur régime alimentaire?

Du point de vue de la protection de la nature, au-delà du devoir d'assistance visant à réduire la souffrance des animaux sauvages, la question se pose de la légitimité de certaines pratiques routinières qui, directement ou indirectement, entretiennent voire augmentent les souffrances des animaux sauvages. Est-il acceptable de maintenir des populations menacées et de faire croître leur effectif lorsque les individus dont elles sont composées vivent dans des conditions difficiles au sein d'habitats dégradés ou qu'ils sont la cible des chasseurs? Est-il acceptable de conserver, renforcer, voire réintroduire des populations de prédateurs dont un petit nombre d'individus suffit à réduire significativement le bien-être d'un grand nombre de proies? C'est pourtant ce qui se produit dans certains programmes de conservation, de renforcement et de réintroduction de grands prédateurs, comme la protection du lynx commun (*Lynx lynx*) en Europe ou la réintroduction de l'ours brun (*Ursus arctos arctos*) dans les Pyrénées. Est-il acceptable de préserver des dynamiques naturelles de variations environnementales qui pèsent sur la survie et le bien-être des populations comme les successions naturelles d'inondations et de sécheresse dans les zones humides?

Si la nature, faute d'intention, ne peut être à proprement parler cruelle, sa protection ne suppose-t-elle pas une certaine forme de cruauté, ou à tout le moins d'indifférence coupable, à l'endroit de tous les êtres qui souffrent dans la nature? Une telle indifférence se rencontre parfois parmi les éthicien.nes de l'environnement ou les gestionnaires d'espaces naturels, mais nous pensons qu'elle n'est pas un corollaire inévitable du souci pour la nature et que l'on peut tout à la fois se dévouer à la protection du monde naturel et se soucier de la souffrance des animaux sauvages. Mais avant d'aborder les formes possibles d'une telle conciliation, évoquons certaines raisons de limiter le devoir d'intervention du point de vue de l'intérêt animal : d'une part, un principe de précaution quant aux conséquences réelles de l'intervention, et d'autre part un principe d'équilibre entre différentes composantes du bien-être.

D. La réserve par précaution

La plupart des auteur.trices qui ont abordé la question de l'intervention dans le monde sauvage ont souligné la difficulté qu'il y avait à s'assurer des conséquences véritablement positives d'une intervention donnée, particulièrement si elle est à large échelle. Peter Singer par exemple, lorsqu'il discute du bien-fondé des interventions visant à réduire la souffrance dans le monde sauvage, met en garde sur la dimension potentiellement contre-productive de l'intervention :

> Il est possible que l'intervention humaine améliore les conditions de vie des animaux, et soit donc justifiée. Néanmoins, à en juger par le passé, toute tentative de modification des écosystèmes à large échelle finit par faire plus de mal que de bien. Pour cette raison au moins, hormis dans quelques cas isolés, mieux vaut s'en tenir à s'abstenir de tuer inutilement des animaux ou de les traiter cruellement. (Singer, 2011, p. 226-227, traduit par les autrices).

Dans ce passage, Singer s'en remet à l'expérience pour inviter à la prudence. En effet, étant donné la complexité des systèmes écologiques, notre connaissance partielle de leur fonctionnement et la difficulté à estimer le bien-être animal, il est très difficile de prédire quelles seront les conséquences d'une intervention sur l'ensemble des êtres sensibles affectés. Par exemple, des travaux ont montré que le fait de nourrir les passereaux pendant les mois d'hiver augmente leur risque de contracter certaines maladies infectieuses (Wilcoxen et al., 2015), ou encore que la supplémentation artificielle des ongulés sauvages entraîne une augmentation substantielle du taux de prédation des nids d'espèces d'oiseaux qui nichent au sol (Selva et al., 2014). Parce que nos capacités à prévoir les conséquences de nos interventions sur le bien-être des animaux sauvages sont faillibles, il serait donc approprié de s'abstenir d'intervenir.

En plus de l'incertitude qui peut nous inciter à ne pas intervenir faute de prévisibilité des conséquences de nos actions, on peut identifier des mécanismes susceptibles de rendre contre-productives certaines formes d'intervention, invitant encore davantage à la prudence. Supposons qu'en secourant les flamants

roses du Vaccarès, nous permettions à des individus sédentaires de survivre au sein d'une population majoritairement migratrice. Année après année, ces individus qui ne perdent ni temps ni énergie à migrer seront peut-être plus aptes à se reproduire et donc à transmettre leur caractère sédentaire à leur progéniture que leurs congénères migrateurs. On peut alors craindre que la proportion d'individus sédentaires n'augmente progressivement dans la population et que lors de l'épisode de froid suivant, un plus grand nombre d'individus se trouvent à leur tour en détresse. En quelque sorte, en interférant avec la sélection naturelle à un temps *t,* nous permettons à un trait défavorable de se maintenir et de se propager. Une telle contre-sélection entraînerait une baisse de l'adaptation des populations sauvages à leur environnement naturel, impliquant soit une dépendance accrue aux interventions humaines dans un cercle vicieux de perte d'autonomie, soit une plus grande souffrance pour les générations futures.

Considérant ce risque, une préférence à priori pour « laisser faire » la nature peut s'expliquer autrement que par une indifférence à la souffrance des animaux sauvages ou la négation du caractère moralement significatif de cette souffrance. C'est justement pour éviter des souffrances encore plus grandes dans les générations à venir qu'il convient parfois de laisser périr les individus les moins adaptés aux contraintes de leur environnement. Néanmoins, si l'on admet l'argument et que l'intervention n'est limitée que par l'incertitude concernant ses conséquences réelles, on accepte qu'il serait moralement bon de réduire la souffrance dans le monde sauvage. Ce faisant, même si la prudence invite à suspendre momentanément l'intervention, il conviendrait d'agir de façon à lever l'incertitude. C'est l'essence même du principe de précaution qui nous enjoint, en situation d'incertitude, non pas à ne rien faire, mais, lorsque c'est possible, à tenter de lever l'incertitude qui entrave l'action. Transposé au contexte qui nous importe ici, le principe de précaution inviterait donc à développer des travaux susceptibles de mieux nous informer sur la souffrance des animaux sauvages et sur les façons de la réduire, mais aussi sur les aspects fondamentaux du fonctionnement des écosystèmes sur une échelle évolutive, de façon à pouvoir prédire les conséquences d'une intervention sur les générations futures. C'est par exemple ce que propose Horta (ce dossier, p. 85-100) lorsque, convenant que nous n'avons pas aujourd'hui les moyens techniques d'intervenir à grande échelle sans risque d'effets pervers, il considère que nous avons néanmoins la responsabilité d'investir dans la recherche pour lever les incertitudes qui contraignent aujourd'hui l'action, afin de développer une véritable « biologie de la compassion » (Ng, 1995). D'autres envisagent les ressources possibles des technologies d'orientation des gènes telles que CRIPR-Cas9 pour réduire la fertilité de certaines espèces (Johannsen, 2017) ou encore pour transformer le régime alimentaire des carnivores (Pearce, 2016).

En l'état actuel de nos connaissances, de telles perspectives apparaissent plus de l'ordre de la science-fiction que d'un projet réaliste de gestion de la nature. Mais ne s'inscrivent-elles pas en continuité avec l'histoire de la domestication? Choisir les traits des animaux, intervenir sur leur fertilité, transformer leur régime alimentaire, construire presque pièce à pièce des environnements

favorables à leur survie et à leur productivité en éliminant les prédateurs et les éléments pathogènes, cela ressemble tout à fait à de grandes étapes de la domestication. Et les nouvelles biotechnologies pourraient effectivement permettre de faire en quelques générations ce qui nécessiterait des siècles par simple sélection génétique.

Le constat d'une certaine continuité entre la domestication et les développements possibles d'une biologie de la compassion très interventionniste soulève au moins deux considérations. D'une part, la conservation se trouve aujourd'hui dans un contexte de ressources humaines, financières et techniques extrêmement limitées. Les budgets publics alloués à la protection de la nature se réduisent chaque année alors que les besoins ne cessent d'augmenter. Réorienter les recherches et les pratiques de la conservation vers la réduction de la souffrance animale impliquerait de faire des choix, des compromis au sein d'une assiette que l'on peine déjà à se partager entre diverses priorités. D'autre part, et plus encore que la question des moyens, le projet même d'extension de l'influence humaine au monde naturel est en contradiction directe avec certaines des intuitions les plus profondes du mouvement conservationniste. En effet, l'idée que la nature a une valeur en elle-même, dans sa dimension sauvage et spontanée, est un thème central des mouvements de protection de la nature (Takacs, 1996). Le monde de la conservation se montre d'ailleurs plutôt récalcitrant à la requalification de ses objectifs en termes anthropocentriques et utilitaristes à travers l'approche par services écosystémiques, qui propose une redirection des efforts de conservation vers la satisfaction des besoins humains (Maris, 2014). La biologie de la compassion opère un transfert semblable, invitant à délaisser des valeurs proprement écologiques telles que la biodiversité, l'intégrité écologique, la naturalité, au profit de la seule satisfaction des intérêts des êtres sensibles.

Cette répugnance à voir s'étendre le règne de l'influence humaine sur la nature pointe vers une critique bien plus profonde du devoir d'intervention que la simple précaution. En effet, n'y a-t-il pas de bonnes raisons de ne pas intervenir même lorsqu'on sait avec certitude que cela minimiserait les souffrances? Quand bien même nous disposerions de moyens fiables pour réduire ou éliminer la souffrance animale dans le monde sauvage, faudrait-il le faire? Nous allons maintenant présenter deux limites au devoir d'intervention : l'une fondée sur les intérêts des animaux eux-mêmes; l'autre sur des valeurs qui ne sont pas centrées sur les animaux.

2. PAR-DELÀ LA SOUFFRANCE

A. La nature est-elle si cruelle? Critique de la prémisse 3

Dans un passage abondamment cité par les tenants de l'interventionnisme, Richard Dawkins (1996) brosse un tableau particulièrement terrible de la condition des êtres de nature qui renvoie à la troisième prémisse de notre argument interventionniste, à savoir que la vie des animaux sauvages est faite de nombreuses souffrances.

> La quantité totale de souffrances par an dans la nature est au-delà de tout entendement. Pendant le temps qu'il me faut pour composer cette phrase, des milliers d'animaux sont dévorés vivants; d'autres fuient pour sauver leur vie, gémissant de peur; d'autres encore se font lentement ronger de l'intérieur par d'horribles parasites; des milliers d'animaux de tous genres meurent de faim, de soif et de maladie. […] Dans un monde fait de forces physiques aveugles et de réplication génétique, certains seront blessés, d'autres seront plus chanceux, et je vous mets au défi de trouver à cela la moindre raison ou la moindre justice. L'univers, tel que nous l'observons, est exactement tel que nous devrions le prédire s'il n'y avait, finalement, ni dessein, ni but, ni bien, ni mal, rien qu'une immense indifférence, aveugle et sans pitié. (Dawkins, 1996, traduit par les autrices)

Cet extrait porte un regard particulièrement sombre sur la nature et les conditions de vie des animaux sauvages. Nous mitigerons ce propos en montrant comment des travaux en éthologie, en physiologie, en écologie et en évolution invitent au contraire à considérer la vie sauvage comme une source d'épanouissement et de bien-être pour les animaux. Ne niant en rien la réalité de leur souffrance, il s'agit ici de l'envisager au regard d'émotions positives qui la complètent. Nous ne sommes pas en mesure de calculer ici souffrances et plaisirs, et nous doutons qu'un tel calcul soit même possible. Notre objectif dans cette section est donc seulement de souligner que s'il y a de la souffrance dans le monde sauvage, il y a aussi beaucoup de plaisir.

Une perspective éthologique

Les études de long terme sur le comportement et l'histoire de vie des animaux sauvages, qui ont pour objet de suivre jour après jour, et génération après génération, un grand nombre d'individus dans leur environnement, suggèrent que cette vision est grandement biaisée, et que la perception qu'ont les animaux de leur propre vie n'a aucune raison d'être aussi sombre et tourmentée. Ces études décrivent de nombreuses circonstances quotidiennes suscitant des émotions positives pour les individus suivis, comme l'excitation liée à la découverte d'une ressource nourrissante (Clay et al., 2012), le bien-être émanant d'une longue sieste au soleil, ou encore de fréquentes interactions sociales positives, telles que des comportements de jeu, de toilettage, ou encore des moments de détente et d'intimité liant les membres d'un groupe (Smuts, 2001). De telles observations dépeignent aussi la complexité du paysage social de certaines sociétés animales, et les prouesses stratégiques déployées à travers des alliances temporaires ou durables, des comportements de manipulation visant à tromper les rivaux ou à séduire les membres du sexe opposé, qui témoignent ainsi de la richesse de la vie sociale des individus et de l'intérêt qu'ils peuvent éprouver à y prendre part (Cheney and Seyfarth, 2007; De Waal, 1995).

Au-delà des émotions positives qui ponctuent la vie des animaux sauvages, on peut également rappeler que les interactions sociales sont loin d'être systémati-

quement négatives et compétitives. De nombreuses études mettent en évidence des comportements de coopération et de réciprocité entre congénères dans la nature (Clutton-Brock, 2002), ou encore des comportements de réconciliation et de consolation (De Waal, 2009). Des approches expérimentales récentes démontrent l'existence et l'importance du sentiment d'empathie chez certaines espèces à travers des résultats troublants. Ainsi, un rat n'hésitera pas à payer un coût significatif pour libérer un congénère inconnu pris au piège émettant des vocalisations de détresse, alors même qu'il ne tirera aucun bénéfice de son action (Bartal et al., 2011). Un corpus de données portant sur diverses espèces de mammifères sauvages met en évidence les effets positifs et prononcés de liens sociaux forts et durables pour atténuer les sources de stress d'origine sociale ou environnementale (Young et al., 2014) y compris les deuils liés à la prédation de compagnons proches (Engh et al., 2006), ainsi que pour améliorer la santé, la survie ou encore la longévité des individus engagés dans de telles relations (Silk et al., 2003, 2010; Silk, 2014).

Finalement, ces études montrent également que certains individus vivent longtemps et que les phénomènes de sénescence ne sont pas rares dans la nature, contrairement à ce que l'on a longtemps cru (Nussey et al., 2013). Considérées dans leur ensemble, ces études indiquent que la vie des animaux sauvages est loin d'être toujours courte et tourmentée, et peut au contraire s'avérer riche en émotions positives comme négatives, tissée de liens sociaux puissants qui contribuent à atténuer les souffrances et les stress quotidiens – comme, somme toute, celle de beaucoup d'humains.

Une perspective physiologique

Des approches physiologiques complètent les observations précédentes en montrant aussi que certains comportements sociaux se traduisent par une diminution des niveaux sanguins de cortisol, une hormone de stress qui se retrouve chez tous les vertébrés (par exemple Shutt et al., 2007), ou par une augmentation des niveaux sanguins d'ocytocine (Burkett et al., 2016). L'ocytocine est une hormone très impliquée dans la physiologie de l'allaitement et de l'accouchement des mammifères, mais plus largement médiatrice des comportements d'attachement, dans des contextes maternel et extramaternel, comme les relations romantiques chez l'humain (Feldman, 2012), ou autres comportements d'affiliation chez de nombreux mammifères (Burkett et al., 2016). L'augmentation du taux d'ocytocine est associée au plaisir (y compris sexuel) et aux sensations de bien-être chez les humains qui peuvent en témoigner (Hiller, 2004), et il est probable que ces associations se retrouvent chez les autres mammifères étant donné la similarité des contextes qui suscitent une variation des niveaux d'ocytocine, et de ses fonctions biologiques. D'autres neurotransmetteurs sont identifiés comme médiateurs physiologiques de la motivation, de l'attention, des comportements intentionnels et se situent au cœur des circuits neuronaux de la récompense, tels que la dopamine ou les opioïdes (Alcaro et al., 2007). Ceux-ci, ainsi que les régions cérébrales impliquées dans le traitement des expériences subjectives et des sentiments émotionnels, sont partagés par tous les mammi-

fères et probablement de nombreux vertébrés, avec des fonctions comparables et donc vraisemblablement largement conservées au cours de l'histoire évolutive (Panksepp, 2011), suggérant que la vie des autres espèces est, comme celle des humains, parsemée de moments de plaisir, de bien-être, et d'autres sentiments subjectifs comme l'attention, l'intention ou encore la motivation. Par exemple, lorsqu'ils chantent, les oiseaux chanteurs sécrètent naturellement des opioïdes et de la dopamine, ce qui suggère qu'ils pourraient ressentir du plaisir à une telle activité (Riters, 2012).

Une perspective évolutive

Une vision plus nuancée des émotions qui émaillent la vie des animaux sauvages est également corroborée par des raisonnements fondés sur les principes de la biologie évolutive. En effet, l'extrait de Dawkins cité plus haut est tout à fait représentatif de la perspective propre à l'auteur sur le monde naturel, un monde comme une rivière sur laquelle naviguent des milliards de gènes, pilotant les organismes individuels qui ne sont que les vaisseaux éphémères et passifs de leurs gènes-pilotes, qui sont les véritables unités de sélection. La métaphore du gène égoïste sert justement à convaincre que, *du point de vue du gène*, peu importe que l'organisme ait une vie atroce ou plaisante. La seule chose qui compte, c'est sa capacité à se reproduire, et donc à transmettre et à multiplier les gènes qui le composent (Dawkins, 1990). Il faut noter qu'une telle interprétation de la sélection naturelle est loin de faire l'unanimité au sein de la communauté scientifique. En effet, sans qu'il y ait de consensus inébranlable à ce sujet, la place de l'organisme individuel dans le processus de sélection naturelle, et en particulier son rôle clé d'unité de sélection conforme à l'approche darwiniste de l'évolution naturelle, est généralement bien plus importante que ne l'admet Dawkins.

Les neurosciences ont ainsi montré que le cerveau est équipé d'un système de récompenses-punitions orienté vers des buts et relayé par le système nerveux et hormonal (Alcaro et al., 2007; Panksepp, 2011), qui permet l'association d'émotions positives ou négatives à des comportements significatifs pour la valeur adaptative des individus. Ainsi, la sélection naturelle a sélectionné une disposition à ressentir des émotions positives lorsque les individus effectuent un comportement qui a le potentiel d'augmenter leur survie ou leur reproduction, et des émotions négatives dans le cas contraire. En l'absence d'un tel système de récompense, les animaux, humains compris, perdraient toute forme de motivation – situation qui pourrait s'apparenter aux cas cliniques de dépressions pathologiques observés en psychiatrie humaine. Par exemple, la fin d'une situation de stress physiologique aigu marquant un effort physique intense, comme la course d'un animal pour échapper à un prédateur ou le saut en parachute chez l'humain, est typiquement suivie d'un pic d'endorphines typiquement associé à une sensation de bien-être (Schedlowski et al., 1995), qui pousse les individus (proie rescapée ou parachutiste) à reproduire ce comportement dans le futur (renforcement positif). La fréquence et l'intensité cumulées des émotions positives et négatives ressenties à l'échelle d'une vie animale à l'état sauvage sont

donc probablement équilibrées par ce type de mécanismes neurophysiologiques. Par extension, la sélection naturelle a favorisé l'évolution d'organismes doués pour la lutte pour la vie, ce qui se traduit physiologiquement par de fortes aptitudes motivationnelles entretenues par des systèmes de récompenses comportementales et physiologiques. Décrire la vie des animaux sauvages comme une suite de souffrances relève d'une vision déconnectée des réalités biologiques du monde sauvage, qui fait abstraction de la richesse des émotions subjectives ressenties par les individus de ces communautés, dont les comportements témoignent en permanence d'un féroce appétit à vivre.

Une perspective écologique

La vision d'une nature qui serait comme un champ de bataille de tous contre tous, cette conception de l'évolution naturelle comme une permanente « lutte pour la survie » (Darwin, 1859) entre individus notamment par la compétition et la prédation ne dresse qu'un portrait partiel des interactions des êtres vivants entre eux et avec leur milieu. Du point de vue de l'écologie, de nombreuses interactions entre organismes sont pacifiques et mutuellement bénéfiques. En 1902, le géographe et anarchiste russe Pierre Kropotkin insiste sur l'importance du mutualisme, notamment pour s'opposer au darwinisme social qui se développe au début du XX^{e} siècle :

> Dans le monde animal nous avons vu que la grande majorité des espèces vivent en société et qu'elles trouvent dans l'association leurs meilleures armes dans la lutte pour la survie : bien entendu et dans un sens largement darwinien, il ne s'agit pas simplement d'une lutte pour s'assurer des moyens de subsistance, mais d'une lutte contre les conditions naturelles défavorables aux espèces. Les espèces animales au sein desquelles la lutte individuelle a été réduite au minimum et où la pratique de l'aide mutuelle a atteint son plus grand développement sont invariablement plus nombreuses, plus prospères et les plus ouvertes au progrès. (Kropotkine, 1902/2005)

Cette intuition a depuis été largement documentée chez les espèces sociales, et étendue à des contextes interspécifiques. Les relations de mutualisme, de symbiose et d'entraide, mais aussi de facilitation et de commensalisme sont très importantes à l'échelle des communautés écologiques. Elles permettent notamment de réduire les contraintes physiques et biotiques auxquelles sont soumis les individus (Stachowicz, 2001). Qu'il s'agisse des nombreux avantages de la vie en groupe pour les relations intraspécifiques ou de la complémentarité des rôles écologiques dans les relations interspécifiques, les relations positives sont nombreuses et structurantes parce qu'elles ont tendance à améliorer la survie des individus qu'elles lient les uns aux autres, et, ce faisant, leur confèrent un avantage compétitif. Si une grande majorité des interactions positives aujourd'hui étudiées concernent des bactéries, des plantes ou des invertébrés, les animaux vertébrés sont également concernés, d'abord au sein de toutes les espèces sociales, mais également de façon surprenante entre des individus d'es-

pèces très éloignées, comme le pluvian du Nil (*Pluvianus aegyptius*) qui trouve sa nourriture entre les dents des crocodiles, le labre nettoyeur (*Labroides dimidiatus*) qui débarrasse de nombreuses autres espèces de poissons de leurs parasites en les mangeant ou encore l'indicateur, petit oiseau tropical arboricole, qui guide les ratels vers les nids d'abeilles dont il dégustera la cire et les larves après le passage du mustélidé exclusivement intéressé par le miel.

À plus grande échelle, la résilience des communautés biotiques laisse penser que les interactions positives et négatives s'équilibrent d'une façon plutôt avantageuse pour les individus, ne serait-ce qu'en assurant la durabilité et la régularité de leur habitat et de leur accès aux ressources. C'est ainsi que l'on observe par exemple que même si la présence de grands prédateurs dans un milieu impose un stress important aux ongulés, sa disparition et l'augmentation subséquente de la densité des herbivores peut également avoir des effets très négatifs sur la qualité de vie des proies : surpâturage et raréfaction des ressources alimentaires, plus grande circulation des éléments pathogènes liée à la promiscuité, etc.

Admettons néanmoins, et nul ne pourrait le contester, qu'il y a de la souffrance dans le monde sauvage et qu'une partie au moins de cette souffrance peut être réduite sans entraîner de souffrances plus grandes encore. La question demeure de savoir si oui ou non, et, le cas échéant, quand et comment il convient d'intervenir pour réduire ces souffrances. Après avoir discuté la troisième prémisse de l'argument relative à l'ubiquité de la souffrance, nous allons examiner la première prémisse, selon laquelle il serait moralement requis de réduire les souffrances.

B. Non-interférence et souveraineté (critique de la prémisse 1)

La première prémisse de l'argument interventionniste – Il est moralement requis de réduire les souffrances des êtres sensibles – est clairement utilitariste. Il s'agit dans nos actions ou nos règles d'action de viser les meilleures conséquences possibles, l'utilité de ces conséquences s'évaluant à l'aune des quantités de souffrance et de plaisir résultant de nos actions (Singer, 1975/2015). Sans retracer l'abondante littérature et les nombreux arguments qui ont été développés pour défendre ou critiquer cette version utilitariste de l'éthique animale, il convient de souligner certaines limites de cette approche qui sont justement rendues manifestes par la question de la réduction de la souffrance chez les animaux sauvages.

D'une part, les animaux ont d'autres intérêts que celui de ne pas souffrir ou d'éprouver du plaisir qu'il conviendrait de prendre en compte dans la délibération morale. Ainsi, selon Nussbaum :

> L'idée même d'un despotisme bienveillant des humains envers les animaux est répugnante d'un point de vue moral, car la souveraineté des espèces, comme celle des nations, a un poids moral. S'épanouir, pour une créature, c'est notamment être capable de régler certains

> problèmes de façon autonome, sans intervention humaine, même si celle-ci est bienveillante. (Nussbaum, 2006, traduit par les autrices)

On peut remarquer qu'il y a dans ce passage une certaine confusion entre l'individu – ici la « créature » – et le groupe – « l'espèce ». Mais concentrons-nous sur la seconde partie de l'extrait, qui a trait à la capacité de l'animal à mener sa vie de façon autonome. Nous reviendrons sur la question de la souveraineté de l'espèce dans la section suivante. L'argument de l'épanouissement est repris et développé par Jennifer Everett (2001), qui propose que les animaux ne peuvent s'épanouir qu'à condition d'avoir la possibilité d'agir conformément aux traits et aux capacités qui leur sont propres. Or l'évolution de telles capacités est sous-tendue par des mécanismes écologiques qui génèrent nécessairement de la souffrance, comme la prédation ou la maladie. Une volonté de soustraire collectivement et systématiquement les populations à de tels mécanismes se traduirait nécessairement par une atteinte grave aux libertés des individus qui la composent, comme si l'on envisageait par exemple de confiner proies et prédateurs dans des espaces distincts. En revanche, une intervention ponctuelle dans un cas individuel bien particulier, comme libérer un flamand rose pris dans les glaces, serait acceptable à la condition qu'elle n'affecte pas les dynamiques écologiques et évolutives de la population concernée à travers un remodelage systématique de la nature.

Par ailleurs, comme le suggèrent les éthiques animales déontologiques développées notamment par Gary Francione (1999) ou Tom Regan (1983), nos responsabilités envers les animaux non humains ne s'expriment pas nécessairement en termes conséquentialistes. Dans un cadre déontologique, il ne s'agit plus de quantifier la souffrance afin de la réduire, mais de respecter certains droits moraux fondamentaux d'individus sensibles qui sont considérés comme sujets d'une vie, orientés vers des buts (Regan, 1983) ou qui ont un irréductible intérêt à vivre (Francione, 1996). Dans de telles approches, le cœur de nos responsabilités vis-à-vis des animaux non humains est défini par leurs droits à vivre et à être traités avec respect. Le critère d'intervention central relatif aux décisions éthiques concernant les animaux sauvages n'est donc plus forcément le soulagement de la souffrance, mais le respect de l'autonomie et de l'indépendance, qui se traduira plus souvent par un principe de non-interférence.

Ce principe de non-interférence semble cependant entrer en contradiction avec l'importance morale accordée à la vie des animaux, à leurs droits de base et à leur liberté. La prise de partie en faveur du non-interventionnisme a donc été étayée par différents arguments. Par exemple, Regan propose que l'obligation de lutter contre l'injustice l'emporte sur l'obligation de lutter contre l'infortune (Regan, 1983), tandis que Francione note que le devoir d'assistance à une personne en danger ne figure pas dans le Droit américain (Francione, 1999), et en conclut que le devoir d'intervention est facultatif en ce qui concerne les animaux. Selon Clare Palmer, qui insiste sur la différence entre faire du mal et ne pas venir en aide, le devoir d'assistance est déterminé par notre degré de proximité (émotionnel, causal, spatial) vis-à-vis des individus concernés. Les animaux sauvages étant par définition éloignés des humains et n'entretenant avec eux que des rela-

tions sporadiques et accidentelles, le devoir d'assistance à leur endroit serait donc relativement faible en comparaison de ce qu'il serait vis-à-vis des animaux domestiques (Palmer, 2010).

Ces réponses sont celles que peut produire l'éthique animale elle-même, considérée comme une réflexion sur les devoirs des agents moraux vis-à-vis des êtres sensibles en tant qu'individus. Mais notre relation aux animaux sauvages peut être envisagée dans une perspective non plus seulement éthique, mais également politique, comme le suggèrent Sue Donaldson et Will Kymlicka dans *Zoopolis* (2013). Il ne s'agit alors plus seulement de considérer les animaux comme sujets moraux individuels, mais de s'interroger sur ce qu'ils représentent politiquement en tant que communauté. Donaldson et Kymlicka défendent l'idée selon laquelle les animaux sauvages forment des communautés autonomes et souveraines, considérant que la reconnaissance de cette souveraineté est nécessaire à l'exercice de leur autonomie et donc de leur épanouissement. Cette souveraineté implique que les animaux sauvages soient protégés des interférences négatives directes, comme la chasse, ou indirectes comme les dérangements ou la destruction de leur habitat. Ils proposent que nos relations avec les animaux sauvages soient régulées par un cadre analogue à celui proposé entre communautés humaines autonomes dans un contexte de relations internationales, initialement établi en vue de protéger les intérêts – notamment territoriaux, sociaux et culturels – des nations et des communautés les plus faibles contre l'influence indue des nations les plus puissantes. Ce type de cadre, fondamentalement anti-impérialiste, implique en tout premier lieu le respect de l'autonomie des membres de ces communautés et de leur capacité à vivre, à relever leurs propres défis et à façonner leur communauté sans intervention extérieure; transposé à notre relation aux animaux sauvages, il proscrit donc absolument l'idée d'une intendance à grande échelle des conditions de vie des animaux et prône un principe général de non-intervention. Dans ce cadre général, Donaldson et Kymlicka admettent néanmoins que certaines interventions humaines ponctuelles peuvent être requises, par exemple afin d'aider des animaux sauvages à conjuguer avec des évènements extrêmes tels que des catastrophes naturelles ou des épidémies dévastatrices.

Si l'on confronte cet argument à la question du bien-fondé d'une intervention dans le cas de la vague de froid qui sévit en Camargue en 2012, la question se pose alors de savoir si elle relève de l'intervention « humanitaire » ponctuelle ou de l'ingérence dans un monde régi par des contraintes naturelles auxquelles nous ne devons pas nous substituer. Mais avant de trancher sur ce point, il convient de souligner, à la suite d'Oscar Horta (2013) ainsi que d'Andrée-Anne Cormier et Mateo Rossi (2016), une faiblesse de l'analogie entre communautés humaines souveraines et d'éventuelles communautés formées par les animaux sauvages, en faisant fi de l'importance des divergences d'intérêts entre individus dans le monde sauvage. En effet, la prédation, le parasitisme, la compétition entre espèces et entre individus structurent les communautés sauvages là où l'on peut considérer qu'il y a, au sein des communautés humaines, une forme institutionnalisée de convergence d'intérêts et de soucis pour le bien commun. Pour Horta,

si l'on devait étendre les logiques de la politique internationale à notre rapport avec les animaux sauvages, c'est davantage à la notion d'intervention humanitaire en contexte de guerre civile généralisée qu'il faudrait avoir recours qu'à celle de respect de la souveraineté des peuples. En effet, on peut raisonnablement douter que des « communautés » où la survie de certains est systématiquement menacée par d'autres puissent être jugées compétentes à s'autodéterminer dans un sens analogue à celui qu'on reconnaît aux communautés politiques humaines. En s'appuyant sur une analogie forte entre communautés humaines et communautés écologiques non humaines, Donaldson et Kymlicka donnent prise à la critique antispéciste. Si l'on doit se comporter vis-à-vis des communautés non humaines sauvages comme on devrait le faire vis-à-vis de communautés humaines distantes, alors justement nous avons la responsabilité d'intervenir lorsque ces communautés échouent à protéger certains droits ou intérêts fondamentaux de leurs membres. C'est ici la tension entre la considération des intérêts individuels des humains dans des sociétés oppressives ou des non-humains dans le monde sauvage et la considération pour les communautés dans leur ensemble qui compromet la conclusion non interventionniste des auteurs.

3. AU-DELÀ DES INDIVIDUS NON-HUMAINS

En proposant d'envisager nos responsabilités vis-à-vis du monde sauvage dans un registre politique plutôt que seulement moral, Donaldson et Kymlicka ouvrent pourtant une piste très prometteuse, mais qu'ils n'explorent peut-être pas jusqu'à son terme. Car, penser politiquement notre relation aux animaux sauvages, c'est la penser comme une relation non plus seulement à des individus, mais aussi à des communautés ayant leur propre fonctionnement, leur propre territoire et visant des finalités qui nous échappent radicalement.

> En tant que citoyen.nes d'un État, nous sommes libres de visiter et même d'habiter le territoire d'un autre État souverain, mais nous ne sommes pas libres de le contrôler, de l'envahir ou de le remodeler unilatéralement en fonction de nos besoins et de nos désirs, ou de notre propre conception de ses besoins et de ses désirs. […] De façon similaire, reconnaître un droit à la souveraineté des animaux sauvages sur leur habitat, c'est les considérer comme des entités souveraines reposant sur des revendications similaires d'autorité. Cela implique que lorsque nous visitons leur territoire, nous le fassions non pas en tant qu'intendants ou que gestionnaires, mais en tant que visiteurs d'un territoire étranger. (Donaldson and Kymlicka, 2013, traduit par les autrices)

Car s'il y a quelque chose comme une compétence à la souveraineté dans le monde sauvage, plus que par les individus, elle est portée par les communautés elles-mêmes. Individuellement, les animaux sont capables de se maintenir en vie, de se reproduire, les plus sociaux d'entre eux savent également protéger leurs proches. Cela peut définir leur autonomie individuelle ou, éventuellement, leur souveraineté à l'échelle des petits groupes sociaux intraspécifique. Mais

étant donné le caractère structurant de la prédation, du parasitisme, de la pénurie des ressources, si les communautés souveraines auxquelles font référence Donaldson et Kymlicka lorsqu'ils considèrent nos relations avec le monde sauvage sont des communautés biotiques interspécifiques complexes, alors c'est à l'échelle de la communauté dans son ensemble que l'on doit chercher les signes de compétence à la souveraineté. La résilience, la diversité, la capacité à préserver son identité face au changement sont autant de marqueurs du caractère auto-organisé des communautés biotiques sur lesquels asseoir l'idée de communautés souveraines.

Finalement, ce passage de l'éthique au politique dans *Zoopolis* ouvre une voie de réconciliation entre l'individualisme qui caractérise les éthiques animales et le holisme qui caractérise les éthiques écocentrées (Callicott, 1980). Dans cette dernière section, nous verrons comment la prise en compte de valeurs écocentrées peut, dans une perspective pluraliste, enrichir notre appréhension du problème de la souffrance des animaux sauvages.

A. Des valeurs écocentrées

Individualisme vs holisme

Déjà identifié il y a longtemps par J. Baird Callicott (1980) puis réaffirmé à de nombreuses reprises (Sagoff, 1984), le point de divergence entre éthiques animales et éthiques environnementales repose principalement sur la différence de leur centrage respectif, sur des organismes individuels pour les premières ou sur des entités collectives pour les secondes. Dans le débat sur l'interventionnisme, cette divergence se réaffirme en opposant des partisans d'une intervention justifiée par la détresse d'êtres sensibles individuels et ceux qui défendent des valeurs qui ne sont pas centrées sur les individus, comme la naturalité ou l'intégrité écologique. Nous ne souhaitons pas redéployer cette vieille querelle entre approche individualiste et holiste de nos responsabilités vis-à-vis du monde naturel, mais insister sur le fait que la proposition de Donaldson et Kymlicka est une façon de réhabiliter les intuitions fortes des éthiques écocentrées, et notamment la conception holiste d'une communauté biotique irréductible à la somme des individus qui la composent et dotée d'un bien propre distinct de celui de ses parties. Comme le reconnaissent bien des éthiciens de l'environnement, les entités collectives qui les intéressent ne se substituent pas aux individus comme sujets de considération morale, mais s'y ajoutent :

> L'éthique de la Terre est un addenda à nos éthiques humaines familières, elle ne s'y substitue pas. Mon objectif principal dans cette étude est d'unifier ces éthiques familières avec l'éthique de la Terre et même l'éthique de la planète pour articuler une théorie éthique qui les embrasserait toutes. (Callicott, 2014, traduit par les autrices)

Même si Callicott lui-même se refuse à qualifier sa démarche de pluraliste, l'analogie de Donaldson et Kymlicka entre nos relations aux communautés écolo-

giques sauvages et aux communautés humaines souveraines permet de mieux cerner l'articulation nécessaire entre des considérations centrées sur les intérêts individuels et des considérations centrées sur les collectifs. Les individus ont un intérêt à vivre dans des communautés souveraines, mais en retour, les contours mêmes de ce qui constitue les intérêts individuels dépendent de leur insertion dans la communauté. Il n'y a pas lieu de choisir entre le respect des individus et celui des communautés, mais plutôt d'équilibrer nos responsabilités de façon à ménager au mieux les uns et les autres.

Dans le cas qui nous occupe concernant la réduction de la souffrance des animaux sauvages, plutôt que de nous aider à trancher en faveur de l'une ou l'autre position, l'expérience vécue de la confrontation personnelle à la souffrance d'un animal sauvage permet d'éprouver directement la complémentarité des approches individualistes et holistes pour appréhender la complexité de la situation à laquelle on fait face. Alors que l'assistance ponctuelle à un individu en détresse contribue non seulement à réduire ses souffrances, mais lui permet aussi de retrouver son autonomie, des interventions massives et régulières affecteraient l'intégrité et l'identité même de la communauté biotique sauvage.

Wilderness et naturalité

Il y a une valeur chère aux environnementalistes qui vient immédiatement à l'esprit lorsqu'il est question d'évaluer notre devoir d'intervention dans le monde sauvage, c'est celle de la naturalité ou du caractère sauvage des entités naturelles. L'éthique environnementale s'est beaucoup penchée sur la question de la *wilderness* (Callicott et Nelson, 1998; Nelson et Callicott, 2008) qui se trouve réactivée aujourd'hui dans plusieurs publications. Or cette valeur, portée par des intuitions fortes de nombreux conservationnistes et environnementalistes, est récalcitrante à la distinction entre individualisme et holisme. Le caractère sauvage peut être attribué à des individus autant qu'à des collectifs et se trouve valorisé également qu'il s'agisse du statut particulier de l'animal sauvage autonome ou de l'écosystème sauvage indépendant. Par ailleurs, cette valeur paraît relationnelle, mais dans un sens particulier, pour ainsi dire en creux, prenant sa source non pas dans une relation spécifique des humains avec des entités naturelles, mais dans l'absence de telle relation.

Ned Hettinger défend par exemple le respect pour la nature indépendante (Hettinger, ce dossier, p. 65-84). Bien entendu, la naturalité n'est pas une qualité facile à définir et il faut la considérer en termes de degrés. Une entité est plus ou moins naturelle selon qu'elle est plus ou moins influencée par les activités humaines. Il y a différentes raisons de valoriser la nature indépendante, certaines centrées sur les êtres humains, comme source de contentement esthétique, d'inspiration ou de connaissance; d'autres centrées sur des individus non humains, comme forme privilégiée d'exercice de l'autonomie; d'autres encore centrées sur des entités écologiques supra-individuelles, liées à l'intégrité écologique, l'endémisme ou la spécificité de l'histoire évolutive.

Or une raison de valoriser et de préserver la nature sauvage ou indépendante est le simple fait qu'elle se raréfie au point où elle disparaîtra peut-être bientôt. En effet, si le débat sur la valeur de la naturalité est aujourd'hui réactivé (Maris 2015; Maris 2018; Minteer and Pyne, 2015; Wuerthner et al., 2014), c'est en partie pour répondre à un discours de plus en plus affirmé sur la mort de la nature qui légitimerait pour de bon l'emprise des activités humaines sur l'ensemble du système terrestre. Or étonnamment, ce discours prométhéen qui érige l'âge de l'Anthropocène comme celui de l'artificialisation totale du monde est reçu de façon assez similaire dans une version environnementaliste et dans une version animaliste.

B. Anthropocène de la prospérité et anthropocène de la compassion

Les défenseurs de l'interventionnisme dans le cadre d'une biologie de la compassion à grande échelle présentent une version intéressante d'un discours plus général concernant la centralité des activités humaines dans le monde. Ce faisant, en dépit des distances marquées et revendiquées qu'ils souhaitent tous prendre vis-à-vis de l'environnementalisme, ils se retrouvent très proches d'un certain projet environnementaliste qui se proclame « écomoderniste » (Asafu-Adjaye et al., 2015) ou qui en appelle à une « nouvelle Conservation » (Kareiva et al., 2012). En effet, pour les uns comme pour les autres il s'agit de reconnaître l'incroyable puissance humaine et d'en user de façon éclairée afin de piloter les systèmes naturels, soit pour optimiser la durabilité et l'épanouissement des sociétés humaines dans le cas de la nouvelle conservation, soit pour soulager les souffrances de tous les êtres sensibles pour les partisan.es de l'interventionnisme. Loin de regretter l'influence globale des activités humaines, et contre l'Anthropocène aveugle et insoutenable de la crise écologique, ils invitent donc à s'appuyer sur la technologie et l'innovation, mais également à développer de nouvelles formes de gouvernance qui canaliseront ces potentialités au profit d'un Anthropocène de la durabilité pour les un.es, ou d'un Anthropocène de la compassion pour les autres.

Les propositions les plus ambitieuses de McMahan ou Pearce en termes d'ingénierie génétique, par exemple, font écho à celles de certain.es environnementalistes concernant les capacités de la géo-ingénierie à intervenir à grande échelle sur les cycles planétaires pour influencer le climat. Le père du terme « Anthropocène », Paul Crutzen, écrit ainsi :

> Une tâche colossale attend les scientifiques et les ingénieur.es, qui est de guider la société vers une gestion environnementale durable dans l'ère de l'Anthropocène. Cela va nécessiter des comportements humains appropriés à toutes les échelles, et pourrait impliquer de grands projets internationaux de géo-ingénierie, par exemple pour optimiser le climat. (Crutzen, 2002, traduit par les autrices)

Dans les deux cas, le projet sous-jacent est d'ériger l'humain en démiurge absolu, faire de lui, ne serait-ce que de façon fictive à travers le pari de l'infaillibilité de

ses interventions, le juge omniscient et l'architecte omnipotent d'une planète sous son entière tutelle.

On peut également remarquer l'indifférence de ces auteurs pour la dimension politique des enjeux qu'ils soulèvent. Il n'est pas toujours facile de savoir s'il s'agit de simples angles morts de leur pensée ou si leur silence au sujet des institutions et des modes de gouvernance susceptibles de concrétiser leurs projets dénote une méfiance de ces penseurs vis-à-vis des systèmes démocratiques. Chez les avocat.es d'un anthropocène de la durabilité, on voit notamment se dessiner une forme de tyrannie des expert.es, parfois explicitement assumée comme chez l'inventeur de l'hypothèse Gaïa, James Lovelock :

> Il se peut que nous réalisions dans quelques années, comme nous l'avons fait en 1939, que la démocratie doit être temporairement suspendue et qu'il nous faille accepter un régime de discipline, à l'image de celui qui fit du Royaume-Uni un refuge précaire, mais légitime à la civilisation. La survie nécessite un degré rare de compréhension et de *leadership*, et elle peut requérir, comme en temps de guerre, la suspension de la gouvernance démocratique le temps de faire face à l'urgence. (Lovelock, 2006, traduit par les autrices)

Il n'est plus question de démocratie, d'altérité, de diversité des représentations et des valeurs. L'urgence de la crise environnementale pour les un.es et l'impératif hédoniste pour les autres justifient que des modifications majeures et irréversibles des conditions d'existence soient décidées par le haut, par des intendant.es humain.es autoproclamé.es.

La destruction des milieux naturels et la négation des intérêts des animaux non humains ont cela de commun qu'elles sont les fruits d'une vision du monde occidentale anthropocentrée qui érige l'être humain, et plus particulièrement l'homme moderne occidental, en maître et possesseur de la nature. Que le maître devienne éclairé et guide la planète vers un développement dit durable, qu'il devienne bienveillant et assure à toutes les créatures sensibles une vie plaisante et pacifiée, il n'en demeure pas moins le maître et le possesseur. Contre cette vision descendante et, dans une certaine mesure, totalisante d'une nature entièrement rationalisée et gérée dans le but d'optimiser la satisfaction des intérêts des humains, voir des animaux non humains, nous défendons la nécessité de multiplier les cadres et les points de vue.

C. Pluralisme axiologique et politique

Contre la prétention à un principe général capable d'appréhender – et de résoudre – l'ensemble des problèmes que posent nos décisions d'intervenir dans la nature sauvage ou de s'en abstenir, nous pensons qu'une approche pluraliste, attentive à la diversité des points de vue et des valeurs en jeu, est nécessaire (Stone, 1987). En adoptant un cadre pluraliste, il ne s'agit plus de choisir entre un souci pour les animaux et un souci pour la nature, mais de tenir en tension l'un

et l'autre, acceptant la contrainte que cela représente de ne pas pouvoir se fier à un principe unique pour déterminer l'action juste, mais prenant chaque fois la responsabilité, et donc le risque, de délibérer et donc de se tromper. Mais ne pas choisir entre des principes qui peuvent s'avérer parfois contradictoires n'implique pas de s'en remettre à l'arbitraire ou à l'opportunisme.

Pour évaluer la pertinence d'intervenir pour réduire la souffrance des animaux sauvages, il faut en effet trouver un compromis entre différentes valeurs : l'intérêt à ne pas souffrir et l'autonomie des animaux, la préservation de la naturalité ou de l'intégrité de la communauté biotique, mais également des valeurs humaines comme le respect de ses propres émotions et une forme d'humilité ou de déférence vis-à-vis d'un monde qui nous est étranger et dont nous ne connaissons pas les règles. Ces différentes valeurs ne seront pas les mêmes dans toutes les circonstances, et leur poids respectif dans une délibération globale variera inévitablement d'une situation à l'autre (Bovenkerk et al., 2003). Il est donc impossible de délivrer une conclusion définitive à la question abstraite de la pertinence d'une intervention en général. Il s'agira de peser, de délibérer, éventuellement d'impliquer d'autres personnes ou parties dans la délibération, parce qu'elles ont une expertise pertinente ou qu'elles sont parties prenantes des enjeux dont il est question. Cela n'est d'ailleurs pas fondamentalement différent de ce à quoi sont habitué.es les gestionnaires d'espaces protégés, qui composent bien souvent entre différentes valeurs (biodiversité, naturalité, efficacité), différentes visions du monde (anthropocentrée, écocentrée) et différents intérêts (écologiques, touristiques, économiques). Mais à la gamme de leurs considérations habituelles, la question du bien-être d'animaux non humains individuels mériteraient de prendre une part plus explicite qu'elle ne l'a été jusqu'ici.

L'intérêt de cette discussion pour celles et ceux qui s'intéressent à la protection de la nature et à l'éthique environnementale, c'est que la question de l'opportunité d'intervenir dans le monde naturel est posée sur de nouvelles bases. En effet, comme le souligne Oscar Horta (2010), les interventions dans le monde sauvage sont nombreuses. Ceux qui s'opposent à des interventions massives en vue de réduire les souffrances animales ne peuvent le faire sous le simple prétexte que l'on doit laisser la nature suivre son libre cours alors qu'ils acceptent de bon gré d'intervenir lorsque cela vise les objectifs traditionnels de la conservation (protection, mais aussi renforcement, voire réintroduction de populations vulnérables, restauration écologique, gestion, voire éradication des populations exotiques envahissantes, etc.). Plutôt que d'être simplement écartée ou décrédibilisée, la question de la souffrance animale devrait faire partie du débat et être prise en compte par la conservation au même titre que d'autres considérations.

CONCLUSION

Revenons maintenant à nos étangs de Camargue de février 2012. Que fallait-il faire pour ces flamants pris dans la glace? Comment convenait-il de se comporter dans une situation si tragique? Il n'y a probablement pas de réponse univoque, mais un faisceau de considérations et des responsabilités différentes en fonction

des personnes, de leurs engagements, et de leur relation à la situation. Cet exemple illustre la nécessité d'appréhender nos relations et nos responsabilités vis-à-vis de la nature et des animaux sauvages de façon pluraliste. Dans cet épisode, il n'y a pas un problème moral, mais une diversité de situations et de responsabilités :

- La rencontre personnelle avec un animal agonisant qui crée un lien sensible immédiat et dont découle un devoir d'assistance.

- Le rôle des gestionnaires de milieux naturels de protéger l'intégrité des milieux naturels, de permettre aux écosystèmes de maintenir ou de retrouver leur propre trajectoire d'évolution en évitant une trop grande ingérence ou en calibrant celle-ci de façon à ce qu'elle ne soit que ponctuelle.

- Notre responsabilité en tant que société face à l'augmentation de la fréquence et de l'intensité des évènements climatiques extrêmes dans un contexte de dérèglement climatique d'origine anthropique qui nous oblige à prendre nos responsabilités et à tout faire pour réduire et mitiger les émissions de gaz à effet de serre afin d'éviter que la situation ne s'empire. Parallèlement, il convient de favoriser les options d'adaptation à ce nouveau régime climatique qui sont en phase avec l'autonomie des individus et des communautés.

C'est peut-être là une voie inattendue de réconciliation entre les éthiques animale et environnementale : une approche non interventionniste, qui fait le pari de l'humilité et de la discrétion et qui invite les humains à quitter pour de bon le centre de la scène dans les quelques reliques de nature sauvage dont ils n'ont pas encore pris totalement le contrôle.

Le débat sur l'interventionnisme dans le monde sauvage n'a peut-être pas véritablement eu lieu, en partie parce qu'il est confortable, du point de vue de l'argumentation, de prendre le point de vue extrême de part et d'autre de la discussion et de refuser d'entrer en dialogue tant les conclusions de ses adversaires semblent inappropriées. Il est tout à fait prévisible qu'une personne engagée dans la protection de la nature ne juge même pas utile de répondre à celui qui envisage de reprogrammer les prédateurs pour en faire des herbivores et inversement, on ne s'étonnera pas que ceux qui se dévouent à la cause animale ne trouvent pas de prise pour une discussion sereine avec quelqu'un qui se satisferait de dire que la souffrance des animaux ne peut être mauvaise puisqu'elle est naturelle. Et pourtant, respecter les animaux non humains, c'est tout à la fois reconnaître leur altérité véritable, et ce faisant s'abstenir de choisir pour eux quel genre de vie il leur conviendrait de vivre, et respecter leur territoire, leur habitat, leurs conditions d'existence, ce qui implique de protéger les milieux naturels qu'ils produisent et dont ils dépendent (Bekoff and Pierce, 2017). Les conservationnistes et les écologues sont directement interpellés par ces enjeux. On parle depuis quelques années d'une approche compassionnelle de la conservation (Bekoff, 2013), ouvrant une voie pluraliste, non anthropocentrée, qui intègre la considération pour le bien-être animal dans les enjeux de protection de la nature et de conservation de la biodiversité. Nous espérons que cet article contribue à prolonger et à diffuser cette discussion qui doit se poursuivre entre éthique animale et conservation.

REMERCIEMENTS

Ce travail a été initié lors d'un séjour de Virginie Maris au Centre de recherche en éthique à Montréal et plus particulièrement au sein du GREEA (Groupe de recherche en éthique environnementale et animale). VM remercie tous les membres de ce groupe, notamment Sophia Rousseau-Mermans, Valéry Giroux, Antoine Dussault, Gregory Mikkelson, Angie Pepper et Christine Tappolet. Son séjour au Canada était financé par le Centre de recherche en éthique et par le programme de soutien à la mobilité de l'INSHS. L'échange entre les deux autrices s'est amorcé à la faveur d'un message publié par Virginie Maris sur la liste de diffusion *evolfrance*. Les autrices ont grandement bénéficié des discussions qui s'ensuivirent, et tiennent à remercier tout particulièrement François Bonhomme, Julie Deter, Simon Fellou, Bernard Godelle, Thomas Lenormand, Guy Rodet, Abel Souriau et Michel Veuille. Contribution ISEM 2018-157.

BIBLIOGRAPHIE

Alcaro, A., Huber, R. et J. Panksepp, « Behavioral Functions of the Mesolimbic Dopaminergic System : An Affective Neuroethological Perspective, » *Brain Research Reviews* 2007, vol. 56, no. 2, p. 283-321.

Asafu-Adjaye, J., Blomqvist, L., Brand, S. et al., « An Ecomodernist Manifesto, » 2015, [http://www.ecomodernism.org/], consulté le 2015/11/10.

Bartal, IB-A., Decety, J. et P. Mason, « Empathy and Pro-Social Behavior in Rats, » *Science*, 2011, vol. 334, no. 6061, p. 1427-1430.

Bekoff, M., *Ignoring Nature No More : The Case for Compassionate Conservation*, Chicago, The University of Chicago Press, 2013.

Bekoff, M. et J. Pierce, *The Animals' Agenda : Freedom, Compassion, and Coexistence in the Human Age*, Boston, Beacon Press, 2017.

Bovenkerk, B., Stafleu, F., Tramper, R. et al., « To Act or Not to Act? Sheltering Animals From the Wild: A Pluralistic Account of a Conflict Between Animal and Environmental Ethics, » *Ethics, Place and Environment*, 2003, vol. 6, no. 1, p. 13-26.

Burkett, JP., Andari, E., Johnson, ZV. et al., « Oxytocin-dependent Consolation Behavior in Rodents, » *Science*, 2016, vol. 351, no. 6271, p. 375-378.

Callicott, JB., « Animal Liberation : A Triangular Affair, » *Environmental Ethics*, 1980, vol. 2, no. 4, p. 311-338.

———, *Thinking Like a Planet : The Land Ethic and the Earth Ethic*, New York, Oxford University Press, 2014.

———, et M.P. Nelson, (dir.), *The Great New Wilderness Debate*, Athènes, University of Georgia Press, 1998.

Cheney, D. et R. Seyfarth, *Baboon Metaphysics – The Evolution of a Social Mind*, Chicago, University of Chicago Press, 2007.

Clay, Z., Smith, CL. et DT. Blumstein, « Food-associated Vocalizations in Mammals and Birds : What do These Calls Really Mean?, » *Animal Behaviour*, 2012, vol. 83, no. 2, p. 323-330.

Clutton-Brock, T., « Breeding Together : Kin Selection and Mutualism in Cooperative Vertebrates, » *Science*, 2002, vol. 296, no. 5565, p. 69-72.

Cormier, A-A. et M. Rossi, « The Problem of Predation in Zoopolis, » *Journal of Applied Philosophy*, 2016, doi:10.1111/japp.12250.

Crutzen, PJ., « Geology of Mankind », *Nature*, 2002, no. 415, p. 23.

Darwin, C., *On The Origin of Species by Means of Natural Selection, or The Preservation of Favoured Races in The Struggle for Life*, Londres, Watts & Co, 1859.

Dawkins, R., *The Selfish Gene*, 2e édition, New York, Oxford University Press, 1990.

———, *River Out of Eden : A Darwinian View of Life*, New York, Basic Books, 1996.
De Waal, F., *La politique du chimpanzé*, Paris, Odile Jacob, 1995.

———, *The Age of Empathy – Nature's Lessons for a Kinder Society*, New York, Broadway Books, 2009.

Donaldson, S. et W. Kymlicka, *Zoopolis : A Political Theory of Animal Rights*, New York, Oxford University Press, 2013.

Engh, AL., JC. Beehner, TJ. Bergman et al., « Behavioural and Hormonal Responses to Predation in Female Chacma Baboons (*Papio hamadryas ursinus*), » *Proceedings of the Royal Society B*, 2006, vol. 273, no. 1587, p. 707-712.

Everett, J., « Environmental Ethics, Animal Welfarism, and the Problem of Predation : A Bambi Lover's Respect For Nature, » *Ethics & the Environment*, 2001, vol. 6, no. 1, p. 42-67.

Feldman, R., « Oxytocin and Social Affiliation in Humans, » *Hormones and Behavior*, 2012, vol. 61, no. 3, p. 380-391.

Francione, G., « Wildlife and Animal Rights », *in* Cohn P. (dir), *Ethics and Wildlife*, Lewiston, Edwin Mellen Press, 1999.

Francione, GL., *Rain Without Thunder : The Ideology of the Animal Rights Movement*, Philadelphia, Temple University Press, 1996.

Hadley, J., « The Duty to Aid Nonhuman Animals in Dire Need, » *Journal of Applied Philosophy*, 2006, vol. 23, no. 4, p. 445-451.

Hettinger, N., « Bambi Lovers Versus Tree Huggers: A Critique of Rolston's Environmental Ethics, » *Environmental Ethics*, 1994, vol. 16, no 1, p. 3-20.

Hiller, J., « Speculations on the Links Between Feelings, Emotions and Sexual Behaviour : Are Vasopressin and Oxytocin Involved?, » *Sexual and Relationship Therapy*, 2004, vol. 19, no. 4, p. 393-412.

Horta, O., « The Ethics of the Ecology of Fear against the Nonspeciesist Paradigm : A Shift in the Aims of Intervention in Nature, » *Between the Species*, 2010, vol. 13, no. 10, p. 163-187.

———, « Zoopolis, Interventions and the State of Nature,» *Law, Ethics and Philosophy*, 2013, vol. 1, p. 113-125.

Johannsen, K., « Animal Rights and the Problem of r-Strategists, » *Ethical Theory and Moral Practice*, 2017, vol. 20, no. 2, p. 333-345.

Kareiva, P., M. Marvieret et R. Lalasz, « Conservation in the Anthropocene – Beyond Solitude and Fragility, » 2012, *Breakthrough Journal*, [http://thebreakthrough.org/index.php/journal/past-issues/issue-2/conservation-in-the-anthropocene], consulté le 2015/11/12.

Kropotkine, P., *L'entraide : un facteur de l'évolution*, Montréal, Écosociété, 2005.

Lovelock, J., *The Revenge of Gaia*, New York, Basic Books, 2006.

Maris, V., *Nature à vendre : les limites des services écosystémiques*, Versailles, Quae éditions, 2014.

———, « Back to the Holocene – A Conceptual, and Possibly Practical, Return to a Nature not Intended for Humans, » *in* Hamilton, C., F. Gemenne et C. Bonneuil (dir.), *The Anthropocene and the Global Environmental Crisis : Rethinking Modernity in a New Epoch*, Londres, Routledge, 2015, p. 123-133.

———, *La part sauvage du monde : penser la nature dans l'Anthropocène*, Paris, Seuil, 2018.

McMahan, J., « The Moral Problem of Predation, » *in* Chignell, A., T. Cuneo et MC. Halteman (dir.), *Philosophy Comes to Dinner : Arguments about the Ethics of Eating*, Londres, Routledge, 2015, p. 268-294.

Mill, JS., *Nature*, Paris, La Découverte, 2003.

Minteer, BA. et SJ. Pyne, *After Preservation – Saving American Nature in the Age of Humans*, Chicago, University of Chicago Press, 2015.

Moen, OM., « View of The Ethics of Wild Animal Suffering, » *Etikk i praksis - Nordic Journal of Applied Ethics*, 2016, vol. 10, no. 1, p. 91-104.

Nelson, MP. et JB. Callicott (dir.), *The Wilderness Debate Rages On : Continuing the Great New Wilderness Debate*, Athènes, University of Georgia Press, 2008.

Ng, Y-K., « Towards Welfare Biology : Evolutionary Economics of Animal Consciousness and Suffering, » *Biology and Philosophy*, 1995, vol. 10, no. 3, p. 255-285.

Nussbaum, MC., *Frontiers of Justice : Disability, Nationality, Species Membership*, Cambridge, Belknap Press, 2006.

Nussey, DH., H. Froy, J-F. Lemaitre et al., « Senescence in Natural Populations of Animals : Widespread Evidence and its Implications for Bio-gerontology, » *Ageing Research Reviews*, 2013, vol. 12, no. 1, dossier « Invertebrate Models of Aging », p. 214-225.

Palmer, C., *Animal Ethics in Context*, New York, Columbia University Press, 2010.

Panksepp, J., « The Basic Emotional Circuits of Mammalian Brains : Do Animals Have Affective Lives?, » *Neuroscience & Biobehavioral Reviews*, 2011, vol. 35, no. 9. Dossier « Pioneering Research in Affective Neuroscience : Celebrating the Work of Dr. Jaak Panksepp », p. 1791-1804.

Pearce, D., « Reprogramming Predators, » dans *The Hedonistic Imperative*, 2009, https://www.hedweb.com/abolitionist-project/reprogramming-predators.html, consulté le 2017/03/12.

Pearce, D., « Compassionate Biology. How CRISPR-based "gene drives" Could Cheaply, Rapidly and Sustainably Reduce Suffering Throughout the Living World, » *in The Hedonistic Imperative*, 2016, https://www.hedweb.com/gene-drives/index.html, consulté le 2017/03/12.

Regan, T., *The Case for Animal Rights*, Berkeley, University of California Press, 1983.

Riters, LV., « The Role of Motivation and Reward Neural Systems in Vocal Communication in Songbirds », *Frontiers in Neuroendocrinology*, 2012, vol. 33, no. 2, p. 194-209.

Sagoff, M., « Animal Liberation and Environmental Ethics : Bad Marriage, Quick Divorce, » *Osgoode Hall Law Journal*, 1984, vol. 22, no. 2, p. 297-307.

Schedlowski, M., Flüge, T., Richter, S. et al., (1995) « β-Endorphin, but not Substance-P, is Increased by Acute Stress in Humans, » *Psychoneuroendocrinology*, 1995, vol. 20, no. 1, p. 103-110.

Selva, N., Berezowska-Cnota, T. et I. Elguero-Claramunt, « Unforeseen Effects of Supplementary Feeding : Ungulate Baiting Sites as Hotspots for Ground-Nest Predation, » *PLoS ONE*, 2014, vol. 9, no. 3, e.90740.

Shutt, K., A. MacLarnon, M. Heistermann et al., « Grooming in Barbary Macaques : Better to Give than to Receive?, » *Biology Letters*, 2007, vol. 3, no. 3, p. 231-233.

Silk, JB., *Evolutionary Perspectives on the Links Between Close Social Bonds, Health, and Fitness*, National Academies Press, 2014, https://www.ncbi.nlm.nih.gov/books/NBK242452/, consulté le 2018/02/26.

Silk, JB., SC. Alberts et J. Altmann, « Social Bonds of Female Baboons Enhance Infant Survival, » *Science*, 2003, vol. 302, no. 5648, p. 1231-1234.

Silk, JB., JC. Beehner, TJ. Bergman et al., « Strong and Consistent Social Bonds Enhance the Longevity of Female Baboons », *Current Biology*, 2010, vol. 20, no. 15, p. 1359-1361.

Singer, P., *Practical Ethics*, New York, Cambridge University Press, 2011.

———, *Animal Liberation*, New York, Random House, 2015.

Smuts, B., « Encounters With Animal Minds, » *Journal of Consciousness Studies*, 2011, vol. 8, no. 5-6, p. 293-309.

Stachowicz, JJ., « Mutualism, Facilitation, and the Structure of Ecological Communities Positive Interactions Play a Critical, but Underappreciated, Role in Ecological Communities by Reducing Physical or Biotic Stresses in Existing Habitats and by Creating New Habitats on Which Many Species Depend, » *BioScience*, 2001, vol. 51, no. 3, p. 235-246.

Stone, CD., *Earth and Other Ethics : The Case for Moral Pluralism*, New York, Harper & Row, 1987.

Takacs, D., *The Idea of Biodiversity : Philosophies of Paradise*, Baltimore, Johns Hopkins University Press, 1996.

Wilcoxen, TE., Horn, DJ., Hogan, BM. et al., « Effects of Bird-feeding Activities on the Health of Wild Birds, » *Conservation Physiology*, 2015, vol. 3, no. 1, cov058.

Wuerthner, G. Cristet T. Butler, *Keeping the Wild : Against the Domestication of Earth*, Washington, Island Press, 2014.

Young, C., B. Majolo, M. Heistermann et al., « Responses to Social and Environmental Stress are Attenuated by Strong Male Bonds in Wild Macaques », *Proceedings of the National Academy of Sciences*, 2014, vol. 111, no. 51, p. 18195-18200.

MIDGLEY AT THE INTERSECTION OF ANIMAL AND ENVIRONMENTAL ETHICS

GREGORY S. McELWAIN
ASSOCIATE PROFESSOR AT THE COLLEGE OF IDAHO

ABSTRACT:

This paper explores the intersection of animal and environmental ethics through the thought of Mary Midgley. Midgley's work offers a shift away from liberal individualist animal ethics toward a relational value system involving interdependence, care, sympathy, and other components of morality that were often overlooked or marginalized in hyperrationalist ethics, though which are now more widely recognized. This is most exemplified in her concept of "the mixed community," which gained special attention in J. Baird Callicott's effort to create a "unified environmental ethics." In this, Callicott saw the potential in Midgley's thought for bringing animal and environmental ethics "back together again." However, this paper argues that he oversimplified and misapplied her complex concept. This is primarily due to his attempt to harmonize her approach with a rigid dichotomy between domestic and wild animals—as well as one between individuals and collectives—in his conception of the land ethic in the tradition of Aldo Leopold. Throughout, this paper also highlights Midgley's value as an early contributor to the convergence of animal and environmental ethics.

RÉSUMÉ :

Cet article explore l'intersection entre l'éthique animale et l'éthique environnementale par le biais de la pensée de Mary Midgley. Le travail de Midgley prend ses distances d'une éthique animale libérale individualiste pour se rapprocher d'un système de valeurs relationnel qui implique l'interdépendance, le soin (care), la sympathie, et d'autres éléments de la morale qui ont souvent été négligés ou marginalisés dans le contexte de l'éthique hyperrationnaliste, bien qu'actuellement plus largement reconnus. Le meilleur exemple de cela se retrouve dans son concept de « la communauté mixte » (the mixed community), lequel a bénéficié d'une attention particulière chez J. Baird Callicot et son effort pour créer une « éthique environnementale unifiée » (unified environmental ethics). En cela, Callicot a vu le potentiel de la pensée de Midgley's pour une « réunification » de l'éthique animale et l'éthique environnementale. Or, cet article soutient qu'il a simplifié et appliqué à tort le concept complexe de Midgley, en raison de sa tentative de concilier l'approche de cette dernière avec une stricte dichotomie entre animaux sauvages et domestiques – en plus d'une autre entre individus et collectivités – suivant sa conception de l'éthique de la terre dans la tradition d'Aldo Leopold. Tout au long du texte, cet article met en relief l'importance de Midgley comme l'une des premiers théoriciens à avoir contribué à la convergence de l'éthique animale et de l'éthique environnementale.

This paper offers an exploration of the value of British philosopher Mary Midgley at the intersection of animal and environmental ethics. I will begin by revisiting one of the most notable episodes of divergence and convergence in animal and environmental ethics in the work of J. Baird Callicott. This will not only help illustrate some of the challenges and divisions in the animal-environment dynamic, but also highlight a prominent application of Midgley's "mixed community" concept—one that attempts to bridge these divisions. Her work in the 1980s was among the earliest English-language contributions to the convergence of animal and environmental ethics, and Callicott sought to utilize her thought in pursuit of a "unified environmental ethics." From here I will look more closely at Midgley's animal ethics while highlighting some of the salient elements of Midgley's thought for convergence in animal and environmental ethics. I will conclude by critiquing Callicott's usage of the mixed community and argue that Midgley's concepts resist being part of his "unified environmental ethics." Though Callicott astutely recognizes Midgley's relevance, he attempts to force her concepts into a system that too rigidly separates domestic and wild animals, as well as individuals and collectives.

THE DIVERGENCE OF ANIMAL AND ENVIRONMENTAL ETHICS

Before exploring Mary Midgley's animal thought, it will be helpful to take a look at a particular area of divergence *and* convergence of animal and environmental ethics in the work of J. Baird Callicott. Callicott is not alone in interpreting Midgley's animal and environmental thought.[1] However, I will focus on his utilization for several reasons: (1) it is arguably the most prominent use of Midgley's concepts in English, (2) it is through the arc of this position on the separation and later reunification of the two fields that we can see the appeal of Midgley's concepts, and (3) he ultimately oversimplifies and misapplies her work in pursuit of a "unified environmental ethics." As such, the goal of this emphasis is to clear up certain misconceptions of Midgley's work while situating her concepts within her overarching project on human nature, which conceptualizes the self as a unified whole in social and ecological context.

Callicott's position on the divergence of animal and environmental ethics is outlined in the provocative 1980 essay, "Animal Liberation: A Triangular Affair."[2] The "affair" is composed of three parties—environmental ethics, moral humanism, and animal liberation—each of which, we find out, is opposed to the others. The first division, environmental ethics, is centred on the "biotic community," in which value is accorded to individuals in relation to the whole. The paradigm case here is Aldo Leopold's holistic land ethic, which is characterized by the now-familiar principle of ecological conscience: "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise."[3] The second division, moral humanism, is the classical liberal individualist tradition that grants *humans alone* moral stand-

ing or value based on qualities or characteristics that individuals do (or do not) possess. The capacity to reason is typically the all-important dividing line in this tradition. The third division, animal liberation, is a movement that seeks moral standing or rights for animals because of their interests, intrinsic value, or related categories or capabilities.

In this characterization, animal liberation and environmental ethics are clearly opposed to moral humanism because of the tradition's recalcitrant refusal to grant moral standing to nonhuman life. However, Callicott argues that, whether they know it or not, animal liberation and environmental ethics are also *opposed to each other*, both theoretically and practically. This is primarily because animal liberation is concerned with individual animals while environmental ethics is concerned with species and ecological collectives or wholes. Rather than radically challenging and transforming moral deliberation, animal liberation employs the same theoretical foundations and approaches of moral humanism by simply extending the scope of moral standing to include animals. That is, the animal liberation movement follows in the modernist tradition, attributing value and rights to animals in a hedonic fashion based on individualist moral criteria, such as sentience (consequentially excluding nonsentient nature from moral concern).[4] In this, animal liberation and moral humanism are each "*atomistic*, or distributive in their theory of moral value, while environmental ethics…is *holistic* or collective."[5] Individual value in the land ethic is then "relative, to be assessed in accordance with the particular relation of each to the collective entity which Leopold called 'land.'"[6] Moreover, for ecological holists, the land or biotic community is not an aggregative collection of objects, but rather "a unified system of integrally related parts, as, so to speak, a third-order organic whole."[7] Animal liberation fails to account for value on this level.

In addition to these conflicting theoretical foundations, Callicott is concerned with the failure of animal liberation to make essential divisions between domestic and wild animals. The biggest issue here is ecological. Environmental ethicists "set a very low priority on domestic animals as they very frequently contribute to the erosion of the integrity, stability, and beauty of the biotic communities into which they have been insinuated."[8] Actual liberation of animals into their natural behaviours and habitats would only accentuate this encroachment and degradation. Moreover, he claims that, since domestic animals are "creations of man" and "living artifacts," to speak of the natural behaviour of domestic animals is analogous to discussing "the natural behavior of tables and chairs." As domestic animals have no wild nature or home, it is "literally meaningless to suggest that they be liberated. It is, to speak in hyperbole, a logical impossibility."[9] Lastly, Callicott is concerned with the equal consideration and/or treatment that animal liberationists demand, specifically in this ecological context. If each animal deserved and received equal consideration, a single invasive animal, such as a mouse or goat, would have the same value as a bald

eagle, wolf, or other native animal whose species has a more established value in relation to the entire ecosystem. Suffice to say, Callicott is not the biggest proponent of domestic animals at this time and regards animal liberationists at theoretical and practical loggerheads with the interests of environmental ethicists. With this divergence established, we can now move on to convergence.

REUNIFICATION OF ANIMAL AND ENVIRONMENTAL ETHICS

In his 1988 essay, "Animal Liberation and Environmental Ethics: Back Together Again," Callicott revises this polarizing stance.[10] In light of the divisiveness of the rift and the overlapping concerns of animal and environmental ethics, he sets out to reunite the two fields with the help of Mary Midgley. He traces the conceptual foundations of the land ethic and argues that Leopold was influenced by Charles Darwin's science of ethics, David Hume's sentimentalism, and Charles Elton's ecological concepts in devising his progressive understanding of the evolution of ethics from individuals to society to the land. He argues that there is theoretical unity among these figures to ensure that any competing ethical claims can be articulated and resolved in the same terms—otherwise moral incommensurability can arise. And further, if animal and environmental ethics are to truly come together, it cannot be through mutual toleration or pluralism—it must be through real unification under one monistic theory.

Callicott proposes that this theoretical challenge might be solved by a combination of communitarian concepts—Aldo Leopold's biotic community and Mary Midgley's "mixed community." He contends that, rather than basing her theory in utilitarianism or deontology, Midgley advances a fundamentally Humean moral theory, placing Midgley and Leopold in a conceptual confluence that results in a "unified animal-environmental ethical theory." In mixed communities, we have obligations regarding our various relationships: obligations to our families that we do not have to strangers, obligations to our friends that we do not have to strangers, obligations to our pets, obligations to our barnyard animals, and so on. These communities place obligations on us not by intrinsic value or interests *per se*, but rather by kinship, relationships, and community membership. Inclusion in our moral consideration involves perceptions of where the boundaries of our moral communities lie, and these boundaries historically include domestic animals. As such, we feel moral outrage when domestic animals are "depersonalized and mechanized," not because of individualistic concepts of moral value, but because they are members of our mixed communities.[11]

Callicott concludes that the "Midgley-Leopold biosocial moral theory" bridges the conceptual divides between domestic and wild animals as well as between individualism and holism. This is because "domestic animals are members of the mixed community and ought to enjoy, therefore, all the rights and privileges,

whatever they may turn out to be, attendant upon that membership."[12] However, wild animals are "*not members* of the mixed community and therefore should not lie on the same spectrum of graded moral standing as family members, neighbors, fellow citizens, fellow human beings, pets, and other domestic animals."[13] Wild animals are rather members of the "biotic community," and "the duties and obligations of a biotic community ethic…may, accordingly, be derived from an ecological description of nature—just as our duties and obligations to members of the mixed community can be derived from a description of the mixed community."[14] Therefore, Midgley's mixed community applies to domestic animals and Leopold's biotic community to wild animals. Each community member is valued in relation to the respective whole—mixed or biotic—rather than individually, bringing domestic and wild animals together in a holistic and unified approach.

MIDGLEY AND THE MIXED COMMUNITY

With Callicott's utilization of Midgley in place, we can now look more closely at Midgley's animal ethics in order to draw out some salient features for this convergence, as well as some conclusions on his use of her concepts. Midgley's project is characterized in her oft-quoted line: "We are not just rather like animals; we *are* animals."[15] This simple yet vital premise is central to her work on human nature and has important implications for our moral landscape. We are embodied social animals navigating a morally complex world fraught with conflicting values and claims. We also share social and ecological contexts with a multitude of nonhuman animals. For Midgley, this connection with animals and the natural world is often overlooked and neglected, though it should ultimately hold an important place in our discussions of ethics and animals. The concept of the mixed community is an especially valuable description of this context and of our connection with animals.

Much of Midgley's contribution to animal ethics is in her now-familiar critique of hyperrationalism and in her approach to the role of emotions and relations in morality, which I have discussed elsewhere.[16] However, the more constructive elements of her animal thought give rise to her concept of the mixed community, especially in her exploration of species, relationships, and the boundaries of moral communities. The species barrier, for Midgley, is real and important, and not to be trivialized.[17] *But nor should it be exaggerated*. The species barrier, however real and important, is also semipermeable, allowing for animals of various species and classifications, including humans, to impressively interact and live together. "All human communities have involved animals," she observes, and it is "one of the special powers and graces of our species not to ignore others, but to draw in, domesticate and live with a great variety of other creatures. No other animal does so on anything like so large a scale."[18] Such domestication was achieved largely because animals (certain animals, at least) have a shared sociality with us and were, in turn, able to form bonds, understand social signals,

learn to obey particular persons, and so on. These shared traits and behaviours made possible the historical development of complex human-animal communities that extend from our homes to the farthest peripheries of life on earth.

Though animals may not here be "persons" in the strictest sense of the word, as members of the mixed community, they are certainly fellow subjects, not objects. Our intersubjectivity, sympathy, empathy, and shared sociality with animals all underlie a capacity "for attending to, and to some extent understanding, the moods and reactions of other species."[19] This ability to understand animals, for Midgley, rebuts the Behaviourist insistence that the subjective feelings of animals are imperceptible, indecipherable, or nonexistent. We can, however, talk of the subjective states of animals very much for the same reasons that we can for humans: a range of observable behavioural patterns that can be recognized, a noticeable similarity between nervous systems, and a history of successful interactions built on this recognition of subjectivity that stretches back well beyond domestication.[20] In this context, in which our very language is reflective of our history and coexistence with other animals, most of us are imprinted by interspecies sociality from a young age. We crave animal contact from our youth, and it is a foundational element of our early lives along with song, dance, and play.[21] Bonds with animals work alongside our bonds with people as part of a full human life—and such sociality, with both humans *and* animals, is reflected in the mixed community. Midgley paints a lively image of this mixed-species world:

> The species-barrier, imposing though it may look, is rather like one of those tall wire fences whose impressiveness is confined to their upper reaches. To an adult in formal dress, engaged in his official statesmanly interactions, the fence is an insuperable barrier. Down below, where it is full of holes, it presents no obstacle at all. The young of *Homo sapiens*, like those of the other species present, scurry through it all the time. Since all human beings start life as children, this has the quite important consequence that hardly any of us, at heart, sees the social world as an exclusively human one.[22]

In this context, love for animals complements love for humans and the world around us. Midgley likens love to a special substance that need not be hindered by the species barrier: the one "does not need to block another," she writes, "because love, like compassion, is not a rare fluid to be economized, but a capacity which grows by use."[23] Furthermore, our sympathy and emotional capacities further encourage an "eager reaching-out to surrounding life and to every striking aspect of the physical world" and undergird "the capacity for widely extended sympathy, for social horizons not limited to one's familiar group, is certainly part of this childish spontaneity."[24] This expanded sympathy is a trait that encourages interspecies fascination, interest, and concern, seamlessly binding us to the many animals that populate our world, both near and far. More-

over, this helps us in understanding our broader connection with the natural world. "It carries with it, too," she expands, "that still wider curiosity, that capacity for interest in other, inanimate surrounding objects—plants and stones, stars, rocks and water—which extends our horizon beyond the social into the ecological, and makes us true citizens of the world."[25] This leads quite nicely into the convergence of animal and environmental thought in Midgley's broader relational ethics.

THE MIXED COMMUNITY AND THE WIDER WORLD

Midgley argues that our conceptions of the self have to make sense in the context of our lives as a particular species on this planet. Individuals exist as whole, unified persons unto themselves, but cannot be abstracted from the wholes of which they are parts. Her perspective on the individual and the whole can be classified as one of relationality and interdependence. The relational aspect simply refers the variety of relationships that one has with the world—with the self, family, friends, community, other animals, and the environment. The interdependent aspect captures the webs of dependencies and interconnections that exist between these various relationships. Here we see the dynamic interactions between the self and the various interrelated collectives in which one is embedded, which she expresses in an organic metaphor:

> If…we use a biological or 'organic' model, we can talk also of a variety of asymmetrical relations found within a whole. Leaves relate not only to other leaves, but to fruit, twigs, branches, and the whole tree. People appear not only as individuals, but as members of their groups, families, tribes, species, ecosystems and biosphere, and have moral relations, as parts, to these various wholes.[26]

This "wholeness and separateness" is a helpful way of understanding the self in relation to others at the individual, social, and ecological levels in Midgley's approach.[27] Any explanation of our moral universe in terms that neglect these connections and relations—and their correlative emotions, sympathy, empathy, care, and compassion—will not be comprehensive enough to illuminate the complex variety of obligations that we have to others. This relationality stresses the *interplay* of parts and wholes and, importantly, does not exaggerate either to a fault. Negotiating the complex and shifting dynamics of this individual-collective balance is among the main priorities of our moral deliberations.

In pursuit of a sensible relational approach, Midgley is critical of the tendency in relational thought to overemphasize the principle of nearness or proximity, which can be used to dramatically limit one's moral boundaries and which can even serve as a form of egoism.[28] This said, she does not dismiss nearness, but embraces the concept in the context of the mixed community. She argues that "the proper way to treat it is to recognize nearness as a perfectly real and impor-

tant factor in our psychology, and therefore in our morality, but to refuse to treat it as the sole or supreme one."[29] Once again, the answer is not in the extremes but in a balanced appraisal of the values at play. Nearness is a key factor in our moral relations, from self to family to friends, pets, and so on, but there are other claims that can often outweigh those claims nearest to us, such as those of humans and other animals distant from us, in addition to claims from the natural world more broadly. "The moral universe," she writes, "is not just a system of concentric circles, in which inner claims must always prevail over outer ones."[30] In fact, Midgley argues that no system of concentric circles or carefully detailed prescriptions can adequately help us fully understand and decide on difficult moral dilemmas. Universalist moral theories that aim to identify a "simple formula" with which one can assess competing priority claims "make the job look simple" and so "can only deceive us."[31] They tend to portray concern as progressing outward, giving the outer circles less priority than the inner ones. This, Midgley argues, overlooks the relative weight of claims in the outer orbits, which may often be more pressing than those in the inner orbits. Instead, we should work out maps or webs of dynamic, overlapping *types* of claims. This is not to "fix priorities," but to mark our recognition that "relatively isolated claims" sometimes prevail over those nearer to us.[32]

What develops for Midgley is a comprehensive approach to a wide array of complementary and interrelated ethical issues, in which animals and the environment are not isolated, but rather integrated into a broader framework of our moral deliberation, especially in relation to conceptions of human nature and our place and role in the world. Discussions of animals, domestic and wild, run quite seamlessly into related issues such as sex and gender, science, social justice, economics, and politics. They all are tied together as things that matter to us and are central to our lives. In this relational, pluralistic, and pragmatic approach to the variability of value systems, the parts relate to each other and to the whole, priorities and values shift, social and ecological settings change, and the rules are constantly rewritten. There are no easy answers, and it seems that no single ethical system can account for the diversity and unpredictability of moral issues that arise in these worlds.

THE CHALLENGES OF CONVERGENCE IN ANIMAL AND ENVIRONMENTAL ETHICS

Now let us return to Callicott and the challenges of finding convergence in animal and environmental ethics. He rightly recognizes many of the issues with which Midgley is concerned, most notably her emphases on sympathy, relations, community, and animal subjectivity. However, there are some issues in plugging the mixed community into a unified system of environmental ethics. Aspects of this system-building dynamic arose in an earlier dispute between Eugene Hargrove and Callicott regarding Midgley's nonconforming meta-

physics, though I can point toward that critique here only as relevant background.[33] There is also Midgley's general resistance to system building and ethical monism.[34] For present purposes, I'm focusing here on Callicott's use of the mixed community concept, in which he attempts to harmonize Midgley's approach with a rigidly dichotomized understanding of domestic versus wild animals—as well as with a rigidly dichotomized understanding of individuals versus wholes.

Callicott overlooks the fact that our mixed human-animal communities do not necessarily stop at the traditional and often-artificial line between domestic and wild animals. Midgley highlights how varying contexts, relations, and ways of thinking about animals make it difficult to discern this line with certainty.[35] Animals fall all along something of a domestic-wild spectrum or scale based on a number of social, ecological, and conceptual considerations. Dogs, feral cats, squirrels, pigeons, elephants, song birds, chimpanzees, sheep, gerbils, dolphins, and so on constitute such diverse and complex roles and relationships as family members and companions, nuisances, coworkers, symbols, characters, food, trophies, religious objects, research subjects, and so on again. Differing relations, histories, geographies, roles, conceptualizations, and circumstances influence where these animals land on the domestic-wild spectrum. Accordingly, the terms "domestic" and "wild" for Midgley are not helpful as essential categories that preordain the moral status of animals of various types, contexts, and communities.

Midgley does focus on domestic animals in discussing the mixed community, but community, connection, care, empathy, and sympathy do not stop at the domestic-wild borderline, wherever that may fall.[36] Though our domestic context is a good example of the types of communities that can arise in our interactions with animals, the mixed community is more expansive than that. For Midgley, domestication is one aspect of the overarching human-animal community that we are part of, or, the "genuine unity of the whole of beings which are important to each other."[37] Resisting abstraction, this greater community manifests in particular and concrete ways, both spatially and temporally.[38] Though pragmatic concerns and clashes no doubt arise, these diverse communities transcend the boundaries of domestic and wild, social and ecological. Consequently, as a conceptual tool for envisioning our relationship and responsibilities to animals, the mixed community resists a rigid separation of domestic and wild animals.[39] Though it shades toward the local and domestic, this space is richly populated by a whole range of subjects along with their attendant relational claims.

Midgley's discussion of social and ecological claims is helpful in understanding these distinctions. *Social claims* are those that we respond to in our social communities, claims on behalf of sentient members.[40] The claims of animals are not to be seen as the claims of things, but as social claims of fellow community

members. *Ecological claims* are those we respond to in our ecological communities, claims on behalf of nonsentient members. These include trees, forests, species, collectives, and the biosphere as a whole. We constantly weigh and prioritize these claims in our value systems, which is where we place "what matters to us" in relation to everything else. Social and ecological claims are both important and reflect our unique connection to the whole. And here, for the purposes of convergence in animal and environmental ethics, there is not always a sharp distinction between social and ecological claims. She writes, "Our duties to swarms of very small or distant animals, or to whole species, seem to be partly of the ecological sort, resembling in many ways our duty to plants, but they can also have a social element of response to consciousness."[41] As such, animals in wild contexts, understood in all their complex situatedness, can have claims on us in ways similar to those of animals in domestic contexts. It is then important to view all within a ranged value system of priorities and claims, in which the social and ecological sorts are sometimes independent, sometimes continuous, and sometimes conflicting. Pragmatically mapping and navigating this moral terrain is more challenging than some ethical systems let on, and Midgley ensures that the complexity of these issues is not lost in animal discourse.

This domestic-wild disjunction connects with a final problem. In his effort to unify Midgley's and Leopold's community concepts in a holistic manner, Callicott overlooks the complexity of the relationality in Midgley's project. He primarily overlooks the individual animals that overlap our mixed social and ecological communities. He seems to retain his earlier focus on the supremacy of the whole and the subordination of individuals.[42] Midgley, on the other hand, has a keen interest in collectives, but stresses the dynamic and balanced interplay of individuals and wholes, as well as the claims therein. In later work, she writes that "concern for the whole and concern for individuals are simply not alternatives. They are complementary, indeed inseparable, aspects of a decent moral problem."[43] She expands on this, saying, "Neither of them is reducible to the other. It is always possible for the two to conflict, but it is always necessary to try to bring them into harmony."[44] This interplay again often transcends rigid boundaries—human and animal, domestic and wild, sentient and nonsentient—in our value systems. Many parts of many wholes compose the vast network of interrelations that matter to us and often defy preconceived principles and priorities. Midgley's approach here is not individualist, as Callicott rightly noticed, but nor is it strictly holist. It is relational with pragmatic and pluralistic elements. As such, though her approach may be complementary to Callicott's more thoroughly holistic approach, it resists being situated within his unified system.

CONCLUSION

Though these complications cast doubt on a singular "Midgley-Leopold biosocial moral theory," I do not contend that Mary Midgley has all the answers. But, as an early contributor to convergence in animal and environmental ethics, her thinking is invaluable in contextualizing human nature in relation to the rich social and ecological worlds in which we are embedded. Through this, she offers us a more balanced approach than the "either/or" choices of liberal individualism and ecological holism in dealing with domestic and wild animals and individuals and wholes. Taken in context, these insights may continue yield compelling insights into the future of convergence, though the answers will likely never be very clean or tidy.

NOTES

[1] Among the most visible applications of Midgley's animal and environmental thought are Benton, Ted, *Natural Relations: Ecology, Animal Rights & Social Justice*, London, Verso, 1993; Larrère, Catherine and Raphaël Larrère, "Animal Rearing as a Contract," *Journal of Agriculture and Environmental Ethics*, vol. 12, no. 1, 2000, p. 51-58; and Lestel, Dominique, *L'animalité : Essai sur le statut de l'humain*, Optiques: Philosophie 216, Paris, Hatier, 1996. Outside of Callicott and Benton, the bulk of English-language usages of the mixed community are in religious and ecotheological ethics: James M. Gustafson, *Ethics from a Theocentric Perspective*, vols. 1-2, Chicago, University of Chicago Press, 1983; Lisa Sideris, *Environmental Ethics, Ecological Theology, and Natural Selection*, New York, Columbia University Press, 2003; and Anna L. Peterson, *Being Human*, Berkeley, CA, University of California Press, 2001.
It is beyond the scope of this paper to evaluate every use of Midgley's concepts. However, it should be noted that Larrère and Larrère's use of the mixed-community concept in relation to contractarian ethics is ultimately divergent from Midgley's thought. On the one hand, they highlight aspects of the mixed community that are certainly representative of the concept: interspecies communication and understanding, the history of domestication and sociality between humans and animals, and the relation between collective groups of animals and humans. They also gesture toward Dominique Lestel, a noted interpreter of Midgley, and his line that "the big question is not so much, as we had thought, that of knowing what distinguishes men from animals; it is rather that of inventing ways of living together" (Larrère and Larrère "Animal Rearing as a Contract," p. 57, paraphrasing Dominique Lestel, "Des Animaux-Machines aux machines animales," *in* Boris Cyrulnik (ed.), *Si Les Lions pouvaient parler—Essais sur la condition animale*, Gallimard, 1998, p. 681-699). However, they (1) maintain Callicott's domestic-wild dichotomy and his general reading of Midgley (as does Sideris, though in a more nuanced form) and (2) rely on a contractarian approach to domestic animals. The first issue will be taken up in this paper and illustrates the impact that Callicott's reading of Midgley had in wider interpretation and application of her work. The latter issue is antithetical to Midgley's thought, as she is critical of contractarianism. As such, a large portion of Midgley's corpus is devoted to undermining elements of contractarian ethics: its individualism, social atomism, exclusivity, and reliance on rationalistic and legalistic categories such as language and consent. Further, Midgley argues that the parameters of the contract are typically unable to extend to animals as they do within human groups. There is consonance here with the critique of Clare Palmer, for instance "The Idea of the Domesticated Animal Contract," *Environmental Values*, vol. 6, no. 4, 1997, p. 411-425.

[2] Callicott, J. Baird, "Animal Liberation: A Triangular Affair," *Environmental Ethics*, vol. 2, 1980, p. 311-338.

[3] Leopold, Aldo, *A Sand County Almanac*, Oxford, Oxford University Press, 1948, p. 262.

[4] Callicott, "Animal Liberation: A Triangular Affair", p. 318.

[5] *Ibid.*, p. 337.

[6] *Ibid.*, p. 327.

[7] *Ibid.*, p. 321.

[8] *Ibid.*, p. 337.

[9] *Ibid.*, p. 330.

[10] Callicott, J. Baird, "Animal Liberation and Environmental Ethics: Back Together Again," *Between the Species*, vol. 4, no. 3, 1988, p. 163-169. "A Triangular Affair," along with such articles as Sagoff, Mark, "Animal Liberation and Environmental Ethics: Bad Marriage, Quick Divorce," *Osgoode Hall Law Journal*, vol. 22, no. 2, 1984, p. 297-307, generated controversy and literature from both the animal and environmental perspectives. These are most accessible in collected forms in Donovan, Josephine and Carol J. Adams (eds.), *The Feminist Care Tradition in Animal* Ethics, New York, Columbia, 2007; Hargrove, Eugene C. (ed.), *The Animal Rights/Environmental Ethics Debate: The Environmental Perspective*, Albany, SUNY

Press, 1992; Ouderkirk, Wayne and Jim Hill (eds.), *Land, Value, Community: Callicott and Environmental Philosophy*, Albany, SUNY Press, 2002.

[11] Callicott, "Animal Liberation and Environmental Ethics: Back Together Again," p. 167.

[12] *Ibid.*, p. 167.

[13] *Ibid.*, p. 168. Italics mine.

[14] *Ibid.*, p. 168.

[15] Midgley, Mary, *Beast and Man: The Roots of Human Nature*, London, Routledge, [1979] 1995, p. xxxiii.

[16] See McElwain, Gregory S., *The Mixed Community*, in Kidd, Ian James and Liz McKinnell (eds.), *Science and the Self: Animals, Evolution, and Ethics: Essays in Honour of Mary Midgley*, London, Routledge, 2016, p. 41-51. Sections of this paper were adapted from this original publication, with permissions from Taylor & Francis. As a rough summary of her critique, let me offer the following. Midgley is critical of rationalist positions that neglect and overlook the care, compassion, and relations that we are capable of and do extend toward others, including other species. Midgley takes aim at the legacy of this "hyperrationalism" and argues that it must be challenged due to the subjugated status it has placed on animals (and, in many cases, certain humans). She interrogates the resulting rationalist categories of morality derived from this position—duty, rights, equality, justice, and contract thinking among others—and their efficacy in dealing with animals. These categories, often misleading and inconsistent due to their technical legal origins, are generally focused on one narrow area of morality and cannot be seen to cover *the whole*, as they are often represented or assumed to do (though, importantly, careful authors often highlight this particularity). In the end, she argues, it is perhaps better to rephrase our discussions of morality because the current parameters may be too limiting to be useful: "Whenever the spotlight picks out a particular moral area like this [rights] as central, things outside it tend to glide unnoticed into the shadows and be forgotten. Terminology, developed for central purposes, becomes unable to express them clearly. In such cases, philosophy must not just record and follow the usage of current theories. It must also be their critic" (Midgley, Mary, *Animals and Why They Matter*, Athens, University of Georgia Press, 1983, p. 63). Reliance on certain rationalist categories of morality, which can be of much use in other areas, can distract from rather than enrich animal discourse, and "notions like equality, rights, and even justice tend to imprison our attention in the area which has now become familiar" (Midgley, *Animals and Why They Matter*, p. 83).

This critique of hyperrationalism should not, however, be taken as antirationalism. For Midgley, reason is crucial to moral thinking and should not be jettisoned. She is certainly critical of those who one-sidedly exaggerate the primacy of reason to the neglect of other important variables in human life and morality, including emotions. Emotions for Midgley comprise a "whole range of our feelings, motives, and sympathies" that support and invigorate our moral faculties and contribute to "well-grounded belief on important subjects." They are, in other words, "the power-house which keeps the whole lot going" (*ibid.*, p. 35). Our moral concerns and what we care about are very naturally accompanied by feelings—of alarm, disgust, love, joy, worry, and so on—and reflect our sense of the seriousness of the cases, deeply connecting us to what matters in our lives. However, this does not mean, as certain Emotivist theories claim, that morality is nothing but an expression of our emotions. "The Emotivist's mistake," she explains, "is in supposing that it [morality] requires nothing else; in trying to detach such feelings from the thoughts that properly belong to them" (*ibid.*, p. 35). Though emotion can be an ugly "buzz word," it need not be, and is not for her, for whom the "real fault must lie not in the presence of feeling, but in the absence of thought, or in the unsuitability of feeling to thought" (*ibid.*, p. 35). For Midgley, reason and emotion are interwoven and work together in a complementary way as part of the same process.

[17] Midgley argues that those who marginalize *and* those who exaggerate the species barrier are off the mark. In response to those who cast human exceptionalism as speciesism, she argues that the species barrier is real and significant, and that awareness of it is ultimately essential to properly understanding, respecting, and valuing each species and each individual. To do

otherwise is to engage in a form of "patronizing thinking," flattening out the integrity and distinctions of different animals. Discriminating and distinguishing between animals is not then prejudicial *per se*, but rather an important necessity in appreciating value. Moreover, the drive toward leveled interspecies egalitarianism tends to downplay the important place of *intra*species bonds and our relationships as social beings. Her more overriding concern, however, is in challenging those who overexaggerate the species barrier.

[18] *Ibid.*, p. 111, p. 112.

[19] *Ibid.*, p. 114. Our positive relations in these communities confirm this, but so too do our negative ones. For instance, cruelty indicates a belief in animal pain and an implicit acceptance, not a denial, of their consciousness. In other words, belief in animal sentience is "essential…for exploiting them successfully"—in fact, "exploitation *requires* sympathy" (*ibid.*, p. 114, p. 116). Abuse of and cruelty to animals are unfortunate results of the very real human ability to understand and relate to the "inner" as well as the "outer" states of animals.

[20] This capacity for reading human and animal subjectivity is not always perfectly accurate, and sometimes it fails completely, but the imperfection of this capacity is not a strong enough reason to reject the ability to say anything positive about animals. Here the charge of "anthropomorphism" is quickly made if any attribution of human emotions is transferred onto animals. If things are understood in the context of the mixed community, however, anthropomorphism is wrong only when it *improperly* describes the emotion or feeling; otherwise, it is completely appropriate to refer to corresponding emotions between humans and animals in this language. Given our coevolution with other animals, Midgley wishes to remove the stigma of anthropomorphic language altogether as a red herring: "This attack [of anthropomorphizing] assumes that human language is invented in the first place not only *by* humans, but exclusively *about* humans—to describe them and them alone. Any use of it to describe any other being would then be an 'extension'—a leap out into the unknown. But if language has, from the start, arisen in a mixed human-animal community and has been adapted to describe all beings whose moods etc. might be of general importance and interest, then that is the proper use of the concepts from the start, and no leap is needed" (*ibid.*, p. 124).

[21] *Ibid.*, p. 118.

[22] *Ibid.*, p. 118.

[23] *Ibid.*, p. 119.

[24] *Ibid.*, p. 119, p. 120.

[25] *Ibid.*, p. 120.

[26] Midgley, *Evolution as a Religion: Strange Hopes and Stranger Fears*, London, Routledge, [1985] 2002, p. 178.

[27] The phrase "wholeness and separateness" comes from a later work: Mary Midgley, *The Ethical Primate: Humans, Freedom and Morality,* London, Routledge, 1994, p. 102-103.

[28] Midgley, *Animals and Why They Matter*, p. 21.

[29] *Ibid.*, p. 21

[30] *Ibid.*, p. 22-23.

[31] *Ibid.*, p. 30.

[32] *Ibid.*, p. 30. The types of claims are myriad: claims of fellowship, kinship, special need, special responsibility, prudence, gratitude, admiration, wonder, etc.

[33] In Hargrove, "Environmental Ethics without a Metaphysics," p. 135-49, Eugene Hargrove investigates and critiques Callicott's use of David Hume, Charles Darwin, Aldo Leopold, and Mary Midgley, the group upon which he builds his unified theory of environmental ethics. Hargrove challenges Callicott's unified environmental ethics, arguing that Callicott's theory itself is not as metaphysically unified as he claims. Hargrove argues that, in order for Callicott's theory to be unified, the metaphysics must be consistent throughout the group in order to avoid the inconsistencies of eclecticism. Hargrove contends that they do not meet this standard, and finds difficulties, inconsistencies, and contradictions amongst the metaphysics of Callicott's exemplars, including Midgley. The main takeaway revolves around Callicott's claim that Leopold and Midgley share a Humean system of ethics grounded in

moral sentiments. Though Midgley does have certain affinities with Hume, she is often critical of Hume's overemphasis on feelings in morality and, moreover, does not share his metaphysics. She is, in short, keen on sentiments, but resists Hume's rigid separation of reason and emotion, among other things. In his response to Hargrove's critique, Callicott seems aware of the improbability of finding a thoroughly unified metaphysics, arguing that it is more about the consistency of the main elements involved (Callicott, J. Baird, "My Reply," p. 291-329). Here I will only add that Midgley is more amenable to Darwin than Hume. Though Darwin is influenced by Hume, his account more fully integrates reason into a unified description of morality.

[34] The following quote captures elements of her affinity with pluralism over monism: "Attempts by moral philosophers in the last few decades to find some single 'moral theory' such as Utilitarianism, which can organize the whole moral scene, have been misguided. They ignore the complexity of life. Of course, we do need to relate our different moral insights as well as possible, and to work continually at bringing them into harmony. But our aims are complex. We are not machines designed for a single purpose, we are many-sided creatures with a full life to live. The ambition of finding a single underlying rationale for all our aims is vacuous…Yet we do indeed need to integrate our aims as far as possible. This difficult two-sided enterprise is now being further obscured by one more irrelevant distortion from academics pugnaciously attacking or defending 'pluralism.' We ought to be through with this kind of thing. We should be asking 'what is pluralism?' or 'what kinds of it are necessary?,' not wasting energy on yet one more polarized squabble" (Midgley, Mary, "Beasts Versus the Biosphere?", *Environmental Values*, vol. 1, no. 2, 1992, p. 116). Though this article was written after "Animal Liberation and Environmental Ethics: Back Together Again," it highlights her usual resistance to monistic theories.

[35] Others have highlighted the complex and contested boundaries of domestic and wild animals: for example, Clement, Grace, "The Ethic of Care and the Problem of Wild Animals," *Between the Species*, vol. 3, 2003; Palmer, Clare, "What (If Anything) Do We Owe to Wild Animals?", *Between the Species*, vol. 16, no. 1, 2013, p. 15-38; Peterson, Anna L, *Being Animal: Beasts and Boundaries in Nature Ethics*, New York, Columbia University Press, 2013.

[36] John Hadley recognizes this in Hadley, John, "Critique of Callicott's Biosocial Moral Theory," *Ethics & the Environment*, vol. 12, no. 1, p. 67–78.

[37] From a series of personal interviews with Midgley between 2011 and 2017. Midgley, Mary, interview by Gregory S. McElwain, March 6, 2011, in Newcastle Upon Tyne, UK.

[38] She expands on this in 2011: "A wide concept like the mixed community, I think, is naturally going to dissolve into a lot of little ones." She also goes on, importantly, to suggest that the "mixed community" is a conceptual tool and that we should not get too locked into its use: "I use words as and when they seem appropriate. And sometimes one is talking at a very general level, and the abstractions are very important. And sometimes you get nearer to things and other words are needed" (Midgley, Mary, interview by Gregory S. McElwain, May 23, 2012, in Newcastle Upon Tyne, UK).

[39] Midgley discusses some of these category dynamics in 2012: "The point about wolves, for instance, is that you don't say: 'this one is domestic, this one is wild—so I won't get involved in it, as it were'" (Midgley, Mary, interview by Gregory S. McElwain, May 23, 2012, in Newcastle Upon Tyne, UK).

[40] She roughly equates "sentience" to consciousness, acknowledging the complications therein.

[41] Midgley, *Animals and Why They Matter*, p. 90.

[42] In 2012, Midgley discusses the contribution of Callicott in drawing attention to the importance of ecosystems and holism: "I had Callicott in mind as rather laudable in that he did. He was one of the people who did bring in this notion of the ecosystem as a whole, which is terribly important." However, such emphasis on collectives can drift toward "the whole supreme." Midgley, Mary, interview by Gregory S. McElwain, May 23, 2012, in Newcastle Upon Tyne, UK.

[43] Midgley, Mary, "Beasts Versus the Biosphere?", p. 117.

[44] *Ibid.*, p. 116. Citation of this later work is again for development of Midgley's ideas from *Animals and Why They Matter*. They have no bearing on Callicott's interpretations and serve only to flesh out these concepts as they developed over time and are for the overall purposes of highlighting salient features of Midgley's thought for convergence in individualism and collectivism.

THE ETHICS AND POLITICS OF PLANT-BASED AND CULTURED MEAT

JEFF SEBO
NEW YORK UNIVERSITY

ABSTRACT:

In this paper I examine several of the moral and political questions raised by new kinds of meat. I begin by discussing the risks and harms associated with industrial animal agriculture, and I argue that plant-based meat and cultured meat are promising alternatives to conventional meat. I then explore the moral, conceptual, social, political, economic, and technical challenges that stand in the way of widespread adoption of these alternatives. For example, whether or not we achieve widespread adoption will depend on whether or not we can persuade business and political leaders to see plant-based and cultured meat as an opportunity rather than as a threat. Finally, I consider several ways of meeting these challenges, and I argue that we must be very careful if we want to avoid the kinds of problems that other, similar technological innovations such as GMOs have faced.

RÉSUMÉ :

Dans cet article, j'examine plusieurs des questions morales et politiques que soulève la production de nouvelles formes de viandes. J'aborde d'abord les risques et les dangers liés à l'agriculture animale industrielle, et je soutiens que la viande à base de plantes et la viande cultivée représentent des alternatives prometteuses à la viande conventionnelle. J'examine ensuite les défis d'ordre moral, conceptuel, social, politique, économique, et technique, qui font obstacle à l'adoption généralisée de ces alternatives. Par exemple, cette dernière dépendra de si on arrive ou non à convaincre les dirigeants politiques et les chefs d'entreprise de voir la viande à base de plantes et la viande cultivée comme une opportunité plutôt que comme une menace. Enfin, je prends en considération plusieurs façons de relever ces défis, et j'appelle à la vigilance quant aux types de problèmes à éviter, auxquels d'autres innovations technologiques ont déjà été confrontés.

1. INTRODUCTION

The twentieth century changed the global food system in a fundamental way. As the previous century drew to a close, people were still growing food on relatively small, free-range farms. This system was far from ideal, a point that people often forget now. Still, the means of production limited the harm that the food system could bring about. But then, with the emergence of modern technology and assembly-line production, everything changed. People started producing food in factories, which allowed for an unprecedented increase in volume, as well as an unprecedented level of harm to humans, nonhumans, and the environment. As a result, the world is now at a crossroads. As we will see, the current food system harms and kills 70+ billion land animals per year; consumes more land, water, and fuel than most other industries; and releases more carbon dioxide, methane, and nitrous oxide into the air than most other industries. Meanwhile, this food system is still not feeding everyone, and many of the people it feeds are suffering from a variety of health problems.

In response to this predicament, many people are now advocating for alternatives to industrial animal agriculture, including nonindustrial agriculture and nonanimal agriculture. But, while it would be wonderful if these alternatives were enough to persuade people to stop supporting industrial animal agriculture, it does not seem likely that they will be, at least not any time soon.

Is there another alternative? Recent developments have raised an intriguing possibility: that science, technology, and meat are not only the cause of (or at least a partial cause of) but also the solution to (or at least a partial solution to) the current food crisis. In particular, researchers have made tremendous strides in developing plant-based meat (i.e., meat that comes from plants) as well as cultured meat (i.e., meat that comes from a cell culture). Many organizations are now developing these products, and with each passing year they are reaching new milestones in terms of quality, quantity, and affordability. If this progress continues, then plant-based and cultured meat could be a game changer: unlike other alternatives to our current food system, they could allow people to eat what they want while eliminating many of the human, nonhuman, and environmental costs of what people currently eat.

The emergence of plant-based and cultured meat, then, represents a promising development. However, it will not be easy to make good on this promise. There are substantial conceptual, moral, social, political, economic, and technical challenges that supporters of plant-based and cultured meat will need to overcome if they want to create an alternative to conventional meat that producers and consumers alike can accept. And what happens over the next decade will play a major role in determining whether or not they are able to overcome these challenges. As a result, this is a pivotal moment in the history of the food system. If people develop and promote these products in a thoughtful and strategic way, then these products stand a real chance of doing a lot of good in the world. If, however, people squander this opportunity, then there may not be another one like it for decades.

We must therefore think seriously about how to develop and promote plant-based and cultured meat in a thoughtful and strategic way, including how to meet the many challenges that these products will inevitably face. My aim in this article is not to show exactly how we should do that. Instead, my aim is to survey some of the main issues that will be relevant to this discussion and show how these issues interact, so that we can appreciate the task that lies ahead. I will begin by making the case for plant-based and cultured meat. I will then survey conceptual, social, cultural, religious, political, economic, technical, and moral questions that these products will raise. The upshot will be that we have strong reason to support these products, but that we need to be extremely cautious about how we do so.

Before I begin, I should make a remark about the scope of my discussion in this paper. I will be focusing on plant-based and cultured meat for the sake of simplicity and specificity. Much of what I will say can extend to other plant-based and cultured animal products as well (for example dairy, eggs, and leather), though the details will vary from case to case depending on the meaning and value that these products have for people. I will also be focusing here on questions, challenges, and opportunities that plant-based and cultured meat are likely to raise in the context of developed countries with industrial animal agricultural systems, such as the United States. Some of what I say about these countries can extend to other countries too (and, of course, one question that people are likely to face in developed countries is how to promote plant-based and cultured meat in developing countries in an ethical and effective way), but the details will vary a lot from case to case depending on local beliefs, values, and practices around food, as well as on local, social, political, economic, and technological conditions in the relevant countries.

2. INDUSTRIAL ANIMAL AGRICULTURE

The first step in making the case for plant-based and cultured meat is to observe that industrial animal agriculture is responsible for a lot of unnecessary harm in the world. This harm accrues to humans, nonhumans, and the environment.

Start by considering nonhumans. On a conservative estimate, industrial animal agriculture currently raises and kills more than 70 billion land animals in the world for food each year. If you factor in aquatic animals, this number increases substantially. Market forces govern most of what happens to these animals in the food system. Many of these animals are bred to grow as big as possible as quickly as possible. They are separated from friends and family and confined in cramped spaces, either small cages or large sheds with tens of thousands of other animals. They are controlled through castration, debeaking, tail docking, and more, typically without anesthesia. They are transported in crowded trucks without food, water, or medical care. And they are killed in slaughterhouses that place a high premium on efficiency and a low premium on welfare. This is, to say the least, a moral problem. To put the scale of this problem into perspective, consider that the estimated total number of nonhumans who die in this food

system every 1-2 years is greater than the estimated total number of humans who have ever lived throughout history.[1]

Now consider the impact on humans. Industrial animal agriculture has harmful health impacts for producers as well as consumers. Regarding food production, industrial animal agriculture typically requires minimum-wage workers to engage in demanding and repetitive labour in toxic and dangerous environments with few if any legal protections, with the result that many workers develop a wide range of physical and mental health problems. Regarding consumption, industrial animal agriculture produces low-quality food in an inefficient manner, and then makes this food available at artificially low prices. As a result, many people either have no access to food at all, or have access exclusively or primarily to industrial animal agricultural products (along with other unhealthy foods), which can lead to health problems related to malnutrition, diabetes, and obesity.[2]

Industrial animal agriculture also has harmful impacts on public health. Use of antimicrobials on factory farms is either unregulated or poorly regulated, allowing for heavy use to prevent the spread of disease and to stimulate growth in animals. Consequently, factory farms are breeding grounds for antimicrobial-resistant pathogens, which substantially increases the risk of public-health crises. Similarly, waste treatment and disposal in factory farms is either unregulated or poorly regulated. Many factory farms dump waste (for example, blood, vomit, feces, and urine) in surrounding areas in much higher quantities than these areas can absorb, thereby contaminating local air, water, and soil. This practice not only makes local communities unpleasant to live in; it also correlates with increased rates of cancer and other physical- and mental-health issues.[3]

Finally, consider the impact on the environment (which, of course, impacts human and nonhuman health and wellbeing too). Animal agriculture consumes more land, water, and energy than most other industries, and it also emits more carbon dioxide, methane, and nitrous oxide than most other industries. In particular, animal agriculture is responsible for an estimated 9 percent of global carbon dioxide emissions, 37 percent of global methane emissions, and 65 percent of global nitrous oxide emissions (Steinfeld, 2006). As a result, animal agriculture is a leading contributor to environmental harms including global climate change, biodiversity loss, and ecosystem collapse. And, as industrial animal agriculture expands into other markets, these impacts will expand as well.[4]

It is crucial to emphasize that these impacts of industrial animal agriculture are not the result of a system working improperly. They are instead essential to its proper functioning. It is only by externalizing many of these costs through deregulation (as well as by accepting financial benefits through taxes and subsidies) that this food system is able to maintain the appearance of efficiency and affordability. If, in contrast, industrial animal agricultural corporations were to try to minimize many of these costs—or, in the case of public health and environmental costs, to cause them but then provide compensation for them—then it would be much less likely to survive in a free market, and it would be clear to

everyone that an alternative is not only morally but practically necessary. As it stands, an alternative is morally and practically necessary, yet people will have to try to find a way to bring an alternative about without global consensus to that effect.

Taking into account these impacts, we can see that our industrial animal agricultural system represents a moral, social, and political problem of the highest order. It has already caused massive amounts of suffering and death and ensured that much more will occur. This raises a couple of questions: In a world with a rising population of humans who want to eat meat and an increasingly capitalist global economy that aims to provide humans with food that they want to eat, what alternative to industrial animal agriculture, if any at all, can both (a) achieve widespread adoption and (b) have better impacts under widespread adoption? And what if anything can people do to increase the probability that such an alternative will, in fact, achieve widespread adoption and have better impacts under widespread adoption?

3. ALTERNATIVES TO INDUSTRIAL ANIMAL AGRICULTURE

The next step in making the case for plant-based and cultured meat is to show that other alternatives are not, in and of themselves, likely to be enough to solve the problems caused by industrial animal agriculture.

Of course, there are many kinds of harm that industrial animal agriculture causes, and there are alternatives for each one. For example, local food focuses on reducing the harmful impacts of transportation. Organic food focuses on reducing the harmful impacts of synthetic chemicals. Food sovereignty focuses on reducing the harmful impacts of colonialism. And so on. In a full discussion of the future of food, we would need to consider each of these alternatives carefully to see whether and to what degree they should be part of the ideal alternative to the status quo. But since the most harmful aspects of the status quo are its combination of animal and industrial agriculture, I will focus on alternatives that address one or both of those features here. (That said, this broader set of issues is very important too, and I will return to it below, when I discuss the challenges that supporters of plant-based meat and cultured meat will likely face moving forward.)

With that in mind, we can consider two options here. First, there is *nonindustrial animal agriculture*. Many people think that the solution to the current food crisis is a return to a past nonindustrial system that produces animal as well as plant products. This would eliminate many of the aspects of the current food system that cause so much harm: it would cause less suffering and death (in total and on average, since fewer animals would be farmed and the average farmed animal would experience less harm); it would consume less water and energy (in total, maybe not on average); and it would produce less waste and pollution (in total, maybe not on average). Moreover, people would still get to eat animal products (though fewer people would get to do so), and these products would likely be healthier (Schlottmann and Sebo, 2018).

But while nonindustrial animal agriculture may well be part of a solution in the short term, it cannot be anything more than that. One issue is that, while this alternative would reduce costs for welfare, health, and the environment, it might not reduce them enough: it would still harm and kill animals, it would still create pathways for disease, and it would still consume energy in the conversion from feed to flesh. Moreover, even if we set these issues aside, another issue is that we could never feed the world this way. Free-range animal agriculture takes too much time, energy, and money—as well as too specific a set of environmental conditions—for producers to be able to provide healthy, affordable meat, dairy, and eggs to everyone who wants them this way. Thus, if this kind of food system were to replace industrial animal agriculture, animal products would become a rare luxury item. And while many critics of industrial animal agriculture are happy to embrace this result, as far as it goes, the producers and consumers who actually determine the fate of our food system might not be.[5]

The second alternative is industrial *non-animal industrial agriculture*. Many people think that the solution to the current food crisis is, rather than a return to a past nonindustrial system, a conversion to a new, partly industrial and partly nonindustrial system that produces plant products (and, in particular, plant products that convert energy efficiently, such as legumes). This would eliminate many of the aspects of the current food system that cause so much harm, including many of the animal-welfare, public-health, and environmental impacts. Moreover, producers would still get to selectively and strategically use industrial methods as part of production and distribution, which would allow them to provide affordable, healthy food for many people who need it.

But while industrial plant agriculture may well be part of a solution, it likely cannot be anything more than that either—at least, not in the short term. The reason is simple: while there are currently many people in the world who are satisfied with a plant-based diet, there are also many people who are not. And while the total number of vegans in the world is rising every day (given increased availability of vegan options as well as increased demand for vegan options in developed countries), the total number of nonvegans in the world is rising every day too (given increased availability of animal products as well as increased demand for animal products in developing countries).[6] This makes it unlikely that a meatless food system will be desirable for everyone we need to be appealing to in the short term. Of course, that may change in the long run. But, for now, food advocates need to think about how we can get from here to where we need to go. And that means accepting that neither a global demand for meat nor a market-driven economy will be going anywhere anytime soon.[7]

What we need, then, is an alternative to conventional meat that provides as many people as possible with healthy, affordable food that they actually want to eat, without causing unnecessary harm to animals, public health, or the environment. Of course, people can, and should, continue to advocate for plant-based food (as well as changes to our political and economic systems), with the aim of eventually creating a world no longer bound by these constraints. But in the

meantime (and as a partial means to this end), we need an alternative that can work within current constraints. The question is, is there such an alternative? If so, what is it, and what can we do to bring it about?

4. MAKING WELL-DONE MEAT LESS RARE

The third step in making the case for plant-based and cultured meat is to show that these products represent a different kind of alternative, one that can combine many of the pros of the other main alternatives while eliminating many of the cons.

Plant-based and cultured meat systems attempt to satisfy consumer demand for meat without breeding, raising, or killing any animals (or at least not billions of animals) in the process. In short, plant-based meat refers to meat that comes from plants—e.g., a burger made out of veggies, grains, soy, and so on. In contrast, cultured meat refers to meat that comes from a cell culture—e.g., a burger made out of flesh that, instead of coming from an animal, comes from a scaffolding and growth medium in a brewery.

Most people are more familiar with plant-based meat than with cultured meat, since plant-based meat has been around for a much longer time than cultured meat has. In the East, recipes for plant-based meats date back centuries (Shurtleff and Aoyagi, 2014). In the West, recipes for veggie burgers date back to at least 1969, with the first documented sale of a veggie burger occurring in London in 1982 (Smith, 2014). At the present moment, multinational corporations are selling plant-based products all over the world. Veggie burgers now sit on menus and store shelves alongside plant-based chicken, turkey, bacon, sausage, hot dogs, and more. Initially these products were easy to distinguish from conventional meat. They might have resembled conventional meat enough to play a similar functional role in some social contexts, but everybody knew which was which. But increasingly, companies are finding ways to create plant-based meat that is difficult to distinguish from conventional meat. For example, companies such as Beyond Meat are researching ways to break plants down into core parts including "amino acids, lipids, water, and a trace amount of minerals and carbohydrates" and then restructure those parts so that they have the same structure as in conventional meat (Brown, 2016, p. 3). As this technology improves, the functional and structural gap between plant-based and conventional meat will continue to close.

In contrast to plant-based meat, cultured meat is still in early stages of development, though the idea of cultured meat has been around for a long time. Science-fiction writers have been imagining it since at least the end of the nineteenth century, and Winston Churchill predicted it by the end of the twentieth century (Rowland, 2017). The basic technology to produce cultured meat has also existed for decades; for example, Russell Ross performed the first documented cultured cultivation of muscular fibers in 1971 (Ross, 1971). However, use of this technology to produce meat is still relatively new. Researchers produced the first

sample—a fish filet made out of goldfish cells—at the turn of the twenty-first century (Benjaminson, Gilchriest, and Lorenz, 2002). In 2005 the Dutch Government agency SenterNovem started funding cultured meat research, and in 2013 Mark Post debuted the first edible cultured hamburger in London (Datar and Luining, 2015). Now, many companies are working on or supporting such efforts. Prominent examples include New Harvest and the Good Food Institute, which are making direct progress through research and development as well as indirect progress through advocacy and philanthropy.

Plant-based and cultured meat are a promising alternative to conventional meat. As with non-animal industrial agriculture (and unlike nonindustrial animal agriculture), a food system based on plant-based and cultured meat would be capable of producing healthy, affordable food with relatively few costs for humans, nonhumans, and the environment. For instance, one study predicts that cultured meat will require only 1 percent as much land and 4-18 percent as much water as conventional meat, and that it will emit only 4-22 percent as much greenhouse gas as conventional meat (Tuomisto and de Mattos, 2011).[8] Meanwhile, as with nonindustrial animal agriculture (and unlike non-animal industrial agriculture), a food system based on plant-based and cultured meat has the potential to produce the kind of food that most people actually want to eat (assuming that we can meet some of the challenges discussed below). In short, if we develop and market these products in the right kind of way, then we can provide the world with healthy, tasty, affordable meat without having to breed, raise, and kill hundreds of billions of animals; decimate forests, wetlands, and other natural spaces; increase risk of cancer, global pandemics, and other such health impacts; intensify the ecological impacts of global climate change; and so on along the way.[9]

At least in theory, then, plant-based and cultured meat seem to be exactly the kind of alternative that we need in order to move away from, rather than further toward, dependence on industrial animal agriculture. The question now is, How can we realistically move toward this solution without succumbing to the many challenges that stand in the way?

5. NEW QUESTIONS, CHALLENGES, AND OPPORTUNITIES

The final step in making the case for plant-based and cultured meat is to identify the new questions that these products are likely to raise and the new challenges and opportunities that supporters of these products are likely to face, and to show that we can answer these questions, meet these challenges, and take advantage of these opportunities. This step is doubly important: it is essential not only for making the case for plant-based and cultured meat but also for indicating how to realize the promise of these technologies rather than develop and market them in ineffective or counterproductive ways.

For an example of a promising technology that has not yet been able to fully live up to its promise, consider genetically modified organisms (GMOs). Once

hailed as a technological silver bullet that could usher in a green revolution and feed the world, GMOs are now widely regarded, rightly or wrongly, as more problem than solution at present. Part of the issue in this case has been technological: it turns out to be more difficult to engineer crops that are, say, flood and drought resistant than crops that are, say, herbicide and pesticide resistant. Another part of the issue is social and political. Many people are concerned that GMOs are "unnatural." And, while companies could focus on goals such as flood and drought resistance in theory, many companies have not done so in practice, since they tend to make decisions based on short-term economic self-interest rather than on long-term moral, social, political, and economic considerations. As a result, the best-case scenario for GMOs at present is that people develop and market this technology in a positive direction moving forward, in spite of the fact that (a) many of the people who currently support GMOs are not prioritizing the right goals and (b) many of the people who currently prioritize the right goals are not supporting GMOs.[10]

Will plant-based and cultured meat suffer the same (short-term) fate as GMOs? That depends on what we do over the next decade. Plant-based and cultured meat are similar enough to GMOs that they will face many of the same challenges. But they are also different in certain ways—and we also have the benefit of hindsight—so supporters of plant-based and cultured meat may well be able to overcome these challenges if they are careful—and lucky. I will not be able to discuss every challenge that plant-based and cultured meat will face in this paper (nor will I be able to discuss any particular challenge in full detail). But my hope is to survey what I take to be some of the main challenges and say a bit about how supporters of plant-based and cultured meat might be able to overcome them.

5.1. Conceptual questions

First, conceptual and linguistic questions will arise. Plant-based and cultured meat will disrupt standard ways of thinking and talking about what we eat and who we are. And, since our concepts shape our experiences and our experiences shape our behaviour, these disruptions will be more than conceptual and terminological: they will be practical too. We will therefore have to try to clarify and/or modify our thinking and communicating about what we eat and who we are in ways that are both accurate and useful in light of these disruptions.

For an example of how plant-based and cultured meat will disrupt our thinking about what we eat, consider the following question: are plant-based and cultured meats real meat? This question is harder to answer than it might first appear. Many people think of meat as flesh that came from a once-living animal. But do they think that because meat is, in their view, *essentially* flesh that came from a once-living animal? We have at least three options. (These are not exhaustive.) First, we can say that meat is essentially flesh that came from a once-living animal. On this account, both the substance and origin of meat are essential, and so neither plant-based nor cultured meat counts as real meat, since they have

other origins. Second, we can say that meat is essentially flesh. On this account, the substance but not the origin of meat is essential, and so plant-based and cultured meats count as real meat whether or not they have the same origin as conventional meat (as long as they have the same substance, which some but not all will). Third, we can say that meat is, essentially, anything that plays the same functional—i.e., aesthetic and nutritional—role as conventional meat. On this account, neither the substance nor the origin of meat is essential, and so plant-based and cultured meat count as real meat whether or not they have the same origin or substance as conventional meat (as long as they have the same function, which many but not all will). Of course, similar questions will also arise for other animal products such as milk and eggs, and similar answers will be available in these cases as well.

Now consider two examples of how plant-based and cultured meat will disrupt our thinking about who we are. First, consider how these products will affect people whose self-conceptions involve meat consumption. This might include people who see their gender identity, sexual orientation, cultural identity, religious identity, national identity, professional identity, and so on as connected to meat consumption. In this case the question will be, Is my identity as someone who eats meat compatible with my eating plant-based and cultured meat instead of conventional meat? If so, then people with these identities can start replacing conventional meat with plant-based and cultured meat while keeping their sense of identity intact (though many of the standard ways of thinking and talking about meat consumption might have to change). If not, then people will have to ask, Should I try to keep my current identity, or should I adopt a new identity as someone who eats plant-based and cultured meat instead of conventional meat? Of course, similar questions will arise for cultural and religious practices and traditions that centre around meat as well. In this case people will have to ask, Are these practices and traditions compatible with our eating plant-based meat and cultured meat instead of conventional meat? And if not, how should we resolve this conflict?[11]

Similarly, consider how these products will disrupt our thinking about identities that involve *abstention* from meat consumption. Those whose identities involve such abstention might include ethical vegans as well as people whose cultural or religious identities involve respect for certain species of animal or adherence to certain kinds of custom. In this case the question will be, Is my identity as someone who never eats any meat at all, or who never eats certain kinds of meat, compatible with eating plant-based and cultured meat? If so, then people with these identities can start eating plant-based and cultured meat while keeping their sense of identity intact (with the same caveats as before). If not, then people will have to ask, Should I try to keep my current identity as someone who never eats any meat at all, or who never eats certain kinds of meat, or should I adopt a new identity as someone who eats plant-based meat and cultured meat? As before, similar questions will arise for cultural and religious practices and traditions that centre around not eating meat, and similar answers will be available for these questions. We will return to these issues below.

Of course, people express concepts through language, and so each of these conceptual questions will correspond to a linguistic question about meat and about identities involving eating meat and not eating meat. People are already debating these issues now. For example, proponents of conventional meat call conventional meat "real meat" and plant-based and cultured meat "fake meat" so that they can frame conventional meat as real and standard and plant-based and cultured meat as fake and nonstandard. They also describe meat eating as masculine and veganism as feminine so that they can draw from sexist assumptions about gender, power, and normalcy to frame meat eaters as strong and normal and vegans as weak and deviant (Adams, 1990). Meanwhile, proponents of plant-based and cultured meat call conventional meat "animals," "bodies," and/or "violence" and plant-based and cultured meat "clean meat," "cultured meat," and/or "cruelty-free meat" so that they can frame conventional meat as harmful and plant-based and cultured meat as (relatively) harmless.[12] As we move forward, it will be interesting to see how efforts to frame conventional meat as flesh, not food, interact with efforts to normalize plant-based and cultured meat through comparison with conventional meat.

One complication is that no matter how we answer these conceptual and linguistic questions in theory, we may find that for many people the origin, substance, and functional profile of food are bound together in practice. For example, some people think that plant-based and cultured meat are a threat to food culture, since, they think, food should be about aesthetics, not ethics. On the surface, this is a strange view to hold, since, even if we accept that food should be about aesthetics, plant-based and cultured meat will increase, not decrease, our options for gustatory pleasure (to say nothing of morally permissible gustatory pleasure). One possibility is that people are unaware of this fact. Another, compatible possibility is that people enjoy eating meat that they think came from a once-living animal more than meat that they think did not (whether or not these products are, in fact, substantively identical), in much the same way that many people enjoy eating food that they think came from a name-brand company more than food that they think did not (whether or not these products are, in fact, substantively identical).[13] If so, this would be disturbing, though not surprising. Either way, this tension reveals an important fact: when conceptual and linguistic disruptions occur, people can react defensively, in an attempt to preserve familiar ways of thinking, talking, and behaving. That will add to the social and political challenges that stand in the way of widespread adoption that we will consider below.

There is a sense in which these conceptual and linguistic questions are familiar. There have always been boundary cases that put pressure on standard ways of thinking and talking about food, and there have always been competing interests that motivate different answers to these questions. In the case of meat and identities related to meat consumption, these boundary cases have traditionally concerned the type of animal in question (e.g., are bivalves meat in the relevant sense?), the amount of animal in question (e.g., are foods that contain trace amounts of animal flesh meat in the relevant sense?), and (for identities involv-

ing abstention) the method of acquisition in question (e.g., is eating roadkill or scrounged meat compatible with veganism in the relevant sense?). But up until now these boundary cases have been exceptional enough that people could disagree about them (or not know what to think about them) while still preserving their identity as people who do, or do not, eat meat as a general matter. However, the prospect of plant-based and cultured meat changes all that. If people decide that these products count as real meat, then these "boundary cases" will not be exceptional at all. So, people will have to take a stand on whether or not to eat these products, and they may or may not then have to revise or replace certain aspects of their self-conceptions and self-descriptions as a result.

5.2. Social questions

There will also be social, cultural, and religious questions that are connected to these conceptual and linguistic questions. As we have seen, many people and groups have identities, practices, and traditions that centre around eating meat or not eating meat, and they will accept or reject plant-based and cultured meat based in part on how they see these products interacting with who they are and what they care about. So, in addition to (and as part of) asking how to revise our concepts of what we eat and who we are, supporters should also ask how to clarify and revise the relevant social, cultural, and religious practices and traditions—and how to persuade others to do the same.

One source of resistance to widespread adoption of plant-based and cultured meat will be personal. People like what they like, in part because they have preferences among foods that they have experience with, and in part because they have preferences against experiencing new kinds of food. So not only will there be resistance based on taste and habit. There will also be resistance based on the impression that plant-based and cultured meat are unnatural and, as a result, disgusting or dangerous. This may well happen more as plant-based and cultured meat become increasingly similar to conventional meat, since plant-based and cultured meat may then enter the uncanny valley where they disrupt our conceptual and perceptual systems and consequently appear distasteful to many people.[14]

Another source of resistance to widespread adoption will be cultural and religious. Food is central not only to many of our personal practices but also to many of our family, cultural, and religious traditions. People eat certain kinds of foods to mark certain kinds of occasions, and in some cases they tell stories about the food as part of the ritual. Of course, these stories are often misleading, since, for example, the idea of happy animals making noble sacrifices for human benefit often fails to square with the reality of modern industrial animal agriculture. Still, people are attached to these stories, and these attachments can be difficult to dislodge even if the stories are based on myth, and even if plant-based and cultured meat are not, in fact, any less compatible with the relevant cultural traditions than conventional meat is (especially given the reality of modern industrial animal agriculture).

Meeting these challenges requires persuading people to accept interpretations of, or revisions to, their personal, cultural, and religious identities, practices, and traditions to make these compatible with eating plant-based and cultured meat, so that supporting these products can be seen as identity preserving instead of as identity disrupting. However, while it might be clear that supporters should do this in theory, it might not be clear how they can do it effectively in practice. For example, there are two tempting strategies for persuading others to accept plant-based and cultured meat that supporters should, if not avoid, then at least be cautious about.

First, supporters should be cautious about focusing too much on rational appeals (such as education and argumentation) as well as too much on nonrational appeals (such as branding, marketing, and celebrity endorsements). Rational appeals are tempting because the relevant information and arguments are so compelling, and because nonrational appeals are often ineffective and counter-productive, especially in cases where one is advocating for a deviation from the status quo. And in this case, nonrational appeals in favour of "deviant" products such as plant-based and cultured meat are more likely to be seen as manipulative and, consequently, as objectionable than nonrational appeals in favour of "standard" products such as conventional meat. Meanwhile, nonrational appeals are tempting because they can shape our conceptions, perceptions, and behaviour in powerful ways, and because rational appeals are often ineffective and counterproductive, especially, again, in cases where one is advocating for a deviation from the status quo. And in this case, discourse around plant-based and cultured meat will be taking place in a conceptual, linguistic, social, political, and economic context that makes these products seem less appealing than conventional meat, which places supporters of the latter at a dialectical disadvantage. I think that the correct conclusion to draw is that thoughtful, strategic, rational appeals and (certain) nonrational appeals are both necessary. Supporters of plant-based and cultured meat should promote the benefits of these products as well as make them appear desirable through branding, marketing, celebrity endorsements, and so on (both in favour of plant-based and cultured meat and against conventional meat).[15]

Second, supporters should also be cautious about promoting plant-based and cultured meat to everyone directly, as well as about not promoting them to many people at all. Supporters might be tempted to promote them to many people directly because they might think, We have compelling information and arguments and we want to share them with as many people as possible. But that might be a mistake in many cases, since, if supporters of these products are coming primarily from one cultural group, then they might appear to be (as well as actually be) promoting these products in culturally imperialist ways.[16] Meanwhile, supporters might be tempted to not promote plant-based and cultured meat to many people at all because they might think, We can promote these products most effectively within our own culture, and we also want to avoid the appearance or reality of cultural imperialism. But that would be a mistake too, since our food system is a global collective-action problem that requires a global

collective-action solution. I think that the correct conclusion to draw here is that supporters should attempt to promote plant-based and cultured meat to everyone, but not always directly. In particular, they should attempt to promote plant-based and cultured meat (a) directly within their own culture and (b) indirectly within other cultures through collaboration with cultural insiders who can then promote them directly—as well as through engagement in multi-issue food activism and through the promotion of diversity, equity, and inclusion in food movements so that more cultural traditions are represented in these spaces in the first place.[17]

These social questions are related to the conceptual and linguistic questions discussed in the previous section. In particular, supporters of plant-based and cultured meat have to consider how their conceptions of meat as well as of personal, cultural, and religious identities, practices, and traditions involving meat will affect uptake of plant-based and cultured meat across cultures and languages. For example, if you want everyone to keep eating animals, then you might try to accomplish that in part by defining meat in terms of its origin (and using language to reinforce that) so that you can frame conventional meat as the only real meat. Meanwhile, if you want everyone to stop eating animals, then you might try to accomplish that in part by defining meat independently of its origin (and using language to reinforce that) so that you can frame plant-based and cultured meat as real meat too. Similarly, if you want everyone to keep eating animals, then you might try to accomplish that in part by interpreting cultural or religious identities, practices, and traditions as compatible with eating conventional meat and incompatible with eating alternatives (and using language to reinforce that). Whereas if you want everyone to stop eating animals, then you might try to accomplish that in part by interpreting cultural or religious identities, practices, and traditions as compatible with eating alternatives and incompatible with eating conventional meat (and using language to reinforce that). This might itself seem manipulative. But there is no neutral way to use language, and there is no objective fact of the matter about how to resolve disruptions in our current language, so we might have no choice but to think morally and politically about which ways of using language will be most useful moving forward.[18]

5.3. Political questions

There will also be political, economic, and technical questions that will be related to these conceptual, linguistic, social, cultural, and religious questions. What the general public thinks about these products will both impact and be impacted by what business and political leaders think about them—and whether they use their considerable resources to support or undermine these products. So, in addition to asking how to think and talk about plant-based and cultured meat and how to promote these products to the public, supporters should also be asking how to promote these products to business and political leaders.

One source of resistance to widespread adoption of plant-based meat and cultured meat will be political. As I indicated above, part of why individuals and groups may be resistant to plant-based and cultured meat is that countries such

as the United States have made conventional meat appear to be more affordable than it actually is through taxes, subsidies, and deregulation. For example, many major food corporations benefit from low taxes and high subsidies, and they also benefit from not having many laws that regulate their behaviour, not having much enforcement of these laws, and not having steep fines in cases of enforcement. The upshot is that many states have empowered major food corporations to consume land, water, and energy; pollute land, water, and air; and contribute to global antimicrobial resistance and anthropogenic climate change with few if any resulting internal costs. The general public is then responsible for paying for these externalized costs, which allows major food corporations to sell meat at artificially low prices. Meanwhile, plant-based meat and cultured meat experience different political treatment. Not only do they not enjoy the same level of political support as conventional meat, but they also face additional political obstacles, including possible legal challenges surrounding their use of terms associated with conventional meat.[19]

Another, related, source of resistance to widespread adoption will be economic. Part of why countries such as the United States have made conventional meat appear to be so accessible and affordable is that food corporations have, through donations and lobbying, made conventional meat appear worthy of support to politicians and, through marketing, made conventional meat appear desirable to the public. As a result, they both directly and indirectly persuade political leaders to support conventional meat more than the alternatives. And, while change is possible, a further obstacle is that many food corporations have a lot of power (which can make it difficult to work around them), and they also have incentive to maintain the status quo (which can make it difficult to work with them). In particular, they have a lot of power because of the vertical integration of our food system. Instead of having one company make food, another distribute it, another sell it, and so on, we have individual corporations doing all of the above, which reduces competition and increases profit for these corporations. These corporations then have incentive to maintain the status quo because they have incentive to maximize short-term economic self-interest rather than long-term economic self-interest and/or moral goods. And, rightly or wrongly, in many cases they appear to think that continuing current practices is a more responsible choice, by this standard, than adopting new practices that involve accepting expected short-term costs in exchange for expected long-term benefits.[20]

Another, related, source of resistance to widespread adoption will be technical. Part of why food corporations have promoted conventional meat so much is that they know how to make and sell these products and they have an infrastructure in place for doing so. In contrast, they do not know as much about how to make or sell plant-based or cultured meat or have an infrastructure in place for doing so. Especially in the case of cultured meat, some of the issue here is technological. For example, companies are currently able to make cultured duplicates of simple, relatively processed meats like hamburgers and chicken patties, but they are not yet able to make cultured duplicates of complex, relatively nonprocessed meats like steak or ribs. Additionally, it currently costs much more money to

produce a cultured hamburger or chicken patty than it costs to produce a conventional hamburger or chicken patty (even setting aside the effect of externalized costs). Fortunately, the cost of producing cultured meat has already gone down substantially, and it will likely keep doing so as research continues and other conditions change (though there are no guarantees about how far the price can go down). But, unless and until cultured meat becomes competitive with conventional meat (which may require both lowering the price of cultured meat and raising the price of conventional meat), this technical challenge will remain critically important.[21]

As before, it is crucial to emphasize how interconnected these challenges are, with each other as well as with the conceptual, linguistic, social, cultural, and religious issues discussed above. As we have seen, our current conceptual and linguistic frameworks concerning plant-based and cultured meat make it harder to find social, cultural, and religious support for these products, which, in turn, makes it harder to find political and economic support for these products, which, in turn, leads to challenges in research and development. Challenges in research and development then make it harder to find political and economic support for these products, which, in turn, makes it harder to find social, cultural, and religious support for these products, which, in turn, makes it harder to disrupt current conceptual and linguistic frameworks concerning these products.

These connections among challenges can make a transition away from conventional meat seem daunting, even hopeless. If each change is necessary for all the others, how can supporters of plant-based and cultured meat bring any of these changes about? But these connections can also be an opportunity. Granted, supporters of plant-based and cultured meat might not be able to fully bring about many of these changes in isolation. But they can at least make incremental progress with respect to many of these changes in isolation, and the more progress they make with respect to each, the more progress will become possible with respect to all. What this means is that supporters of plant-based and cultured meat can solve this (literal) chicken-and-egg problem by pursuing all of these changes at once: they can attempt to persuade people to think and talk about meat differently, attempt to persuade the public to demand alternatives to conventional meat, attempt to persuade politicians to support these alternatives, attempt to persuade corporate executives to develop these alternatives, attempt to persuade scientists to research these alternatives, and attempt to persuade activists, advocates, and philanthropists to support all of the above.

As I have been indicating throughout this paper, part of why collective incremental progress is likely to be promising with plant-based and cultured meat than with other alternatives is that plant-based meat and cultured meat are better positioned to be acceptable to a critical mass of relevant stakeholders. Compare this with the following: when animal activists have worked with food companies to implement new, more humane housing or killing systems, critics have claimed that these improvements do at least as much harm than good, since they humanewash and greenwash industrial animal agriculture at least as much as

they mitigate its harms. Critics have also predicted that this strategy of incremental reform will lead to a dead end, since food companies will stop working with food activists as soon as they stop identifying mutually advantageous reforms (and any reform that makes a real difference for humans, nonhumans, or the environment will likely not be mutually advantageous) (Francione and Garner, 2010). But even if we share this concern about incremental reform in general, we might see incremental reform concerning plant-based and cultured meat in particular as a partial exception. That is, we might see plant-based and cultured meat as the rare kind of innovation that, if developed and promoted in the right kind of way, could allow for mutually beneficial moderate change in the short term as well as mutually beneficial radical change in the long run. As a result, these products have the potential to be acceptable to many relevant parties in the short term as well as in the long run, including activists who are normally wary of changes that companies see as acceptable and companies who are normally wary of changes that activists see as acceptable.

Does that mean that food activists, food companies, and other stakeholders should think of plant-based and cultured meat as part of the ideal food system they should be aiming for in the long run? Maybe, maybe not. It might be that everyone would find such a food system acceptable, or it might be that at some point, a point that such a food system might help make possible, people would choose to transition to a fully (or mostly) meatless food system. Either way, plant-based and cultured meat appear to represent a rare opportunity to bring everyone to the table so that they can work together to transition away from conventional meat. If food companies can sell the same kind of product at an (eventually) lower price, they can rationally choose to support this technology. Then politicians might do the same. Then the general public might do the same. And vice versa.[22]

5.4. Moral questions

Finally, plant-based and cultured meat will provoke moral questions, which are related to all of the above questions. In short, all of the above questions are primarily about how to effectively promote plant-based and cultured meat in spite of obstacles that may stand in the way. However, supporters also face questions about whether or not plant-based meat and cultured meat are morally permissible in the first place. Moreover, many of these questions will come from precisely the people who most want to bring an end to industrial animal agriculture: animal and environmental ethicists, activists, and advocates. Many of their concerns are reasonable, and their support will be important. So, in addition to asking pragmatic questions about how to promote these products, supporters should also be asking principled questions about the ethics of these products.

One moral concern that many people have is that, as we have seen with GMOs, plant-based meat and cultured meat are "unnatural." Why are people concerned about this? They could be drawing from the idea that human intervention in the

natural order is wrong in itself, and/or from the idea that human intervention in the natural order does more harm than good. Insofar as they are drawing from the former idea, then the question we should be asking is, Why think that human intervention in the natural order is wrong in itself? After all, as Mill (1904) argues, human activity is either natural or not. If human activity is natural, then it is never an intervention in the natural order, and so is never wrong on this view. If human activity is not natural, then it is always an intervention in the natural order, and so is always wrong on this view. Either way, this is not an especially useful guide to action. In contrast, insofar as the people making this argument are drawing from the idea that human intervention in the natural order does more harm than good, then the question we should be asking is, Why think that human intervention will do more harm than good in this case? After all, realistically, the choice in this case is between two kinds of human intervention in the natural order: (1) conventional meat and (2) plant-based/cultured meat. And one might add that while we do not know what every impact of plant-based meat and cultured meat will be, it is hard to imagine that they could have anything approaching the negative impact that conventional meat has.[23]

In response to this claim, one might argue that we have more alternatives available to us than plant-based and cultured meat: we also, notwithstanding the concerns raised above, have plant-based foods that in no way, shape, or form resemble meat. One might then argue that, while plant-based meat and cultured meat might do more good than harm in the short term, they will do more harm than good in the long run relative to fully "meatless" alternatives. Why? It is because, insofar as plant-based meat and cultured meat resemble conventional meat, they will support the idea of animals as in the "category of the edible" (Gruen, 2011, p. 101-104) as well as the idea of corporate control over the means of food production.[24] Of course, people disagree about these predictions, and they also disagree about what follows from these predictions for the ethics of plant-based and cultured meat. Ultimately, this is an extension of the debate considered above, about whether plant-based meat and cultured meat risk greenwashing and humanewashing harmful systems and leading to a dead end. However, whereas we were previously considering these questions at the level of particular industries, we are now considering them at a broader and deeper level. In particular, the concern here is that, if we pursue the end of animal agriculture in the wrong way (i.e., in a way that supports rather than disrupts oppressive ideologies and systems), then we will neither reach our goal (because we will still reach a dead end) nor be praiseworthy for however far we get (because we will still be supporting oppressive ideologies and systems as a means to our end).

I think that this kind of concern is reasonable. However, I also think that it would be a mistake to reject plant-based and/or cultured meat on the basis of this kind of concern. Instead, I think that people should support these products as part of the solution but not as the full solution. On this view, some people should be promoting moderate change within the relevant ideologies and systems (e.g., by promoting plant-based and cultured meat) and other people should be promot-

ing radical change to the relevant ideologies and systems (e.g., by challenging the ideas of human supremacy and of corporate control over the means of food production). Plausibly, many people should be doing both. Granted, this kind of pluralistic approach will likely produce conflict and disagreement within the animal and environmental movements. But it will also allow these movements to do more good overall than they would otherwise be able to do. For example, advocacy for radical change can make adoption of plant-based and cultured meat seem more reasonable in the short term (since plant-based and cultured meat can be framed as a moderate approach to addressing the concerns being raised). And then adoption of plant-based and cultured meat can make radical change seem more reasonable in the long run (since the more people achieve independence from harmful systems, the more people are willing to see those systems for what they are).

This point is related to tensions that I have been discussing throughout this paper. In particular, with respect to all of the challenges that we considered, there is a tension between (a) pursuing continuity with current systems where this is useful and (b) pursuing disruption to current systems where this is useful. For example, with respect to conceptual issues, there is a tension between showing that plant-based and cultured meat is compatible with current discourse and challenging this discourse.[25] With respect to social issues, there is a tension between showing that plant-based and cultured meat is compatible with current practices and challenging these practices. And with respect to political issues, there is a tension between showing that plant-based and cultured meat is compatible with current systems and challenging these systems. It is hard to find and strike the right balance in different situations, but I think that this is ultimately what we should be trying to do. (Of course, this is not to say that we should never advocate for extreme views too, since this kind of advocacy might be an important part of a division of labour that allows for the animal and environmental movements to find and strike the right kind of balance overall.)

There is one moral issue worth mentioning here, which is that at least some ways of producing plant-based and cultured meat still make use of nonhuman animals as part of the research process (e.g., some plant-based-meat producers currently test products on animals) as well as part of the production process (e.g., cultured-meat researchers currently use nonhuman fetal serum as a growth medium). Granted, even if these practices continued, plant-based- and cultured-meat producers would still not be causing nearly as much harm as conventional-meat producers, but they would still be causing substantial harm. As a result, some animal activists may object to some plant-based- and cultured-meat production on the grounds that it harms animals as mere means to our ends. But we can offer two responses to this objection. First, if producers can replace these methods of research and production with others, then these concerns will disappear (and they may well be able to do that soon). Second, we should keep in mind that no food system is harmless. Even plant-based farming harms wild animals in many ways. As a result, our goal should not be to do no harm at all through food production. Our goal should rather be to do as little harm as possible through

food production. And I think that if we develop and promote plant-based and cultured meat in the right kind of way, these products can be part of the food system that can accomplish this aim, at least in the short term.

6. CONCLUSION

We are currently at a crossroads. With industrial animal agriculture, we created a food system that causes an unimaginable amount of harm in the world, and this amount of harm is rising with each passing year. We also, for the first time in a long time, have a possible way out—a way out that, at present, does not yet have a reputation, good or bad, with the general public, business leaders, or political leaders. In ten years, that might not be the case. So, what we do over the next decade in terms of developing plant-based meat and cultured meat, labeling and marketing them, and introducing them to all the stakeholders discussed here may well determine whether or not we are able to right this wrong before a global pandemic or global ecological collapse forces our hand.

ACKNOWLEDGMENT

Thanks to the editors of this volume and two anonymous referees for helpful discussion and feedback, and to Dale Jamieson for extensive discussion on this topic and feedback on multiple drafts of this paper.

NOTES

[1] For more on the nonhuman impacts of industrial animal agriculture, see Pew Commission, 2008; Schlottmann and Sebo, 2018; and Singer, 2009. For an estimate of the total number of humans who have ever lived throughout history, see https://www.prb.org/howmanypeople-haveeverlivedonearth/.

[2] For more on these issues involving production and consumption, see sections 11 and 12 in Barnhill, Budolfson, and Doggett, 2017.

[3] For more, see Foer, 2010; Pew Commission, 2008; and Schlottmann and Sebo, 2018.

[4] For more, see Pew Commission, 2008; Schlottmann and Sebo, 2018; and Steinfeld, 2006.

[5] See McWilliams, 2009, and Stănescu, 2016, for more on these issues.

[6] I am using "vegan" instead of "vegetarian" since, while this paper is primarily about production and consumption of meat, many of the considerations I discuss extend to production and consumption of dairy, eggs, and other animal products as well.

[7] See Henning, 2016, for more on these issues.

[8] Mattick et al., 2015, argue that these estimates are optimistic, and they may be correct. However, even if they are, cultured meat would still likely consume much less land and water and produce much less greenhouse gas than conventional meat.

[9] For more on the relative impacts of conventional meat and cultured meat, see Rorheim et al., 2016.

[10] For more on the past and future of GMOs, see McWilliams, 2009.

[11] For more on these cultural and religious issues, see Foer, 2010; Cochrane, 2012.

[12] See Patrick-Goudreau and Shapiro, 2017, for more on the semantics of meat.

[13] See Kühn and Gallinat, 2013, for more on the relationship between brand perception and taste experience.

[14] See Rozin, 2006, for discussion of the psychology of judgments about naturalness regarding food.

[15] See Young, 2001, for discussion of the limits of rational discourse in this kind of context.

[16] See Tian et al., 2016, for discussion of recent meat-consumption trends in China, and see Bajželj and Bothra, 2016, for discussion of recent meat-consumption trends in India.

[17] For discussion of the ethics of multi-issue food activism, see Holt-Giménez, 2011; and Sebo, 2018. For organizations that promote diversity, equity, and inclusion within animal advocacy, see Critical Diversity Solutions and Encompass.

[18] One complication here is that, as Marder, 2016, discusses, the word that people have for meat in some languages, such as English, is less connected to the substance and origin of meat than the word that people have for meat in other languages, such as French.

[19] For more on political support for industrial animal agriculture, see Foer, 2010, p. 149-200.

[20] For more on these economic trends, see Hoffman, 2013.

[21] For more on these technical issues, see Weele and Tramper, 2014.

[22] See McMullen, 2016, for more on these issues.

[23] See also Gruen, 2011; and Schlottmann and Sebo, 2018.

[24] See Miller, 2012; and Milburn, 2016, for discussion of this kind of critique.

[25] As Brianne Donaldson puts the point, "Is there a way to overconform to the language of 'meat' that simultaneously repurposes the term to make real changes for animals, human health and the environment while still challenging historically racist, nationalist, speciesist and sexist narratives attached to meat consumption? This effort is unfolding before us" (Donaldson, 2016, p. 195).

REFERENCES

Adams, Carol, *The Sexual Politics of Meat: A Feminist-Vegetarian Critical Theory*, New York, Bloomsbury, 1990.

———, "Ethical Spectacles and Seitan-Making: Beyond the Sexual Politics of Meat—A Response to Sinclair," in Brianne Donaldson and Christopher Carter (eds.), *The Future of Meat without Animals*, London, Rowman & Littlefield International, 2016, p. 249-256.

Bajželj, Ana and Shivani Bothra, "The Rise of Non-Veg: Meat and Egg Consumption and Production in Contemporary India," in Brianne Donaldson and Christopher Carter (eds.), *The Future of Meat without Animals*, London, Rowman & Littlefield International, 2016, p. 67-86.

Benjaminson, M. A., J. A. Gilchriest, and M. Lorenz, "In Vitro Edible Muscle Protein Production System (MPPS): Stage 1, Fish," *Acta Astronaut*, vol. 51, no. 12, 2002, p. 879-889.

Bhumitra, Jaya and Bruce Friedrich, "The Future of Animals, the Future of Food: Two Organizations Endeavour to Change Public Attitudes and Appetites," in Brianne Donaldson and Christopher Carter (eds.), *The Future of Meat without Animals*, London, Rowman & Littlefield International, 2016, p. 111-120.

Brown, Ethan, "Beyond Meat," in Brianne Donaldson and Christopher Carter (eds.), *The Future of Meat without Animals*, London, Rowman & Littlefield International, 2016, p. 1-3.

Calarco, Matthew, "Altermobilities: Animals, Mobility and the Future of Meat," in Brianne Donaldson and Christopher Carter (eds.), *The Future of Meat without Animals*, London, Rowman & Littlefield International, 2016, p. 267-276.

Carter, Christopher, "Vegan Soul: Moving beyond (Animal) Meat in Black Communities," in Brianne Donaldson and Christopher Carter (eds.), *The Future of Meat without Animals*, London, Rowman & Littlefield International, 2016, p. 217-228.

Cochrane, Alasdair, *Animal Rights without Liberation: Applied Ethics and Human Obligations,* New York, Columbia University Press, 2012.

Datar, Isha and Daan Luining, "Mark Post's Cultured Beef," *New Harvest*, 2015, Accessed October 15 2017: http://www.new-harvest.org/mark_post_cultured_beef

Datar, Isha, Erin Kim and Gilonne d'Origny, "New Harvest: Building the Cellular Agriculture Economy," in Brianne Donaldson and Christopher Carter (eds.), *The Future of Meat without Animals*, London, Rowman & Littlefield International, 2016, p. 121-132.

Donaldson, Brianne and Christopher Carter (eds.), *The Future of Meat without Animals*, London, Rowman & Littlefield International, 2016.

Donaldson, Brianne, "Exploiting Fantasy: Overconformity in Animal Agriculture, Meatless Meat and Animal Ethics," in Brianne Donaldson and Christopher Carter (eds.), *The Future of Meat without Animals*, London, Rowman & Littlefield International, 2016, p. 177-200.

Ferrari, Arianna, "Envisioning the Future of Animals through In Vitro Meat," in I. Anna S. Olsson, Sofia M. Araújo, and M. Fátima Vieira (eds.), *Food futures: Ethics, Science and Culture*, conference proceedings, 2016, p. 265-270.

Ferrari, Arianna and Andreas Lösch, "How Smart Grid Meets In Vitro Meat: On Visions as Socio-Epistemic Practices," *Nanoethics*, vol. 11, 2017, p. 75-91.

Foer, Jonathan Safran, *Eating Animals*, New York, Back Bay Books, 2010.

Francione, Gary and Robert Garner, *The Animal Rights Debate: Abolition or Regulation?*, New York, Columbia University Press, 2010.

Gross, Aaron, "Making Meaning without Meat: A How-To Guide," in Brianne Donaldson and Christopher Carter (eds.), *The Future of Meat without Animals*, London, Rowman & Littlefield International, 2016, p. 257-266.

Henning, Brian, "Towards 2050: The Projected Costs of and Possible Alternatives to Industrial Livestock Production," in Brianne Donaldson and Christopher Carter (eds.), *The Future of Meat without Animals*, London, Rowman & Littlefield International, 2016, p. 7-35.

Hoffman, Beth, "Behind the Brands: Food Justice and the 'Big 10' Food and Beverage Companies," Oxfam, 2013. Accessed October 10 2017: https://www.behindthebrands.org/images/media/Download-files/bp166-behind-brands-260213-en.pdf

Holt-Giménez, Eric (ed.), *Food Movements Unite!*, Oakland, CA, Food First Books, 2011.

Koba, Mark, "Fake Meat Sales Are Growing, But Is it Really Better For You?," *Fortune*, 2015. Accessed June 1 2017: http://fortune.com/2015/05/11/meatless-meat-sales/

Kühn, Simone and Jürgen Gallinat, "Does Taste Matter? How Anticipation of Cola Brands Influences Gustatory Processing in the Brain," *PLoS ONE*, vol. 8, no. 4, 2013, e61569.

Marder, Michael, "Meat without Flesh," in Brianne Donaldson and Christopher Carter (eds.), *The Future of Meat without Animals*, London, Rowman & Littlefield International, 2016, p. 101-110.

Mattick, Carolyn, Amy Landis, Braden Allenby, and Nicholas Genovese, "Anticipatory Life Cycle Analysis of In Vitro Biomass Cultivation for Cultured Meat Production in the United States," *Environ. Sci. Technol.*, vol. 49, no. 19, 2015, p. 11941-11949.

McMullen, Steve, "An Ethical Consumer Capitalism," in Brianne Donaldson and Christopher Carter (eds.), *The Future of Meat without Animals*, London, Rowman & Littlefield International, 2016, p. 35-49.

McWilliams, James, *Just Food: Where Locavores Get It Wrong and How We Can Truly Eat Responsibly*, New York, Hachette Book Group, 2009.

Milburn, Josh, "Chewing Over In Vitro Meat: Animal Ethics, Cannibalism and Social Progress," *Res Publica*, vol. 22, no. 3, 2016, p. 249-265.

Mill, John Stuart, 1904, "On Nature," at http://www.lancs.ac.uk/users/philosophy/texts/mill_on.htm

Miller, John, "In Vitro Meat: Power, Authenticity, and Vegetarianism," *Journal for Critical Animal Studies*, vol. 10, no. 4, 2012, p. 41-63.

Pachirat, Timothy, *Every Twelve Seconds: Industrialized Slaughter and the Politics of Sight,* New Haven, Yale University Press, 2013.

Patrick-Goudreau, Colleen and Paul Shapiro, "The Semantics of Meat," Animalogy Podcast, 2017. Accessed June 1 2017: https://www.colleenpatrickgoudreau.com/the-semantics-of-meat-with-paul-shapiro/

Pew Commission on Industrial Farm Animal Production, *Putting Meat on the Table*, 2008. Accessed December 15, 2016. http://www.pewtrusts.org/en/research-and-analysis/reports/2008/04/29/putting-meat-on-the-table-industrial-farm-animal-production-in-america

Rorheim, A., A. Mannino, T. Baumann, and L. Caviola, "Cultured Meat: An Ethical Alternative to Industrial Animal Farming," *Sentience Politics*, 2016, p. 1-14.

Ross, Russell, "The Smooth Muscle Cell," *J Cell Biol,* vol. 50, no. 1, 1971, p. 172-186.

Rowland, Michael, "Clean Meat: A Bold Prediction May Finally Come True," *Forbes*, 2017. Accessed August 15 2017: https://www.forbes.com/sites/michaelpellmanrowland/2017/06/12/clean-meat-a-bold-prediction/#471748166659

Rozin, Paul, "Naturalness Judgments by Lay Americans: Process Dominates Content in Judgments of Food or Water Acceptability and Naturalness," *Judgment and Decision Making,* vol. 1, no. 2, 2006, p. 91-97.

Schlottmann, Christopher and Jeff Sebo, *Food, Animals, and the Environment: An Ethical Approach,* New York, Routledge, 2018.

Sebo, Jeff, "Multi-Issue Food Activism," in Anne Barnhill, Mark Budolfson, and Tyler Doggett (eds.), *The Oxford Handbook of Food Ethics*, Oxford, Oxford University Press, 2018.

Shurtleff, William and Akiko Aoyagi, *History of Meat Alternatives (965 CE to 2014): Extensively Annotated Bibliography and Sourcebook*, Soyinfo Center, 2014.

Sinclair, Rebekah, "The Sexual Politics of Meatless Meat: (In)Edible Others and the Myth of Flesh without Sacrifice," in Brianne Donaldson and Christopher Carter (eds.), *The Future of Meat without Animals*, London, Rowman & Littlefield International, 2016, p. 229-248.

Singer, Peter, *Animal Liberation,* New York, Harper Perennial Modern Classics, 2009.

Smith, K. Annabelle, "The History of the Veggie Burger," Smithsonian.com, 2014. Accessed September 1, 2017: https://www.smithsonianmag.com/arts-culture/history-veggie-burger-180950163/

Stănescu, Vasile, "Beyond Happy Meat: The (Im)Possibilities of 'Humane,' 'Local' and 'Compassionate' Meat," in Brianne Donaldson and Christopher Carter (eds.), *The Future of Meat without Animals*, London, Rowman & Littlefield International, 2016, p. 133-154.

Steinfeld, Henning, *Livestock's Long Shadow*, Food and Agriculture Organization of the United Nations, 2006. Accessed December 15, 2016. http://www.fao.org/docrep/010/a0701e/a0701e00.htm

Stephens, N., Kramer, K., Denfeld, Z. and Strand, R., *What Is In Vitro Meat? Food Phreaking #2*, The Center for Genomic Gastronomy, 2015. Accessed June 1 2017: http://bura.brunel.ac.uk/handle/2438/12562

Tian, Song, Yao Wang, and Mo Zhao, "The 'Vegetable Basket Project': Tracking the Increase of Meat Production and Consumption in China since the 1980s," in Brianne Donaldson and

Christopher Carter (eds.), *The Future of Meat without Animals*, London, Rowman & Littlefield International, 2016, p. 49-66.

Tuminello, Joseph, "The Future of Industrial Agriculture: An Environmental Justice Perspective," in Brianne Donaldson and Christopher Carter (eds.), *The Future of Meat without Animals*, London, Rowman & Littlefield International, 2016, p. 155-177.

Tuomisto, Hanna L. and M. Joost Teixeira de Mattos, "Environmental Impacts of Cultured Meat Production," *Environ. Sci. Technol*, vol. 45, no. 14, 2011, p. 6117–6123.

Vidal, John. "The Future of Food," *The Guardian*, 2012. Accessed June 1 2017: https://www.theguardian.com/global-development/2012/jan/22/future-of-food-john-vidal.

Weele, Cor van der and Johannes Tramper, "Cultured Meat: Every Village Its Own Factory?" *Trends in Biotechnology*, vol. 32, no. 6, 2014, p. 294-296.

Wolpa, Adam, "Seeing Meat without Animals: Attitudes for the Future," in Brianne Donaldson and Christopher Carter (eds.), *The Future of Meat without Animals*, London, Rowman & Littlefield International, 2016, p. 87-96.

Wurgaft, Benjamin Aldes, "But Will the Lab-Grown Meat be Kosher?," *The Revealer*, 2016. Accessed June 1 2017: https://wp.nyu.edu/therevealer/2016/11/07/but-will-the-lab-grown-meat-be-kosher/

Young, Iris, "Activist Challenges to Deliberative Democracy," *Political Theory*, vol. 29, no. 5, 2001, p. 670-690.

WELFARE, HEALTH, AND THE MORAL CONSIDERABILITY OF NONSENTIENT BIOLOGICAL ENTITIES

ANTOINE C. DUSSAULT
ENSEIGNANT, COLLÈGE LIONEL-GROULX
MEMBRE DU CENTRE INTERUNIVERSITAIRE DE RECHERCHE SUR LA SCIENCE ET LA TECHNOLOGIE

ABSTRACT:

This paper discusses a challenge to the claims made by biocentrists and some ecocentrists that some nonsentient biological entities (e.g., organisms, species, ecosystems) qualify as candidates for moral considerability. This challenge derives from Wayne Sumner's (1996) critique of "objective theories of welfare" and, in particular, from his critique of biocentrists' and ecocentrists' biofunction-based accounts of the "good of their own" of nonsentient biological entities. Sumner's critique lends support to animal ethicists' typical skepticism regarding those accounts, by contending that they are more plausibly interpreted as accounts of the perfectionist value than of the welfare of nonsentient biological entities. In response to this critique and its implication that those function-based accounts would fail to qualify nonsentient biological entities as candidates for moral considerability, it is argued that those accounts should be interpreted as ones of the health of biological entities rather than ones of their perfectionist value. It is suggested that their being bearers of health may be sufficient for nonsentient biological entities to qualify as candidates for moral considerability, such that biocentrists and ecocentrists could grant Sumner and animal ethicists' contention that the function-based accounts of the good of their own of nonsentient biological entities are not accounts of their welfare, while not giving up on the project of defending those entities' moral considerability.

RÉSUMÉ :

Cet article discute d'une objection à la thèse défendue par plusieurs biocentristes et écocentristes selon laquelle les entités biologiques non sentientes (ex. : organismes, espèces, écosystèmes) se qualifieraient comme candidates à la considérabilité morale. Cette objection découle de la critique des « théories objectives du bien-être » formulée par Wayne Sumner (1996) et, plus particulièrement, de sa critique des théories du « bien propre » défendues par les biocentristes et les écocentristes, lesquelles définissent ce bien en relation avec les concepts biologiques de fonction et de téléologie. La critique de Sumner offre un certain appui au scepticisme généralement suscité par ces théories chez les auteur-e-s œuvrant dans le domaine de l'éthique animale, en ce qu'elle fait valoir que celles-ci sont plus plausiblement interprétées comme concernant une forme de valeur perfectionniste s'appliquant aux entités biologiques non sentientes que comme concernant leur bien-être. Cet article soutient que la manière la plus prometteuse de répondre à cette critique pour les biocentristes et les écocentristes consiste à faire valoir d'une part, que les théories du bien propre qu'elles et ils défendent doivent être interprétées comme des théories de la santé des entités biologiques plutôt que comme des théories (de leur bien-être ou) de leur valeur perfectionniste, et d'autre part, que la possibilité pour les entités biologiques non sentientes d'être en plus ou moins bonne santé suffit à les rendre candidates à la considérabilité morale.

1. INTRODUCTION

A crucial issue that has divided animal ethicists and many environmental ethicists is that of whether sentience should be regarded as a necessary condition for candidacy for *moral considerability*. Since Kenneth Goodpaster's (1978) foundational paper on moral considerability, this issue is usually conceived as being conceptually tied to that of whether only sentient beings, or also some nonsentient biological entities, are genuinely able to be benefited or harmed by states of affairs. To be morally considerable is to be an entity that counts morally—that is, an entity with respect to which moral agents have *prima facie* ethical obligations. Thus, insofar as it is conceivable to have obligations only to entities that can in some sense benefit or be harmed by one's actions, a minimal requirement for being a candidate for moral considerability seems to be the ability of being benefited or harmed by states of affairs (and the actions of moral agents). This, as many environmental philosophers have remarked, requires those entities to *have a good of their own* in reference to which states of affairs (and the actions of moral agents) can be said to be good or bad *for them*. Thus, animal ethicists typically maintain that only sentient beings have a good of their own (or at least one that has ethical relevance) and that, consequently, all and only sentient beings are genuine candidates for moral considerability. In contrast, many environmental ethicists maintain that sentience is *not* necessary for having a good of one's own, such that candidacy for moral considerability extends beyond sentience. Those environmental ethicists include *biocentrists*, who defend the view that moral considerability should be ascribed to *all* individual organisms (sentient or not) (e.g., Attfield, 1981; Taylor, 1986; Varner, 1998), as well as (some) *ecocentrists*, who advocate extensions of moral considerability to ecological wholes such as species, ecological communities, and ecosystems (e.g., Johnson, 1991, 1992; Fox, 1995, chap. 6).

Those biocentrists and ecocentrists often adopt as their starting point the observation that ordinary language commonly includes statements such as "nutrients are *good for* plants" and "invasive species are *bad for* ecosystems," which implicitly ascribe a good of their own to nonsentient organisms and ecological wholes (e.g., Goodpaster, 1978, p. 319; Attfield, 1981, p. 38). Those "goodness for" statements, they argue, can be analyzed in terms of the biological notions of function and teleology that apply to organisms and eventually to some ecological wholes, such that what is good or bad for those organisms and wholes can be understood as what favours or impedes the fulfillment of their functional capacities or teleological tendencies.[1] In the view of those biocentrists and ecocentrists, such functional capacities and teleological tendencies endow nonsentient organisms and wholes with a good of their own of an essentially similar kind as the one that applies to sentient beings (for simplicity, I will refer to those accounts of the good of their own of nonsentient biological entities as "biofunction-based" accounts). Thus, they claim, their having functional capacities or teleological tendencies endows individual organisms and wholes with a *welfare* or with *interests*, such that they are just as genuine candidates for moral considerability as sentient beings.

It should be noted that such claims are more commonly made by biocentrists than by ecocentrists. Nevertheless, some ecocentrists have also defended function-based accounts of the good of their own of ecological wholes (Johnson, 1991, 1992; Fox, 1995, chap. 6).[2] Insofar as the issues I will discuss arise similarly with respect to individual organisms as to wholes, I will discuss them alternatively as applying specifically to nonsentient organisms or more generally to nonsentient biological entities (I will adopt the narrow focus on nonsentient organisms when discussing authors mainly concerned with organisms and the broader focus on nonsentient biological entities elsewhere).[3]

Claims that nonsentient biological entities have a good of their own and qualify as candidates for moral considerability typically raise skepticism on the part of animal ethicists. In response to such claims, animal ethicists usually insist that the biofunction-based notion of goodness of one's own that applies to those entities is conceptually distinct from the one that underpins sentient beings' moral considerability (e.g., Sapontzis, 1987, p. 116-117; Singer, 1993, p. 276-280). Statements such as "nutrients are *good for* plants" and "being hit by cars is *bad for* cats" do *not* refer to the same notion of goodness of one's own, and only the sentience-based notion referred to by the latter statement has relevance to moral considerability. Therefore, animal ethicists contend, their being bearers of a biofunction-based good of their own does *not* qualify nonsentient biological entities as candidates for moral considerability.

In this paper, I wish to discuss a neglected challenge faced by biofunction-based accounts of the good of their own of nonsentient biological entities. This challenge lends support to animal ethicists' contention that those accounts concern a notion of goodness of one's own that has no relevance to moral considerability.[4] This challenge derives from Wayne Sumner's (1996) discussion of *welfare* or *prudential value*, notions that he takes to be about an entity's *faring well* or *doing well*. Specifically, the challenge derives from Sumner's criticism of what he calls *objective theories of welfare*—that is, theories of welfare that do not make an entity's welfare logically dependent of its attitudes of favour and disfavour. Sumner applies this criticism to many objective theories, including the biofunction-based accounts advocated by biocentrists and some ecocentrists. He contends that those latter accounts are more properly conceived as accounts of some kind of *perfectionist value* than as genuine accounts of *welfare*. Those accounts, in other words, concern species-specific *excellences* that organisms can achieve rather than their condition of *faring well*. Such a contention casts doubt on the ability of biofunction-based accounts to qualify nonsentient biological entities as candidates for moral considerability, insofar as an entity's candidacy for moral considerability seems to hinge not on its ability to be more or less *excellent,* but on its ability to *fare well* or *badly*. Thus, Sumner's criticism lends support to animal ethicists' claim that the biofunction-based notion of goodness of one's own that applies to nonsentient biological entities is *not* of the appropriate kind for qualifying them as candidates for moral considerability.

I will argue that the appropriate response to this challenge involves granting Sumner's contention that the biofunction-based accounts of the good of their own of nonsentient biological entities are not genuine accounts of their welfare. This also involves granting animal ethicists' claim that sentient beings and nonsentient biological entities are not bearers of the same kind of good of their own. However, I will maintain that granting those claims need not entail conceding that nonsentient biological entities cannot be genuine candidates for moral considerability. I will argue that Sumner's association of the biofunction-based notion of goodness of one's own with ideas of *perfection* or *excellence* is misleading, and that this notion should rather be associated with a naturalistic notion of *health*. I will further argue that it is *prima facie* plausible to think that their being bearers of health qualifies nonsentient biological entities as candidates for moral considerability. Thus, my general claim will be that interpreting the biofunction-based accounts of the good of their own of nonsentient biological entities as accounts of their *health* makes it possible for biocentrists and ecocentrists to grant animal ethicists' contention that the sentience-based and the biofunction-based notions of goodness of one's own are conceptually distinct, but to do so without having to give up on the idea that candidacy for moral considerability extends beyond sentience.

My discussion will be organized as follows. In section 2, I will present the biofunction-based accounts of the good of their own of nonsentient biological entities advocated by biocentrists and some ecocentrists. I will emphasize that advocates of those accounts envision them as accounts of the welfare and interests of nonsentient biological entities. I will also present animal ethicists' usual challenge to those accounts, which I call the *reductio ad artificium*. In section 3, I will present the alternative challenge, which derives from Sumner's (1996) critique of objective theories of welfare, and his claim that Robin Attfield's (1981) and Paul Taylor's (1986) purported biofunction-based accounts of welfare are more properly conceived as accounts of some kind of *perfectionist value*. I will argue that Sumner's criticism also applies to Gary Varner's (1998) more sophisticated version of the biofunction-based account derived from the selected-effect theory of function. In section 4, I will maintain that, in response to Sumner's challenge, biocentrists and ecocentrists should grant the claim that the sentience-based and biofunction-based notions of goodness of one's own are conceptually distinct notions, but that they should argue that the latter notion is more properly interpreted as a notion of health than as a notion of perfection. I will moreover contend that it is *prima facie* plausible to think that their being bearers of health qualifies nonsentient biological entities as candidates for moral considerability. I will give one particular reason why I think that this response to Sumner's challenge should be privileged over alternative responses that would attempt to rebut his and animal ethicists' claim that welfare is an exclusively sentience-based notion.

2. FUNCTIONS, TELEOLOGY, AND BIOLOGICAL INTERESTS

As mentioned in the introduction, biocentrists typically ground their claim that nonsentient organisms are candidates for moral considerability in biofunction-based accounts of welfare (i.e., accounts that define welfare in terms of biological function and teleology). Individual organisms, they argue, have species-specific functional capacities or teleological tendencies, and states of affairs can be good or bad for them according to whether these favour or impede the realization of those capacities or tendencies. Robin Attfield, for instance, contends:

> Let the 'essential' capacities of an *x* be capacities in the absence of which from most members of a species that species would not *be* the species of *x*'s, and let '*x*' range over terms for living organisms. Then the flourishing of an *x* entails the development in it of the essential capacities of *x*'s. (Attfield, 1981, p. 42; italics in the original)

Along similar lines, Paul Taylor, states:

> We conceive of the organism as a teleological center of life, striving to preserve itself and realize its good in its own unique way. To say it is a teleological center of life is to say that its internal functioning as well as its external activities are all goal-oriented, having the constant tendency to maintain the organism's existence through time and to enable it successfully to perform those biological operations whereby it reproduces its kind and continually adapts to changing environmental events and conditions. It is the coherence and unity of these functions of an organism, all directed toward the realization of its good, that make it one teleological center of activity. (Taylor, 1986, p. 121-122)

Thus, according to Attfield and Taylor, the functional capacities or teleological tendencies of nonsentient organisms endow them with a *welfare*, and by so doing qualify them as candidates for moral considerability. As I mentioned, although, as biocentrists, Attfield and Taylor focus on nonsentient individual *organisms*, some ecocentrists apply similar approaches to ecological wholes (Johnson, 1991, 1992; Fox, 1995, chap. 6).

A more sophisticated version of the biofunction-based account of the welfare of nonsentient organisms is that elaborated by Gary Varner (1998, chap. 3). Varner proposes an account of what he calls the "biological interests" of living organisms, which draws on discussions of function and teleology in the philosophy of biology. Specifically, Varner derives his account from the *selected-effect* theory of function advocated by many philosophers of biology, which defines the functions of biological items as the effects for which those items were preserved under the past operation of natural selection (Wright, 1973; Millikan, 1989; Neander, 1991; Godfrey-Smith, 1994). By drawing on this theory, Varner sets to provide a nonarbitrary criterion for ascribing functions to biological items and

for specifying what the biofunction-based interests of organisms are. Thus, Varner (1998, p. 68) proposes the following account of biological interests:

> An organism *O* has a biological interest in *X* if and only if *X* would fulfill some biological function *F* of *S* (a part or a subsystem of *O*), where *F* is a biological function of *S* in *O* if and only if:
>
> *(a)* *F* is a consequence of *O*'s having *S* and
> *(b)* *O* has *S* because achieving *F* was adaptive for *O*'s ancestors.[5]

It should be noted that Varner presents this account of biological interests as part of a more encompassing disjunctive account of the overall interests of organisms in general (i.e., sentient and nonsentient).[6] While nonsentient organisms have only biological interests, sentient organisms, in his view, have both biological interests and sentience-based interests (which Varner analyzes in terms of desire satisfaction). Sentient organisms have both kinds of interests insofar as, besides being sentient beings, they also are biological entities with function-bearing parts and subsystems. According to Varner, attributing both kinds of interests to sentient organisms is necessary for making sense of the idea that sentient beings sometimes have interests that they are not aware of (e.g., despite the fact that the cat Nanci strongly desires to go outside, she may nevertheless have an interest in being kept inside because going outside would expose her to risks of having accidents or of getting fleas) (Varner, 1998, p. 59-60, 62).

Common to Attfield, Taylor, and Varner is the contention that nonsentient organisms can be benefited or harmed in essentially the same way as sentient beings can. To be sure, sentient beings and nonsentient organisms differ in that the latter cannot feel pleasure or pain and do not have subjective preferences that might be satisfied or frustrated. However, as conceived by Attfield, Taylor, and Varner, those sentience-based abilities make no essential difference as to whether some entities can be bearers of welfare. Welfare can be borne as much out of the possession of functional capacities or teleological tendencies as out of abilities to feel pleasure or pain or out of subjective preferences. Thus, in Attfield, Taylor, and Varner's view, sentient and nonsentient organisms are both bearers of welfare and, consequently, both qualify as candidates for moral considerability.

On this point, animal ethicists typically disagree. In the view of many animal ethicists, while it may be conceivable to speak of states of affairs as being good or bad *for* nonsentient organisms and to ascribe them some kind of good of their own on the basis of their functional capacities, the type of goodness of one's own involved has nothing to do with welfare or the possession of interests (see, e.g., Regan, 1976, p. 494-497; Sapontzis, 1987, p. 116-117; Singer, 1993, p. 276-280).[7] The biofunction-based notion of goodness of one's own that applies to nonsentient organisms must be conceptually distinguished from the sentience-based notion that applies to sentient beings, and only the latter concerns welfare. Therefore, according to those animal ethicists, the biofunction-based notion of goodness of one's own of which non-sentient organisms are bearers is not of the

appropriate kind for qualifying them as candidates for moral considerability. Only sentient beings genuinely are such candidates.

Commonly, animal ethicists' criticism of biocentrists' biofunction-based accounts of welfare takes the form of a *reductio*. Their strategy, which I will refer to as the "*reductio ad artificium*," consists in drawing a parallel between the way we speak of states of affairs as being good or bad for nonsentient biological entities and the way we often speak of states of affairs as being good or bad for *artifacts* (see, e.g., Regan, 1976, p. 494-497; Sapontzis, 1987, p. 116-117). As proponents of this critique emphasize, just as we often say such things as "nutrients are good for plants" and "invasive species are bad for ecosystems," we also often say things such as "oil is good for tractors" and "viruses are bad for operating systems." Such "goodness for" statements are grammatically identical when formulated with respect to nonsentient biological entities and artifacts, and, as such, they seem to ascribe a good of their own as much to artifacts as to nonsentient biological entities. Moreover, it is noteworthy that artifacts, just like living organisms and possibly some ecological wholes, have functional capacities and teleological tendencies (e.g., tractors *have the function* of pulling agricultural machinery, operating systems download updates *in order to* protect themselves from viruses). Thus, as Steve Sapontzis (1987, p. 117), for instance, argues:

> While "need," "want," "lack," "harm," "benefit," and "good" are all commonly applied to plants, artifacts, and so on, "interests" is not. "Interests" is commonly reserved for the people and animals who will benefit or be harmed by the needs of the plants, artifacts, and so on being met or unmet. For instance, the tractor "needs" oil to run efficiently, but it is "in the farmer's interest," not the tractor's, that the tractor be well oiled. Again, wheat "needs" water to survive and flourish, but it is "in the farmer's interest," not the wheat's, that the wheat be properly watered." Similarly, if the marshland "needs" protection against developers, it is not "in the interests" of the marshland itself but "in the interests" of providing habitat for migrating birds and other animals living there.

In line with Sapontzis's parallel treatment of nonsentient biological entities and artifacts, it seems arguable that the kind of biofunction-based goodness of one's own that applies to nonsentient biological entities similarly applies to artifacts. If this is the case, then, unless one is willing to grant that artifacts are bearers of welfare (and, consequently, that they can be candidates for moral considerability), one seems compelled to reject accounts of welfare in terms of biological functioning and teleology.

This *reductio ad artificium* has indeed prompted responses on the part of biocentrists and philosophers sympathetic to the idea that nonsentient biological entities are bearers of welfare. Those responses have focused on identifying some ontologically significant difference between the functionality and teleological character of living organisms and those of artifacts (Attfield, 1981, p. 39; Taylor,

1986, p. 124; Varner, 1998, p. 68-69; Holm, 2017); or, alternatively, on arguing that the implication that artifacts might be bearers of welfare is more plausible than one might think (Basl and Sandler, 2013). Philosophers adopting the first line of response typically argue that the functions of artifacts are in some way derivative of external ends pursued by their users, whereas, the functions of nonsentient organisms are independent of such external ends (those philosophers however adopt divergent understandings of this contrast). I will not discuss those responses here. Instead, I wish to highlight that the focus of the discussion on the *reductio ad artificium* is too narrow. Fundamentally, what is at stake between biocentrists and ecocentrists, on the one hand, and animal ethicists, on the other, is not just whether the functionality and teleological character of nonsentient biological entities and those of artifacts differ in any ontologically significant way. The issue is whether the biofunction-based notion of goodness of one's own elaborated by biocentrists really has to do with *welfare*. The *reductio ad artificium* is only one (indirect) way of casting doubt on the claim that it does, and legitimate doubts might remain even if some ontologically significant difference turned out to be identified between the functionality and teleological character of nonsentient biological entities and those of artifacts.

In the next section, I will discuss a distinct challenge to purported biofunction-based accounts of welfare that has been neglected in discussions of biocentrism and ecocentrism. This challenge is derived from Wayne Sumner's (1996) analysis of welfare and his critique of "objective theories" of welfare. Sumner's critique, I think, constitutes a more direct challenge to biocentrists and ecocentrists' contention that the biofunction-based notion of goodness of one's own on which they build their theories amounts to a genuine notion of *welfare*.

3. SUMNER'S CHALLENGE: PRUDENTIAL OR PERFECTIONIST VALUE?

Sumner's critique of purported biofunction-based accounts of welfare is grounded in his analysis of the notion of *welfare*, or what he also more technically calls *prudential value*. In its ordinary sense, Sumner remarks, the notion of welfare, or prudential value, refers to an entity's condition of *faring well* or *doing well* (Sumner, 1996, p. 1). It is the condition of being *well off*. Welfare, in other words, concerns "how well [a life] is going *for the individual whose life it is*" (Sumner, 1996, p. 20; italics in the original). Thus, an essential element in the ordinary concept of welfare is its distinctive relativization to "the proprietor of a life," its evaluation of a life in a way that is "subject relative" or "perspectival." My welfare, Sumner explains, is *mine* in a very particular and intimate way, which concerns the way in which my life goes well *for me* (Sumner, 1996, p. 20; italics in the original). This contrasts with other standpoints from which my life can be evaluated, such as its aesthetic, perfectionist, and ethical values (see Sumner, 1996, p. 21-25). Thus, according to Sumner, an adequate theory of welfare—in contrast to accounts of other kinds of value—must reflect and provide an interpretation of this distinctive subject relativity of prudential value (see Sumner, 1996, p. 20-21).

Sumner maintains that this analysis of welfare raises a challenge for purported "objective theories" of welfare, which do not make an entity's welfare logically dependent on its attitudes of favour and disfavour. As he argues, "subjective theories," by acknowledging such a logical dependence between welfare and an entity's attitudes, have at their disposal a straightforward way of interpreting the subject relativity of welfare: they make a person's welfare dependent on his or her own concerns. As he explains:

> What is crucial on such an account is that you are the proprietor or manager of a set of attitudes, both positive and negative, towards the conditions of your life. It is these attitudes which constitute the standpoint from which these conditions can be assessed as good or bad *for you*. It follows on this sort of account that a welfare subject in the merely grammatical sense—an individual with a distinct welfare—must also be a subject in a more robust sense—the locus of a reasonably unified and continuous mental life. Prudential value is therefore perspectival because it literally takes the point of view of the subject. (Sumner, 1996, p. 42-43; italics in the original)

Since, by definition, objective theories of welfare eschew all references to the attitudes or concerns of subjects, this interpretation of the subject relativity of welfare is not available to them. The success of those theories thus hinges on their proponents' ability to provide an alternative interpretation of this subject relativity (see Sumner, 1996, p. 43-44). Reviewing some prominent candidate objective theories of welfare, such as needs-based accounts (e.g., Thomson, 1987), the capability approach (e.g., Sen. 1985; Nussbaum, 1988), and the biofunction-based accounts advocated by Attfield (1981) and Taylor (1986), Sumner concludes that defenders of those theories of welfare are still yet to provide such an alternative interpretation.

Before I turn to Sumner's particular critique of biofunction-based accounts, it should be emphasized that his critique of objective theories of welfare does not amount to a mere tautological reaffirmation of his observation that welfare is subject relative. In his view, whereas recognizing the subject relativity of welfare is a matter of conceptual analysis, adopting a subjectivist interpretation of this subject relativity—i.e., one that makes an entity's welfare logically dependent of its attitudes of favour and disfavour—is a matter of substantive philosophical argument. In principle, an objective theory that adequately reflects the particular and intimate way in which an entity's welfare concerns how well things are going *for it* could be elaborated, and the interpretation of this central aspect of welfare offered by subjective theories could turn out to be mistaken (see Sumner, 1996, p. 43-44).[8]

Sumner's particular critique of the biofunction-based accounts of welfare advocated by biocentrists is grounded in his analysis of welfare and the distinction he makes between *prudential* and *perfectionist* values (see above). As he charac-

terizes it (drawing on Hurka, 1993), *perfectionist value* is about an entity's being "a good instance or specimen of its kind," its exemplifying "the excellences characteristic of its particular nature" (Sumner, 1996, p. 23). This kind of evaluation, Sumner remarks, can be applied as much to artificial as to natural entities. In the case of individual organisms, it usually appeals to standards associated with species membership. Perfectionist value, thus, consists in the characteristically Aristotelian *goodness-of-one's-kind* type of evaluation, often referred to as *attributive goodness* (e.g., Geach, 1956; Foot, 2003). Sumner illustrates the distinction between prudential and perfectionist value, and the possibility of their divergence, with the following example:

> You can easily imagine yourself, at the end of your life, taking pride in your high level of self-development but none the less wishing that you had got more out of your life, that it had been more rewarding or fulfilling, and thinking that it might have gone better for you had you devoted less energy to perfecting your talents and more to just hanging out or diversifying your interests. Whatever we are to count as excellences for creatures of our nature, they will raise the perfectionist value of our lives regardless of the extent of their payoff for us. There is therefore no logical guarantee that the best human specimens will also be the best off, or that their underdeveloped rivals will not be faring better. … The perfectionist value of a life is conceptually independent of how well it is going for its owner. (Sumner, 1996, p. 23)

On the basis of this prudential/perfectionist distinction, Sumner contends that the purported biofunction-based accounts of welfare advocated by biocentrists are in fact more plausibly interpreted as accounts of the *perfectionist value* than of the *prudential value* of entities. This, he notes, is most clearly noticeable in Attfield's version of this account (see the quotation in section 2), which explicitly defines the "flourishing" of nonsentient biological entities in terms of their goodness of their kind (Sumner, 1996, p. 77-78). Thus, the biofunction-based evaluations of nonsentient organisms on which biocentrists build their ethical theories have more to do with some kind of *excellence* than with welfare. Interpreting the biofunction-based notion of goodness of one's own elaborated by biocentrists as being about welfare therefore amounts to conflating perfectionist and prudential value. While Sumner's discussion most explicitly targets Attfield's (1981) version of the biofunction-based account, he takes his criticism of biofunction-based accounts to apply to Taylor's (1986) version as well.

Sumner's critique of purported biofunction-based accounts of welfare lends support to animal ethicists' contention that those accounts do not in fact concern welfare. If Sumner is correct, then ordinary language "goodness for" statements such as "nutrients are good for plants" and "invasive species are bad for ecosystems," which implicitly ascribe a good of their own to nonsentient biological entities, should *not* be interpreted as implying that those biological entities are bearers of *welfare*. The (false) impression that they do can be *explained away* by interpreting those statements as being about those biological entities' *perfec-*

tionist value—i.e., as statements about what nonsentient biological entities need to achieve their species-specific (or kind-specific) *excellences*.

Does Sumner's criticism also apply to Varner's (1998, chap. 3) more sophisticated account derived from the selected-effect theory of function? To be sure, Varner's account is not as obviously perfectionist as Attfield's. Its formulation does not include explicit references to notions of organisms' being good specimens of their kind or any related notions.[9] What Varner's account refers to is the naturally selected functions of organisms' parts and subsystems.

Nevertheless, Sumner's general criticism of objective accounts of welfare still seems to apply. Varner nowhere explains how it may be in the interest of nonsentient organisms *in some subject-relative sense* that their parts and subsystems perform their naturally selected functions. Varner's main improvement upon Attfield's and Taylor's accounts lies in his specification of how biological functions should be understood. Although this is a significant improvement, there does not seem to be any reason to expect that such a specification can make welfare as defined by his account more subject relative than as defined by Attfield and Taylor. Thus, an interpretation of the distinctive subject relativity of welfare remains missing from Varner's account.

Moreover, I think that considering some cases of biofunction-based evaluations involving (presumably) sentient organisms can give a sense that those evaluations have more to do with some kind of species-specific excellence than with welfare, even when biological functions are conceived along the lines of the selected-effect theory of function. Those cases will put pressure on Varner's idea that the fulfillment of their parts and subsystems' functions is constitutive of the welfare of *sentient* organisms; and, by so doing, they will also indirectly put pressure on the claim that *non*sentient organisms are bearers of a welfare constituted by the fulfillment of their parts and subsystem's functions.[10]

Consider first the case of honeybees and their sting. Presumably, a honeybee's sting has the (naturally selected) function of protecting the hive. However, knowing that a honeybee typically dies after using her sting, it would seem that a dysfunction of her sting that would make her unable to sting would, all else being equal, contribute to the welfare of the honeybee. Such a dysfunction could save the honeybee's life and presumably help her avoid some significant amount of suffering. It would therefore seem implausible to say that having a normally functioning sting promotes the welfare of the individual honeybee. Consider next the case of salmon and their reproductive behaviour (commonly called the "salmon run"). Salmon presumably have parts or subsystems that have the (naturally selected) function of enabling them to swim upstream and spawn in the river where they were born (presumably including parts and subsystems associated with salmon's capacity of recognizing the characteristic smell of their native river and of orienting themselves on the basis of detection of the earth's magnetic field).[11] However, knowing that a salmon's condition deteriorates when he or she stays in freshwater for a long time, typically leading salmon to die after spawn-

ing, it would seem that a dysfunction of an individual salmon's parts and subsystems leading him or her to stay in saltwater rather than swim upstream to his or her native river would, all else being equal, promote the welfare of the individual salmon. Such a dysfunction could save the salmon's life and presumably help him or her avoid some significant amount of suffering. It would therefore seem implausible to say that having normally functioning salmon-run-associated parts and subsystems promotes the welfare of individual salmon.[12]

Two observations can be drawn from the honeybee and salmon cases, which together indicate that Varner's biofunction-based account of biological interests is more plausibly interpreted as an account of some kind of species-specific excellence than as an account of welfare (just like Attfield's and Taylor's accounts). First, the fact that normal functioning and welfare diverge in those two cases indicates that, at least with regards to sentient beings, the relationship between welfare and normal functioning is *instrumental* and *contingent* rather than *conceptual* as Varner's account would require. I submit that the linkage of welfare to normal functioning appears plausible in the case of sentient organisms only because, usually, the normal functioning of many of their parts and subsystems happens to promote some sentience-based interests.[13] This is most clearly the case with the functions of vital organs and subsystems (e.g., the heart, lungs, the liver, the circulatory system), but is also the case with the functions of many other organs and subsystems involved in the life of animals (e.g., eyes, ears, the nose, muscles, claws, the immune system). However, the fact that welfare and normal functioning diverge in some cases (like that of stings in honeybees and salmon-run-associated parts and subsystems in salmon) implies that the normal functioning of their parts and subsystems cannot be *constitutive* of the welfare of sentient organisms.[14] In contrast, interpreting the normal functioning of stings in honeybees and of salmon-run-associated parts and subsystems in salmon as constitutive of some kind of *excellence* that honeybees and salmon can achieve qua members of their species does not seem wholly implausible (although this indeed raises questions regarding the adequacy of thinking of biological entities as belonging to kinds). Thus, with regards to *sentient* organisms, Sumner's contention that biofunction-based evaluations have more to do with a notion of perfection than with welfare still seems to hold.

The second observation that can be drawn from the honeybee and salmon cases, I think, is that the conclusion just reached with regards to sentient organisms must also hold with regards to *non*sentient organisms. If, as I just argued, normal functioning concerns some kind of perfection rather than welfare in the case of sentient organisms, then it would seem odd that things be different in the case of nonsentient organisms. At best, Varner (or his supporters) would have to give up the idea that biological interests are a class of interests that are borne by both sentient and nonsentient organisms. This would require him (or his supporters) to explain how it can be that those interests are borne only by the latter, despite the fact that both sentient and nonsentient organisms have function-bearing parts and subsystems. But there is more. Varner (or his supporters), I think, would also have to explain two other things. Firstly, they would have to explain how it

can be that what is a measure of perfection in the case of sentient organisms becomes a measure of welfare when applied to nonsentient organisms. And, secondly, they would have to explain how it can be that two distinct accounts of welfare—sentience-based and biofunction-based ones—apply respectively to sentient and nonsentient organisms. It would seem much simpler to grant that biofunction-based evaluations concern something other than welfare both in the cases of nonsentient and sentient organisms. Thus, I take it that Varner's account, like those of Attfield and Taylor, is more plausibly interpreted as an account of some kind of excellence that nonsentient organisms can achieve than as an account of their welfare. Hence, Sumner's contention that biofunction-based evaluations have more to do with perfection than with welfare also seems to apply to Varner's account of biological interests derived from the selected-effect theory of function.

It should be emphasized that the considerations raised by Sumner's critique of purported biofunction-based accounts of welfare are independent of the considerations raised by the *reductio ad artificium* (see section 2). Sumner's criticism that purported biofunction-based accounts fail to reflect the distinctive subject relativity of welfare holds irrespective of whether an ontologically significant difference can be identified between the functionality and teleological character of nonsentient organisms and those of artifacts. Let's grant that, as typically argued by biocentrists, the functions of artifacts are derivative of their users' ends, whereas the functions of nonsentient organism are not (see section 2). All that such a contrast implies is that the functional performance of artifacts should be evaluated on the basis of standards of excellence that are extrinsic (user derivative), whereas the functional performance of nonsentient organisms should be evaluated on the basis of standards of excellence that are (in some sense) intrinsic (see Sumner, 1996, p. 212). Considering that intrinsicality is not sufficient for subject relativity in Sumner's sense (for instance, the fact that a rock's ability to fall is intrinsic to it does not entail that weight is subject relative), the standards remain ones of excellence in both cases. What they evaluate, therefore, has nothing to do with welfare. Sumner's critique of purported biofunction-based accounts of welfare thus lends independent support to animal ethicists' contention that the notion of goodness of one's own that applies to nonsentient biological entities is not of the appropriate kind for qualifying them as candidates for moral considerability.

4. FROM PERFECTIONIST VALUE TO HEALTH

How should biocentrists and ecocentrists respond to Sumner's criticism? I see four possible lines of response:

(1) Rejecting Sumner's subject-relativity requirement for welfare

(2) Proposing another biofunction-based (or another kind of objective) account of welfare that meets Sumner's subject-relativity requirement[15]

(3) Maintaining that, although perfection and welfare are conceptually distinct, there nevertheless is some noncontingent relation between

perfection and welfare, such that biofunction-based perfectionist evaluations have some noncontingent bearing on welfare[16]

(4) Rejecting the (strict) welfare requirement for candidacy for moral considerability, and arguing that some entity can be a candidate for moral considerability in virtue of being a bearer of perfectionist value as construed by Sumner

In the following, I will adopt the fourth strategy (although I will reject the terminology of perfection). I will argue, first, that Sumner's notion of perfection is in fact better construed as a naturalistically understood notion of *health* and, second, that it is prima facie plausible to think that being a bearer of health qualifies an entity as a candidate for moral considerability.[17] In closing this section, I will give one particular reason why I think that this strategy should be privileged over the three other ones, which have in common their attempt to rebut Sumner's claim that welfare is an exclusively sentience-based notion.

I think that an important point must be conceded to Sumner: sentient and nonsentient biological entities are *not* bearers of the same type of good of their own. The notion of goodness of one's own that has to do with welfare is, as Sumner argues, the one that makes an entity's welfare logically dependent of its attitudes of favour and disfavour. In contrast, the biofunction-based notion of goodness of one's own that applies to nonsentient organisms concerns something other than welfare. Thus, I suggest that a twofold take on "goodness for" statements should be adopted, according to which those statements alternatively refer to two distinct notions:

Welfare: "*A* is good for *X*," meaning "*A* promotes *X*'s welfare."

Normal functioning: "*A* is good for *X*," meaning "*A* promotes *X*'s ability to function normally."[18]

Qua sentience based, the former notion applies only to sentient beings, whereas the latter notion applies to any entity that has function-bearing parts and subsystems.

However, I think that Sumner's association of the biofunction-based notion with *perfection* is misleading. This association suggests (falsely, I think) that biofunction-based evaluations have some connection with moral *virtue*, and this association therefore creates the (false) impression that being a bearer of a biofunction-based good of one's own can surely not qualify one as a candidate for moral considerability. This is because moral virtue is a concept that serves to evaluate entities qua moral *agents* (entities that can be praised or blamed for their actions), whereas candidacy for moral considerability depends on the possibility of evaluating entities qua moral *patients* (entities to which actions or states of affairs can be beneficial or detrimental). In more concrete terms, my moral considerability as a person does not hinge on my ability to behave in more or less morally admirable (virtuous) ways. It hinges on my ability to be made better or worse off by states of affairs (i.e., my being a bearer of *welfare*).

It should be highlighted, though, that what Sumner refers to as *perfectionist value* cannot be an *ethical* kind of perfection (i.e., moral virtue). Sumner himself distinguishes *perfectionist value*, which has to do with whether an entity is a good specimen of its kind (i.e., Aristotelian attributive goodness), and *ethical value*, which has to do with how one's choices affect the lives of others (see Sumner, 1996, p. 23-25). Thus, Sumner's own understanding of perfectionist value casts this notion as distinct from *ethical* perfection, and the kind of "perfection" he has in mind must therefore be a *non*moral type of perfection.[19] The relationship between this notion on the one hand and biological functions and teleology on the other suggests that it is a *biological* notion. I submit that this biological notion amounts to a naturalistically understood notion of *health*.

The suggestion that the notion of *normal functioning* that Sumner associates with *perfection* in fact amounts to a naturalistically understood notion of *health* seems reasonably plausible. In one way or another, most naturalistic accounts of health advocated in the philosophy of medicine link health with functions (e.g., Boorse, 1977, 2014; Wakefield, 1992; Saborido and Moreno, 2015). They mainly differ as to which philosophical theory of function offers the best starting point for developing an account of health.[20] Thus, I suggest that it is more illuminating to interpret the biofunction-based evaluations that Sumner associates with perfection as being ones having to do with *health* (naturalistically understood).

Now let us return to the honeybee and salmon cases discussed in section 3. Are the biofunction-based evaluations of the sting of honeybees and the salmon-run-associated functions of salmon more plausibly interpreted as having to do with health than as having to do with welfare? I contend that they are. While, as seen above, it seems implausible that the normal functioning of an individual honeybee's sting would be constitutive of her welfare, it seems quite plausible that this normal functioning is constitutive of her *health*. Likewise, while, as seen above, it seems implausible that the normal functioning of an individual salmon's salmon-run-associated parts and subsystems would be constitutive of his or her welfare, it seems quite plausible that this normal functioning is constitutive of his or her *health*. Health (the normal functioning of parts and subsystems) and welfare simply happen to diverge in those two cases. Such a divergence often occurs also in the human case. For instance, imagine that a person who does not wish to have children (and whom we have no reason to expect will change her or his mind) learns from her or his physician that she or he has a disease whose only effect will be to make her or him sterile. Insofar as having this disease will greatly simplify her or his life, by freeing her or him from the inconveniencies of contraception and from the risk of unwanted fecundation, having such a disease would seem to promote her or his welfare.

Thus, I contend that the second notion of "goodness for" identified above (the one associated with normal functioning) should be interpreted as concerning health. "Goodness for" statements that are about the normal functioning of some biological entities, I submit, have more to do with those entities' health than with

anything related to moral perfection or virtue. This proposal entails (reformulating the above-proposed twofold take on "goodness for") that ordinary-language "goodness for" statements should be conceived as referring to either one of the following two notions:

Welfare: "*A* is good for *X*," meaning "*A* promotes *X*'s welfare."

Health: "*A* is good for *X*," meaning "*A* promotes *X*'s health."

Hence, my proposal is that, typically, when we formulate statements of the type "*A* is good for *X*" in relation to sentient beings, what we implicitly mean is "*A* promotes *X*'s welfare," whereas, when we formulate such statements in relation to nonsentient organisms, what we implicitly mean is "*A* promotes *X*'s health."

I contend that, when reinterpreted as referring to health, biofunction-based evaluations constitute a more plausible basis for nonsentient organisms' candidacy for moral considerability than when they are construed (as Sumner suggests) as being about perfection. As remarked above, an entity's candidacy for moral considerability clearly does not hinge on its being a bearer of perfectionist value (its being able to be more excellent or virtuous). It seems less obvious, however, that moral considerability cannot hinge on an entity's being a bearer of health. If what I said above is correct, health, just like welfare, is a notion with reference to which "goodness for" statements can be formulated (although, as I argued, welfare and health are two distinct notions). Those statements made with reference to health are about what is in some sense beneficial or detrimental to some entities. Thus, if, as maintained by Goodpaster (see section 1), being an entity to which states of affairs can be beneficial or detrimental is sufficient for candidacy for moral considerability, then an entity's being a bearer of health seems sufficient for it to qualify as a candidate for moral considerability. Consequently, I propose that what Sumner's critique of purported biofunction-based accounts of welfare should be taken to indicate is that defences of the moral considerability of nonsentient biological entities should be built on those entities' being bearers of health rather than of welfare.[21]

One could object, however, that this proposal involves a somewhat liberal interpretation of Goodpaster's requirement for candidacy for moral considerability. Specifically, one could object that, if we grant my above interpretation of "goodness for" statements as being either about welfare or about health, then moral considerability should be considered to hinge more specifically on an entity's being able to be benefited of harmed by states of affairs *in the welfare sense*. This more restrictive (welfare-exclusive) interpretation of Goodpaster's requirement for candidacy for moral considerability would bring us back to animal ethicists' contention that candidacy for moral considerability hinges on the possession of a sentience-based type of good of one's own. By being bearers of health rather than of welfare, nonsentient organisms would still not be bearers of the right kind of good of one's own to qualify as candidates for moral considerability, and my response to Sumner's critique would fail as a defence of the nonnecessity of sentience for candidacy for moral considerability.

This objection is a crucial one, and I must admit that I will not be able to give a full response to it here. Responding to this objection would, I think, require some further analysis of the notion of moral considerability and, more specifically, some analysis of the kind of moral *attitudes* associated with it. I think that moral considerability should most likely be associated with the adoption of rational attitudes of *care* and *respect* towards entities. As Goodpaster (1978, p. 309) states, moral considerability as he understands it "is construed broadly to include the most basic forms of practical respect." So, the issue of how to interpret Goodpaster's requirement for candidacy for moral considerability, I contend, should be approached as one about what grounds the adoption of (rational) attitudes of care and respect towards entities.

I am happy to leave this question open here. In fact, as I see it, one main aim of this paper is to highlight that this question deserves more attention from environmental and animal ethicists. The question of what kind of good of one's own is required for candidacy for moral considerability is a crucially important one, and I think that the suggestion that health may be sufficient for candidacy for moral considerability cannot be rejected on the sole basis of a presumption in favour of the welfare-exclusive interpretation of Goodpaster's requirement.

Another possible objection to my proposal that the candidacy for moral considerability of nonsentient biological entities should be grounded in their being bearers of health rather than of welfare concerns the naturalism/normativism debate in the philosophy of medicine. Above, I introduced my proposal that biofunction-based evaluations of organisms be conceived as having to do with health, specifying that I meant health *naturalistically understood*. One may object that this begs the question in favour of the biology-centred, *naturalistic* accounts of health, and does not consider the possibility that the more value-laden *normativist* accounts are the most plausible ones. Proponents of naturalist accounts of health argue that the concept of health can be analyzed in purely descriptive biological terms (e.g., Boorse, 1977, 2014; Hausman, 2012; Saborido and Moreno, 2015), whereas advocates of normativist accounts argue that health is a value-laden concept that is properly analyzed with reference to social values or constituents of the welfare of entities (e.g., Engelhardt, 1976; Reznek, 1987; Nordenfelt, 1987).[22] Analyzing health with reference to welfare would make my characterization of health and welfare understood as two distinct and conceptually independent notions collapse.

Just like the previous one, this objection is one to which a full response cannot be given here. Fully responding to this objection would amount to providing a definitive solution to the naturalism/normativism debate in the philosophy of medicine. Nonetheless, one of the challenges faced by welfare-based normativist accounts of health, which has particular relevance to our discussion, can be recalled. An objection sometimes raised against those accounts points to the difficulty they have in ascribing health to nonsentient organisms. As Christopher Boorse (2011, p. 52) argues: "Many philosophers, including all utilitarians, agree with Singer (1994, p. 200) that nonsentient beings have no interests.

Beings without interests cannot su?er harm or benefit. Yet biologists freely attribute diseases to plants and lower animals." Thus, a problem for proponents of welfare-based normativist accounts of health seems to be that, unless they can provide a sound explanation of how nonsentient organisms can be bearers of welfare (one which, among other things, avoids Sumner's criticism), they will be compelled to accept the implausible result that nonsentient organisms are *not* bearers of health. This would force them to maintain that biologists are confused when they use terms like "health," "disease," and "pathology" with reference to nonsentient organisms. It would seem much simpler to adopt the view, as I propose, that health and welfare are two distinct and conceptually independent notions, and that health must be analyzed naturalistically.[23]

Before I close this section, it may be relevant to highlight one advantage of the health-centred response to Sumner's critique of purported biofunction-based accounts of welfare over other possible lines of response identified at the beginning of this section. As I mentioned, those lines of response have in common their attempt to rebut Sumner's claim that welfare is an exclusively sentience-based notion. I think that an advantage of the health-centred response pertains to its ability of fostering a more fruitful discussion between nonsentientist environmental ethicists (i.e., biocentrists and ecocentrists) and animal ethicists. As the above discussion has highlighted, the issue of whether only the sentience-based notion of goodness of one's own is relevant to moral considerability has been a tenacious matter of disagreement between animal and environmental ethicists. Given the tenacity of this disagreement, it seems unlikely, on the one hand, that animal ethicists will give up on the idea that sentience endows sentient beings with a special kind of good of their own of which nonsentient beings cannot be bearers. On the other hand, it also seems unlikely that biocentrists and ecocentrists will give up on the project of defending the moral considerability of nonsentient organisms and ecological wholes.

Given this background, I think that a shift on the part of biocentrists and ecocentrists, away from the attempt to extend the (paradigmatically sentience-based) notions of welfare and interests to nonsentient biological entities, would lay a more propitious ground for discussion between nonsentientist environmental ethicists and animal ethicists. The discussion could then be fruitfully refocused from the question of whether sentient beings and nonsentient biological entities are bearers of the same kind of good of their own to that of whether candidacy for moral considerability *really* hinges on having a good of one's own *in the welfare sense*. As I emphasized above, I think that this question is crucial to the debate between nonsentientist environmental ethicists and animal ethicists on moral considerability, and that it is one that deserves more attention.

5. CONCLUSION

This paper has discussed a challenge faced by the purported function-based accounts of the welfare of nonsentient biological entities advocated by biocentrists and some ecocentrists (a challenge that has been neglected in discussions

of environmental ethics). This challenge derives from Wayne Sumner's (1996) critique of objective theories of welfare and his claim that biocentrists' and ecocentrists' purported function-based accounts of welfare are more properly interpreted as accounts of the perfectionist value of nonsentient biological entities. I argued that the appropriate way for biocentrists and ecocentrists to respond to this challenge consists in granting Sumner's contention that the function-based accounts of the good of their own of nonsentient biological entities are *not* genuine accounts of those entities' welfare. Granting this, I remarked, lends support to animal ethicists' claim that nonsentient biological entities are not bearers of the same kind of good of their own as sentient beings. I, however, argued that Sumner's association of the function-based evaluations of nonsentient biological entities with a notion of perfection is misleading. Those evaluations, I maintained, should instead be interpreted as having to do with the health (naturalistically understood) of those entities. I maintained that it is *prima facie* plausible that their being bearers of health qualifies nonsentient biological entities as candidates for moral considerability.

As I emphasized, this proposal raises the question of whether candidacy for moral considerability should be restricted to entities that are bearers of a good of their own *in the welfare sense* or whether candidacy for moral considerability should be understood more broadly. I hope that the above discussion has succeeded in drawing attention to the conceptual and normative importance of this question.

ACKNOWLEDGEMENTS

The author would like to thank Valéry Giroux, Félix Aubé-Beaudoin, and two anonymous referees for helpful comments, as well as Xander Selene for linguistic revision of the manuscript. He also thanks Germain Fourneaux for stimulating discussions on biocentrism. The work for this paper was supported by a postdoctoral fellowship from the Social Sciences and Humanities Research Council of Canada (SSHRC, 756-2015-0748) and a research grant from the Fonds de recherche du Québec – Société et culture (FRQSC, 2018-CH-211053).

NOTES

[1] Although the notion of teleology is sometimes regarded as being incompatible with the naturalistic outlook of modern science and contemporary philosophy, it should be remarked that many contemporary biologists and philosophers in fact acknowledge the importance of the notion of teleology (properly understood) for biology (see, e.g., Nagel, 1961; Mayr, 1988; Millikan, 1989; Neander, 1991).

[2] However, Aldo Leopold and J. Baird Callicott, arguably the most influential ecocentrists, do *not* defend claims that ecological wholes are bearers of *welfare* or *interests*. They develop their ethical views more primarily around notions of *land* or *ecosystem health*, thus instead supporting a view of ecosystems as bearers of *health* (in line with what I advocate below) (see, e.g., Leopold, 1949; Callicott, 1992, 1995, 2013).

[3] For discussions of particular issues raised by the extension of those accounts to wholes, see Harley Cahen (1988), Katie McShane (2014), Jay Odenbaugh (2016), John Basl (2017), Antoine C. Dussault (forthcoming a).

[4] It must be emphasized that, in this paper, I will be concerned with nonsentient biological entities' *candidacy* for moral considerability—that is, with the *conceivability* of ascribing them moral considerability. I will not be concerned with defending those entities' *actual* moral considerability (on this distinction, see Goodpaster, 1978, p. 312-313). Insofar as it is conceivable to acknowledge that an entity has a good of its own while denying that this good is one that should be taken into account by moral agents, establishing the *actual* moral considerability of (some) nonsentient biological entities would require additional arguments (for discussions of this point, see Taylor, 1986, p. 59-60; O'Neill, 2001, p. 169).

[5] Although Varner himself does not emphasize this, a reason why the selected-effect theory of functions offers a promising starting point for an account of the good of their own of nonsentient organisms is that this theory ascribes functions *normatively* to biological items (in contrast to some alternative theories, such as Robert Cummins's 1975 *causal-role* theory). By grounding function ascriptions in past selective history, the selected-effect theory makes it possible for biological items to have functions they are unable to perform. The functions of biological items are, to use Ruth Millikan's (1984, p. 17) phrase, functions that they are "supposed to" perform. This normative character of functions as construed by the selected-effect theory thus makes it possible for organisms to have biological interests that are unfulfilled. By doing so, it provides an understanding of the way in which states of affairs may be beneficial or detrimental to living organisms. For the sake of simplicity, in this paper I will refer to "having function-bearing parts and subsystems" as the condition for being a bearer of a biofunction-based good of one's own. When doing so, I should be understood to mean parts and subsystems bearing functions *normatively*.

[6] For the sake of simplicity, I reproduce only the biofunction-based component of this account here.

[7] Although Tom Regan admits the use of the term "interest" in relation to plants and artifacts, he is careful to emphasize that the kind of good of one's own of which plants and artifacts are

bearers "is a kind of goodness that is distinct from well-being, when this is understood to mean 'happiness'" (Regan, 1976, p. 494). (As we shall see below, Regan and many animal ethicists claim that the good of their own that applies to nonsentient beings is of the same kind as the one that applies to artifacts.)

[8] In this respect, Sumner's critique of objective accounts of welfare can illuminatingly be compared with his critique of objective accounts of *happiness*, which he rejects on sheer conceptual grounds (see Sumner, 2002).

[9] Varner (1998, p. 64-65) in fact explicitly rejects accounts of the good of their own of nonsentient organisms in terms of goodness of their kind.

[10] It should be recalled that, as seen in section 2, Varner's account entails that sentient organisms, as well as nonsentient ones, are bearers of biological interests (in virtue of their having function-bearing parts and subsystems). Thus, Varner or a supporter of his approach could not avoid the implications I will draw further on in my argument by claiming that sentient organisms have only sentience-based interests.

[11] Here, I say "(naturally selected) function" (with parentheses) because I think that the points I raise hold irrespective of which normative theory of function is adopted as a starting point for an account of biological interests. Presumably, stings in honeybees and salmon-run-associated parts and subsystems in salmon would bear functions on any satisfactory theory of function. Therefore, although my discussion focuses on Varner's account and the associated selected-effect theory of function, I think that the divergence between function fulfillment and welfare I will highlight could not be avoided by adopting an account of biological interests derived from another theory of function. This point is worth mentioning given that some philosophers (Delancey, 2004; Holm, 2012, 2017) have defended alternative accounts of biological interests derived from the systems-based or organizational theory of function (Schlosser, 1998; Mossio, Saborido, and Moreno, 2009).

[12] I borrow the honeybee and salmon cases respectively from William FitzPatrick (2000, p. 63-64) and Robert Cummins (1975, p. 754-755).

[13] For a criticism of Varner's claim (see section 2) that attributing biological interests to sentient organisms is necessary for making sense of the idea that they sometimes have interests that they are not aware of (e.g., Nanci the Cat's interest in being kept inside), see Nicholas Agar (2001, p. 74-77).

[14] It might be objected that Varner's account can successfully deal with such cases by appealing to a distinction between *prima facie* and *all things considered* interests. Thus, a supporter of Varner could argue that what cases like the stings in honeybees and salmon-run-associated functions in salmon show is that an organism's fulfilling its parts and subsystems' (naturally selected) functions is not always in its interests *all things considered*. Even when this is so, it may remain the case that those organisms still have a *prima facie* interest in the fulfillment of those functions. It just happens that, in the particular circumstances at issue, some of those organisms' biofunction-based interests conflict with some of their sentience-based interests, and that the latter outweigh the former. Although conceivable, this reading of cases like those of honeybees and salmon strikes me as implausible. I submit that, unless we suppose that a honeybee experiences some significant pleasure or satisfies some deep preference when stinging an enemy of the hive, or likewise, that a salmon experiences some significant pleasure or satisfies some deep preference when swimming upstream and spawning in its native river, the idea that the honeybee has a *prima facie* interest in the normal functioning of her sting and that the salmon has *a prima facie* interest in the normal functioning of his or her salmon-run-associated parts and subsystems has no intuitive appeal. Thus, unless one can provide independent reasons for thinking otherwise, I take it that the honeybee and salmon cases should be regarded as indicating that normal functioning is *prima facie* welfare neutral, and that it affects the welfare of an entity only by promoting or impeding the fulfillment of some sentience-based interests.

[15] Resources for developing such a line of response might be afforded by accounts of biological interests derived from theories of function other than the selected-effect theory (Delancey,

2004; Holm, 2012, 2017), though see my skepticism expressed in footnote 11 regarding this possibility. Resources might also be afforded by approaches that attempt to extend Amartya Sen and Martha Nussbaum's *capability approach* to nonsentient biological entities (e.g., Schlosberg, 2012; Fulfer, 2013).

[16] Resources for developing such a line of response may be afforded by the work of neo-Aristotelian ethicists (e.g., Thompson, 1995; Foot, 2003). For a direct response to Sumner along Aristotelian lines (which, however, is not concerned with environmental ethics), see Christopher Toner (2006).

[17] A full defence of the idea that health is sufficient for candidacy for moral considerability, however, lies beyond the scope of this paper.

[18] William FitzPatrick (2000, chap. 3, sect. 4) points to a similar contrast when he distinguishes an entity's *welfare-related* needs and its *function-related needs*.

[19] It may be objected that not all ethicists would agree that ethical value (moral virtue) and goodness of one's kind are entirely independent notions. Famously, neo-Aristotelian ethicists such as Michael Thompson (1995) and Philippa Foot (2003) argue that ethical statements about what it is to be a virtuous person can be conceived as ones about what it is to be a good specimen of the human species (or of one functionally defined subtype within the species). A full discussion of the neo-Aristotelian approach to ethics indeed lies beyond the scope of this paper. It may nonetheless be recalled that this approach faces serious challenges regarding its ability to avoid implausible ethical implications, such as the implication that a person can be morally virtuous by being a good member of an organized criminal group (see Watson, 1993, p. 462-463; Levy, 2009; Odenbaugh, 2015). Criticism similar to that discussed in this paper in relation to biocentrism and ecocentrism has also been raised regarding the linkage made by neo-Aristotelians between welfare and the fulfillment of functions (FitzPatrick, 2000).

[20] Here, I leave open the question of which naturalistic account of health should be preferred. For more details on the kind of account of health that I support, see Dussault and Anne-Marie Gagné-Julien (2015).

[21] As regards the project of defending the moral considerability of ecological wholes (species, communities, ecosystems, etc.), adopting this proposal would commit one to the idea that (some) ecological wholes are genuine bearers of health. Such a commitment underpins the work of proponents of the concept of *ecosystem health* (e.g., Costanza, 1992; Rapport, 1995). For discussions of challenges raised by the concept of *ecosystem health*, see Callicott (1995), McShane (2004), Odenbaugh (2010), and Dussault (forthcoming b).

[22] On the naturalism/normativism contrast in the philosophy of medicine, see Jeremy Simon (2007), Marc Ereshefsky (2009, p. 222-224), and Dominic Murphy (2015, section 2). Although I will discuss only welfare-based normativist accounts, it should be noted that not all normativist accounts define health in relation to welfare. Some accounts instead define health in relation to socially shared values (e.g., Whitbeck 1978).

[23] Another objection commonly raised against welfare-based normativist accounts of health points to the difficulty those accounts have in distinguishing things that are bad for someone by being detrimental to his or her health and things that are bad for someone in other respects. For a discussion of this objection, see Dominic Murphy (2015, sec. 3).

REFERENCES

Agar, Nicholas, *Life's Intrinsic Value: Science, Ethics, and Nature*, New York, Columbia University Press, 2001.

Attfield, Robin, "The Good of Trees," *Journal of Value Inquiry*, vol. 15, no. 1, 1981, p. 35-54.

Basl, John, "A Trilemma for Teleological Individualism," *Synthese*, vol. 194, no. 4, 2017, p. 1057-1074: https://doi.org/10.1007/s11229-017-1316-0.

Basl, John, and Ronald Sandler, "The Good of Non-Sentient Entities: Organisms, Artifacts, and Synthetic Biology," *Studies in History and Philosophy of Biological and Biomedical Sciences*, vol. 44, no. 4, 2013, p. 697-705.

Boorse, Christopher, "Health as a Theoretical Concept," *Philosophy of Science*, vol. 44, no. 4, 1977, p. 542-573.

———, "Concepts of Health and Disease," in Fred Gifford (ed.), *Philosophy of Medicine*, Elsevier, 2011, p. 13-64.

———, "A Second Rebuttal on Health," *Journal of Medicine and Philosophy,* vol. 39, no. 6, 2014, p. 683-724.

Cahen, Harley, "Against the Moral Considerability of Ecosystems," *Environmental Ethics,* vol. 10, no. 3, 1988, p. 195-216.

Callicott, J. Baird, *In Defense of the Land Ethic: Essays in Environmental Philosophy*, Albany, N.Y., State University of New York Press, 1989.

———, "Aldo Leopold's Metaphor," in Robert Costanza, Bryan G. Norton, and Benjamin D. Haskell (eds.), *Ecosystem Health: New Goals for Environmental Management*, Washington, D.C., Island Press, 1992, p. 42-56.

———, "The Value of Ecosystem Health," *Environmental Values,* vol. 4, no. 4, 1995, p. 345-361.

———, *Thinking like a Planet: The Land Ethic and the Earth Ethic*, Oxford, New York, Oxford University Press, 2013.

Costanza, Robert, "Toward an Operational Definition of Ecosystem Health," in Robert Costanza, Bryan G. Norton, and Benjamin D. Haskell (eds.), *Ecosystem Health: New Goals for Environmental Management*, Washington, D.C., Island Press, 1992, p. 239-256.

Cummins, Robert C, "Functional Analysis," *Journal of Philosophy,* vol. 72, November 1975, p. 741-764.

Delancey, Craig S, "Teleofunctions and Oncomice: The Case for Revising Varner's Value Theory," *Environmental Ethics*, vol. 26, no. 2, 2004, p. 171-188.

Dussault, Antoine C, "Can Autopoiesis Ground a Response to the Selectionist Critique of Ecocentrism?" in Tyler DesRoches, Frank Jankunis, and Byron Williston (eds.), *New Directions in Canadian Environmental Philosophy*, Montréal, Kingston, McGill-Queen's University Press, forthcoming a.

———, « Trois faux dilemmes dans le débat sur la santé écosystémique, » *in* Sophia Rousseau-Mermans and Antoine C. Dussault (dir.), *Penser la protection de l'environnement à partir de l'écologie: Débats contemporains*, Paris, Matériologiques, forthcoming b.

Dussault, Antoine C., and Anne-Marie Gagné-Julien, "Health, Homeostasis and the Situation-Specificity of Normality," *Theoretical Medicine and Bioethics,* vol. 36, no. 1, 2015, p. 61-81.

Engelhardt, H. Tristram, "Ideology and Etiology," *The Journal of Medicine and Philosophy,* vol. 1, no. 3, 1976, p. 256-268: https://doi.org/10.1093/jmp/1.3.256.

Ereshefsky, Marc, "Defining 'Health' and 'Disease,'" *Studies in History and Philosophy of Science Part C,* vol. 40, no. 3, 2009, p. 221-227.

FitzPatrick, William Joseph, *Teleology and the Norms of Nature*, New York, Garland Publishing, 2000.

Foot, Philippa, *Natural Goodness*, Oxford, New York, Clarendon, 2003.

Fox, Warwick, *Toward a Transpersonal Ecology: Developing New Foundations for Environmentalism*, Albany, N.Y., State University of New York Press, 1995.

Fulfer, Katy, "The Capabilities Approach to Justice and the Flourishing of Nonsentient Life," *Ethics and the Environment,* vol. 18, no. 1, 2013, p. 19-38.

Geach, Peter T, "Good and Evil," *Analysis,* vol. 17, no. 2, 1956, p. 33-42.

Godfrey-Smith, Peter, "A Modern History Theory of Functions," *Noûs,* vol. 28, no. 3, 1994, p. 344-362.

Goodpaster, Kenneth E, "On Being Morally Considerable," *The Journal of Philosophy,* vol. 75, no. 6, 1978, p. 308-325.

Hausman, Daniel M, "Health, Naturalism, and Functional Efficiency," *Philosophy of Science*, vol. 79, no. 4, 2012, p. 519-541.

Holm, Sune H, "Teleology and Biocentrism," *Synthese,* vol. 194, no. 4, 2017, p. 1075-1087: https://doi.org/10.1007/s11229-016-1300-.

Hurka, Thomas, *Perfectionism*, New York, Oxford University Press, 1993.

Johnson, Lawrence E, *A Morally Deep World: An Essay on Moral Significance and Environmental Ethics*, Cambridge, New York, Cambridge University Press, 1991.

———, "Toward the Moral Considerability of Species and Ecosystems," *Environmental Ethics*, vol. 14, no. 2, 1992, p. 145-157.

Leopold, Aldo, *A Sand County Almanac, and Sketches Here and There*, New York, Oxford University Press, 1949.

Levy, Sanford S., "Philippa Foot's Theory of Natural Goodness," *Forum Philosophicum: International Journal for Philosophy*, vol. 14, no. 1, 2009, p. 1-15.

Mayr, Ernst, "The Multiple Meanings of Teleological," *Toward a New Philosophy of Biology: Observations of an Evolutionist*, Cambridge, London, Harvard University Press, 1988, p. 38-66.

McShane, Katie, "Ecosystem Health," *Environmental Ethics,* vol. 26, no. 3, 2004.

———, "Individualist Biocentrism vs. Holism Revisited," *Ateliers de l'éthique/The Ethics Forum*, vol. 9, no. 1, 2014, p. 130-148.

Millikan, Ruth G, *Language, Thought, and Other Biological Categories: New Foundations for Realism*, Cambridge, Mass., London, MIT Press, 1984.

———, "In Defense of Proper Functions," *Philosophy of Science*, vol. 56, June 1989, p. 288-302.

Mossio, Matteo, Cristian Saborido, and Alvaro Moreno, "An Organizational Account of Biological Functions," *British Journal for the Philosophy of Science*, vol. 60, no. 4, 2009, p. 813-841.

Murphy, Dominic, "Concepts of Disease and Health," *in* Edward N. Zalta (ed.), *The Stanford Encyclopedia of Philosophy*, 2015: http://plato.stanford.edu/archives/spr2015/entries/health-disease/.

Nagel, Ernest, *The Structure of Science: Problems in the Logic of Scientific Explanation*, London, Routledge & Kegan Paul, 1961.

Neander, Karen, "The Teleological Notion of 'Function,'" *Australasian Journal of Philosophy*, vol. 69, no. 4, 1991, p. 454-468.

Nordenfelt, Lennart Y, *On the Nature of Health: An Action-Theoretic Approach*, Dordrecht, the Netherlands, D. Reidel, 1987.

Odenbaugh, Jay, "On the Very Idea of an Ecosystem," *in* Allan Hazlett (ed.), *New Waves in Metaphysics*, Basingstoke, N. Y., Palgrave Macmillan, 2010, p. 240-258.

———, "Nothing in Ethics Makes Sense except in the Light of Evolution? Natural Goodness, Normativity, and Naturalism," *Synthese*, vol. 194, no. 4, 2017, p. 1030-1055.

———, Protecting Biodiversity and Moral Psychology; or Why Philosophers Are Asking the Wrong Questions," in *The Routledge Handbook of Philosophy of Biodiversity*, 2016.

O'Neill, John, "Meta-Ethics," in Dale Jamieson (ed.), *A Companion to Environmental Philosophy*, Blackwell Publishers, 2001.

Rapport, David J, "Ecosystem Health: More than a Metaphor?" *Environmental Values*, vol. 4, no. 4, 1995, p. 287-309.

Regan, Tom, "Feinberg on What Sorts of Beings Can Have Rights," *Southern Journal of Philosophy*, vol. 14, no. 4, 1976, p. 485-498.

Reznek, Lawrie, *The Nature of Disease*, London, New York, Routledge & Kegan Paul, 1987.

Saborido, Cristian, and Alvaro Moreno, "Biological Pathology from an Organizational Perspective," *Theoretical Medicine and Bioethics*, vol. 36, no. 1, 2015, p. 83–95.

Sapontzis, Steve F, *Morals, Reason, and Animals*, Philadelphia, Temple University Press, 1987.

Schlosberg, David, "Justice, Ecological Integrity, and Climate Change," in Allen Thompson and Jeremy Bendik-Keymer (eds.), *Ethical Adaptation to Climate Change*, The MIT Press, 2012, p. 165-183.

Simon, Jeremy, "Beyond Naturalism and Normativism: Reconceiving the 'Disease' Debate," *Philosophical Papers*, vol. 36, no. 3, 2007, p. 343-370.

Singer, Peter, *Practical Ethics*, 2nd ed., Cambridge, Cambridge University Press, 1993.

———, *Rethinking Life & Death: The Collapse of Our Traditional Ethics*, New York, St. Martin's Press, 1994.

Sumner, L. W., *Welfare, Happiness, and Ethics*, Oxford, New York, Oxford University Press, 1996.

———, "Happiness Now and Then," *Apeiron,* vol. 35, no. 4, 2002, p. 21–40.

Taylor, Paul W, *Respect for Nature: A Theory of Environmental Ethics*, Princeton, N.J., Princeton University Press, 1986.

Thompson, Michael, "The Representation of Life," in Rosalind Hursthouse, Gavin Lawrence, and Warren Quinn (eds.), *Virtues and Reasons*, Clarendon Press, 1995, p. 247-296.

Thomson, Garrett, *Needs*, London, Routledge & Kegan Paul, 1987.

Toner, Christopher Hugh, "Aristotelian Well-Being: A Response to L. W. Sumner's Critique," *Utilitas*, vol. 18, no. 3, 2006, p. 218-231.

Varner, Gary E, *In Nature's Interests? Interests, Animal Rights, and Environmental Ethics*, Oxford University Press, 1998.

Wakefield, Jerome C, "The Concept of Mental Disorder: On the Boundary between Biological Facts and Social Values," *American Psychologist*, 1992, p. 373-388.

Watson, Gary, "On the Primacy of Character," in Owen J. Flanagan and Amélie Oksenberg Rorty (eds.), *Identity, Character, and Morality: Essays in Moral Psychology*, Cambridge, Mass., MIT Press, 1993, p. 449-469.

Whitbeck, Caroline, "Four Basic Concepts of Medical Science," *PSA: Proceedings of the Biennial Meeting of the Philosophy of Science Associationi*, 1978, p. 210-222.

Wright, Larry, "Functions," *Philosophical Review*, vol. 82, no. 2, 1973, p. 139-168.

DELIMITING JUSTICE: ANIMAL, VEGETABLE, ECOSYSTEM?

ANGIE PEPPER
UNIVERSITY OF BIRMINGHAM

ABSTRACT:

This paper attempts to bring some clarity to the debate among sentientists, biocentrists, and ecocentrists on the issue of who or what can count as a candidate recipient of justice. I begin by examining the concept of justice and argue that the character of duties and entitlements of justice sets constraints on the types of entities that can be recipients of justice. Specifically, I contend that in order to be a recipient of justice, one must be the bearer of enforceable moral claim rights. I then suggest that this has important implications for the dispute among sentientists, biocentrists, and ecocentrists. In brief, I show that sentientists cannot exclude nonsentient entities from the domain of justice merely by denying that they have "the right kind of interests," and biocentrists and ecocentrists cannot move seamlessly from some feature of living things or ecosystems to entitlements of justice. I further argue that ultimately this disagreement on the bounds of justice bottoms out in a normative disagreement about which entities possess moral claim rights, and that the case for biotic or ecosystem rights has yet to be convincingly established.

RÉSUMÉ :

Le présent article vise à clarifier le débat parmi sentientistes, biocentristes et écocentristes autour de la question de qui ou de ce qui peut valoir comme un récipiendaire légitime de justice. Pour débuter, j'examine le concept de justice et soutiens que la nature des obligations et droits de la justice impose des contraintes sur les types d'entités pouvant être récipiendaires de justice. Plus particulièrement, je prétends que tout récipiendaire de justice doit être titulaire de droits de revendication morale applicables. Je propose ensuite que cette thèse a des conséquences importantes pour la querelle parmi les sentientistes, les biocentristes et les écocentristes. En bref, je démontre que les sentientistes ne peuvent exclure les êtres nonsentients du domaine de la justice simplement en niant qu'ils ont des « intérêts de la bonne sorte », alors que les biocentristes et écocentristes ne peuvent passer sans difficultés d'un aspect quelconque des êtres vivants ou des écosystèmes à des droits de justice. Enfin, je soutiens que ce désaccord sur les limites de la justice repose, en fin de compte, sur un désaccord d'ordre normatif à propos des entités possédant des droits de revendication morale, et que l'argument pour des droits propres aux êtres vivants ou aux écosystèmes n'a toujours pas été prouvé de manière convaincante.

INTRODUCTION

While much theorizing in political philosophy restricts considerations of justice to human animals, several animal-rights theorists have persuasively argued that the exclusion of nonhuman animals from the domain of justice is unjustifiable.[1] Crucially, while the substantive details of these accounts can differ greatly, their advocates often explicitly delimit the scope of justice by appeal to sentience.[2] Consequently, for many defenders of animal rights, *all* and *only* sentient beings are to be counted as the proper recipients of justice. Let us call this view *sentientism*.

The appeal to sentience is compelling. Sentient animals have the capacity for feelings and emotions and so can experience things as better or worse. Put another way, most sentient animals are subjectively aware, which means that what happens to them matters *to them*. Accordingly, sentient animals have an interest in living lives that go well and derivative interests in the things that make life go well, such as access to adequate nutrition, clean water, suitable habitat, bodily integrity, and health. They also have interests in living lives limited in those things that can make life go badly, such as pain, suffering, and cruelty. It is possession of these interests which makes sentient animals eligible for considerations of justice because we can do them great harm or good in our relations with them. As Martha Nussbaum suggests, "it seems plausible to think that these relationships ought to be regulated by justice, instead of the war for survival and power that now, for the most part, obtains" (2006, p. 326).

However, attempts to delimit the scope of justice by appeal to sentience are contested by some environmental ethicists, who argue that the sentience threshold is theoretically indefensible. This challenge has both a negative component and a positive component. Negatively, critics of sentientism have argued that appeal to sentience is morally arbitrary and relies upon an anthropocentric bias (Fulfer, 2013; Plumwood, 1999). Specifically, it has been suggested that sentience is identified as the morally relevant criterion *because* it is a quality of humans, and thus the bounds of justice are extended only minimally to those few animals who share something in common with us. As a result, the focus on sentience "shifts the boundary to a new point but still leaves far too much outside, and has the same intense emphasis on the need for a boundary between what counts and what does not" (Plumwood, 1999, p. 199). Positively, these critics have advanced a range of alternative proposals that extend direct considerations of justice to all living things (let us call this view *biocentrism*) or to ecosystems (let us call this view *ecocentrism*). Specifically, biocentric and ecocentric theorists have argued that the proper subjects of justice are either all entities with interests (Baxter, 2000, 2005) or all entities capable of a dignified existence (Fulfer, 2013) or all entities that possess integrity (Schlosberg, 2007, 2012; Crescenzo, 2013).

Unsurprisingly, defenders of the sentience threshold for justice reject biocentric and ecocentric attempts to extend the bounds of justice. For instance, they often

deny that nonsentient entities have interests (e.g., Cochrane, 2012, p. 37-38), and then argue that only beings with interests can be harmed. If sentientists are right, and nonsentient entities cannot suffer harm, then it would be inappropriate to regard nonsentient entities as subjects of justice since what we do with regard to them makes no difference *to them*. On a slightly different tack, others have suggested that even if we grant nonsentient entities interests, only sentient beings are vulnerable in a way that makes direct considerations of justice appropriate (Donaldson and Kymlicka, 2011, p. 33). Of course, biocentrists and ecocentrists do not accept the sentientist critique, and we are left at an impasse, with defenders of each position asserting that their view is the correct one.

In order to overcome the deadlock, I propose that we look more closely at the concept of justice and what it means to be a subject of justice. With this as my focus, the central question of this paper is, which entities are candidates for entitlements of justice?[3] Sadly, I do not offer a comprehensive answer to this question; my aims are far more modest. Here I endeavour only to bring clarity to the debate among sentientists, biocentrists, and ecocentrists, by thinking through what is required to count as a candidate recipient of justice and, in so doing, to determine precisely what these theorists must show in order to establish their conclusions about the scope of justice. Though my aims are modest, the conclusions of this paper are nonetheless instructive for our current thinking about what we owe to nonhumans. By doing some conceptual housekeeping, I show that sentientists cannot exclude nonsentient entities merely by denying that they have "the right kind of interests," and biocentrists and ecocentrists cannot move seamlessly from some feature of living things or ecosystems to entitlements of justice. I further suggest that ultimately this disagreement about the bounds of justice bottoms out in a normative disagreement over which entities possess moral claim rights, and that the case for biotic and ecosystem rights has yet to be convincingly established.

The paper is divided into four sections. I begin, in section 1, by outlining those features of justice that distinguish it from other moral concepts. I contend that the character of duties and entitlements of justice sets constraints on the types of entities that can be recipients of justice. Specifically, in order to be a candidate recipient of justice, one must be the bearer of enforceable claim rights. In section 2, I discuss the benefits of adopting the discourse of justice, which explains why defenders of nonhuman life and ecosystems have been keen to extend considerations of justice beyond human beings. In section 3, I conjecture that sentientists have been able to build a persuasive case for the inclusion of sentient nonhuman animals into the domain of justice because, on most plausible accounts of moral rights, sentience is a necessary condition for being a rights holder. I then consider two strategies available to biocentrists and ecocentrists who wish to assign entitlements of justice to all living beings and ecosystems: (1) they might continue to maintain that nonsentient entities possess claim rights; and (2) they might reject the view that claim rights are necessary for justice. Ultimately, I conclude that neither strategy looks promising. Lastly, in section 4, I suggest that biocentrists and ecocentrists need not be too dismayed by this

conclusion. Justice claims do not exhaust the moral domain, and limiting the scope of justice to sentient beings does not entail devaluing nonsentient life and ecosystems or rule out the possibility of legal protections for the environment.

1. THE CONCEPT OF JUSTICE

I want to begin by noting that all parties to the dispute are interested in what I will call "political justice." That is, defenders of justice for sentient animals, nonsentient life, and ecosystems are concerned with institutionally enforceable rightful entitlements. They might, for instance, be concerned with securing legally enforceable protections against harmful human action, fair access to important resources such as water and adequate nutrition, inclusion in climate change adaptation policy, or representation in political decision-making procedures. Political justice involves the direct institutional protection of recipients of justice, which means both that institutions are to be structured in ways that secure justice for all members *and* that members able to bear political responsibility can be coerced to fulfil their duties of justice to others. While there is significant disagreement about the substantive content of justice, the following four ideas about the concept of justice are widely shared.[4]

First, the domain of justice is the domain of rightful entitlement, which means that justice concerns securing for each entitlement bearer that to which they are *due*. Entitlement bearers are *owed* duties of justice and *they* are treated unjustly when those duties are violated.[5] States of affairs might then be described as just when entitlement bearers have received that to which they are justly entitled and duty bearers have fulfilled their duties of justice. By contrast, states of affairs in which entitlement bearers have been denied their due and duty bearers have failed to fulfil their obligations can appropriately be characterized as unjust. This indicates that the idea of justice is thinly relational: justice and injustice are always done *by* someone or something *to* some other.[6] Thus, we evaluate the justness of people's actions, institutions, laws, conventions, or, more broadly, states of affairs, by considering how those who fall within their reach are treated or affected.

Second, though the precise content of what we are due as a matter of justice is disputed, entitlements of political justice are usually understood, even if not explicitly, to have the structure of Hohfeldian claim rights. For Hohfeld, a right—to be distinguished from a power, privilege, or immunity—is a claim that one has against some other that they act in some way. Moreover, the right that one possesses is always correlated with a duty possessed by some other to act in accordance with that right (Hohfeld, 1913). For example, I have a right against you that you do not assault me, which entails that you are under a duty not to assault me. More formally, X has a claim right to φ against Y if and only if Y is under a duty toward X to ensure φ. Accordingly, for every holder of a claim right, there is at least one correlative duty bearer.

Importantly, the duties that are correlative with claim rights are directed duties, which is to say, "duties that an agent owes *to* some party – a party who would be wronged if the duty were violated" (May, 2015, p. 523; emphasis added). Not all moral duties are directed. Some duties are owed to no party in particular, such as duties of beneficence, and others to no party at all, such as duties to protect great works of art. In these cases, X has a duty to φ, but X's duty is not directed toward a right holder. I may, for example, have a moral duty to volunteer at my local community centre, but that duty is not a duty owed *to* any particular individual. As stated above, unless someone has a claim right to *my* assistance, I am under no directed duty to provide it.

With this picture of rights and directed duties in the background, we can now return to the specific case of justice relations. If entitlements of justice are conceived of as claim rights, then there are correlative duties of justice. Moreover, the duties of justice that correlate with claim rights are directed—that is, they are owed *to* someone or some others.[7] This means that, when we violate our directed duties of justice, we do not merely act wrongly *with regard to* someone or some others, but we wrong those to whom the duty was directed. The satisfaction of our duties of justice thus depends on us acting in ways that respond directly to correlative claim rights—rights others have against us to perform or abstain from certain actions.

This structure of just entitlements and their correlative directed duties brings us to the third distinctive feature of justice, and that is that duties of justice are prima facie enforceable. The enforceability of duties and entitlements of justice is often stressed to draw out the difference between duties of justice and duties of charity and is especially prevalent in discussions about global justice.[8] While someone can be compelled to fulfil his or her duties of justice, the same is not true for duties of beneficence; the state can coerce us to treat others in ways to which they are entitled, but it cannot compel us to engage in voluntary acts of beneficence. Volunteering at the local community centre would no longer be an act of beneficence if I were compelled by the state to perform it.

Importantly, duties of justice are only prima facie enforceable because there may be other salient considerations that would ultimately tell against the use of coercion to achieve compliance:

> Enforcement imposes constraints on the freedom of agents and involves burdens for them, and such costs must be justifiable as feasible and reasonable. Hence, a duty could be a duty of justice even if a specific implementation of it is not justifiably enforceable, all things considered, in certain circumstances (either because in the circumstances such an enforcement is not feasible or because it imposes costs that are unreasonable given other, stronger, conflicting demands of justice). But since a pro tanto ground for action persists, agents may have to find alternative (feasible, reasonable) ways to honor it, or change the circumstances so that some form of honoring them becomes practicable. (Gilabert, 2016, p. 511)

Importantly, not all moral duties and arguably not all directed duties are enforceable, which makes duties and entitlements of justice unique in this respect. For example, if I promise to come to your birthday party, then I incur a direct duty to you to come to your birthday party and you have a moral claim against me that I turn up as we agreed. However, we commonly think that it would be undesirable, and that it would be an illegitimate use of power, if the state were to enforce your right by coercively making sure that I attend your birthday party. That is, there are many moral duties that we ought to voluntarily fulfil, free from the coercive power of the state. What makes a claim right and its correlative duty fall within the protective domain of justice is an interesting question, but one that goes beyond the scope of this paper.[9] All that matters here is that the domain of justice covers moral entitlements and duties that agents of justice have a pro tanto reason to enforce.

Finally, most agree that justice claims constitute a subset of moral claims, which means that not all moral considerations are considerations of justice (e.g., Rawls, 1999, p. 448). Justice is, for instance, distinct from loyalty, mercy, charity, and care; it is but one moral value among many. What it is to act justly differs from what it is to, say, act charitably or with care. Whereas justice involves giving to others what is rightfully theirs, charity involves giving to others what is rightfully yours. Likewise, even when claims of justice are satisfied, failure to promote the value of care may lead to the erosion and eventual collapse of the "social fabric of trust and concern" (Held, 2006, p. 71). None of this is meant to suggest that the objects of our moral evaluation only ever exhibit one particular virtue or value, or that the boundaries between moral values are always clear. However, it does mean that the domain of morality is not reducible to claims about justice.

This last point is crucial to the subsequent argument of this paper. Justice is distinct from other moral values and virtues. Injustice is a particular type of wrong and, as such, the nature of the wrong is different in kind from the nature of other wrongs. Though many of the moral flaws that people exhibit in their interpersonal relationships—such as disloyalty, dishonesty, selfishness, and indifference—may be judged to be wrong, they are not necessarily injustices. If I cheat at snakes and ladders or deceive a friend about my whereabouts because I'd sooner spend time with someone else, it is intuitive to describe my actions as dishonest, but inapt to class them as injustices.[10] Though there may be some sense in which my opponent has a moral right to win the game and my friend to be told the truth, in neither of these cases do we think that their right is enforceable.

Justice is a central moral concept, but we must be careful not to overstate its importance. The distinctiveness of justice in relation to other moral concepts is what makes it useful, normatively speaking. Any attempt to make the domain of morality coextensive with the domain of justice would essentially eliminate the distinctive wrongness of injustice—the violation of pro tanto enforceable rights—because *all* wrongs would then have to be counted as wrongs of injustice.

Moreover, by flattening the moral landscape in this way, we would crowd out all other moral considerations and the distinctiveness of the wrongs they capture. Thus, allowing the discourse of justice to monopolize the moral domain is implausible and limits what we can say about our moral lives in ways that are both practically and theoretically unattractive.

2. THE ALLURE OF JUSTICE TALK

Having elaborated the concept of justice, we are now in a position to see why some animal ethicists and environmental philosophers are keen to extend considerations of justice beyond the bounds of the human community. There are four key benefits to adopting the discourse of justice. First, duties of justice are often regarded as being more *stringent* than other moral duties. This means that duties of justice tend to have priority over competing moral demands and that failure to fulfil a duty of justice is worse than failure to fulfil some other moral duty. Accordingly, entities that have entitlements of justice occupy a privileged place in the normative landscape, and this position arguably secures them greater moral concern. Thus, including nonhuman animals, life forms, and ecosystems within the domain of justice would confer upon those entities the degree of moral importance that their advocates take them to be worthy of.

Second, talking in terms of injustice captures a distinctive type of wrong that might more adequately capture the nature of the wrongs in question. That is, injustices are wrongs done *to* entitlement bearers. This idea is most forcefully taken up by those looking to extend the scope of justice to nonhuman animals and is nicely articulated by Nussbaum: "When I say that the mistreatment of animals is unjust, I mean to say not only that it is wrong of us to treat them in that way, but also that they have a right, a moral entitlement, not to be treated in that way. It is unfair *to them*" (2006, p. 337).

A third advantage of the discourse of justice is that it better captures the systemic nature of some wrongs and moves us beyond interpersonal wrongdoings. Since justice is a virtue of individuals *and* institutions, it is necessary to evaluate the justness of institutional arrangements as well as the actions of individuals. This is particularly important for sentientists, biocentrists, and ecocentrists looking to capture the systemic nature of the wrongs done to nonhuman beings and entities and to determine institutional remedies for the perceived injustices.

Finally, since duties of justice are prima facie enforceable, institutional measures, including constitutional provisions, can be introduced to protect recipients of justice. This is to say that recipients of justice may have their entitlements safeguarded by law and are therefore not left vulnerable to the whims of personal morality. Again, this is especially important for sentientists, biocentrists, and ecocentrists who are seeking to extend institutional protection and respect beyond human beings. That people can be compelled to recognize the entitlements of nonhuman life and ecosystems, irrespective of whether they in fact do, is essential to protecting those entities in a world in which their value is largely ignored or denied.

3. JUSTICE, RIGHTS, AND SENTIENCE

Though the benefits of appealing to the discourse of justice are plain, we must determine the fitness of the concept for human relations with nonhuman entities. The discussion above alerts us to the central distinguishing feature of justice, which is that it is the domain of enforceable rights. This means that, in order to be eligible for entitlements of justice, an entity must possess features or standing sufficient to ground claim rights against others. Thus, the question of which entities are eligible for entitlements of justice can be answered only by attending to the prior question of which entities are eligible for rights.

Some of my readers may be frustrated by the laboured nature of the preceding discussion. Surely it is obvious, one might say, that, given the intimate connection between justice and rights, entitlement bearers must be rights holders, mustn't they? Though the point may seem trite, I nonetheless think that it is important to bring this feature of justice into focus. In the most recent disputes between animal and environmental ethicists over the bounds of justice, the idea that recipients of justice must be rights holders is often problematically absent—or underexplored.

Environmental ethicists are, for instance, more prone to ignore the concept of rights altogether and move straight from some feature or quality that they take to be morally relevant to theorizing entitlements of justice for nonsentient entities.[11] In so doing, they make appeals to dignity, integrity, and vulnerability to ground entitlements of justice, but no story is given about how these things work to justify claim rights. But, as I hope to have shown, such a story is needed. Moreover, the preceding discussion calls into question the common sentientist strategy of demonstrating that nonsentient entities do not have the right kinds of interests for justice. Arguing that nonsentient entities lack interests of the relevant kind for the possession of rights only gets us to the claim that they do not possess rights grounded in interests. It does not yet show us that nonsentient entities are disqualified from counting as recipients of justice, because the possession of rights might be grounded in something other than interests.

With these considerations in mind, let us explore two avenues open to biocentrists and ecocentrists looking to make justice claims on behalf of nonsentient life and ecosystems. First, it might be the case that sentience is not necessary for an entity to count as a rights holder. Second, it is open to defenders of justice for nonsentient life and ecosystems to maintain that justice need not be concerned exclusively with rights. Specifically, it might be argued that, while possession of rights is sufficient to count as a recipient of justice, it is not necessary. I briefly discuss each of these strategies in turn.

Sentience and Claim Rights

In my discussion of the concept of justice, I talked at length about the structure of claim rights and their correlative directed duties. It is important to note that

nothing about that part of the story can tell us *who*, or indeed *what*, can or does possess claim rights. In short, the concept of a claim right cannot, by itself, yield a normative conclusion about which entities possess such rights. Conceptually, any entity could stand in the place of X, where X has a claim right to φ against Y if and only if Y is under a duty toward X to ensure φ. There is nothing, then, about the concept of rights that would prevent a tree, an ecosystem, a bacterium, the universe, a chair, a toaster, or a car from possessing claim rights. So, in order to answer the question of which entities *can* possess rights, we must introduce further normative considerations.

All of this suggests that the dispute among sentientists, biocentrists, and ecocentrists over the scope of justice ultimately bottoms out in a normative dispute over which entities possess claim rights. There is, however, a general observation about rights discourse, which casts doubt on the project of theorizing moral rights (and, hence, entitlements of justice) for nonsentient entities. As noted in the introduction, defenders of sentient-animal rights have made a compelling case for extending moral rights beyond the human species—a case that rests firmly on the idea that justice is owed only to sentient animals. In light of the preceding discussion we are now in a position to say a little more about the connection between justice and sentience. Specifically, sentience is a precondition for entitlements of justice insofar as it is an ineliminable feature of all plausible accounts of the function and justification of rights.

There are two central views about the function of rights: the Will Theory and the Interest Theory. On the Will Theory, the function of rights is to protect the capacity of personal autonomy. Having a right to something means that you have control over others' free will in regard to that thing. Your right to private property, for instance, allows you to control whether people are allowed to enter your house. Accordingly, someone violates your right by acting contrary to your will with regard to the object of your right. Since the Will Theory is concerned with protecting personal autonomy and our capacity to make choices about the objects of our rights, it presupposes sentience. However, while sentience is a necessary condition, it is not sufficient, since one must be not only subjectively aware but also capable of making choices and waiving rights. Thus, the Will Theory excludes all beings (including many humans) who cannot make choices by asserting or pressing claims or waiving their rights. As such, the Will Theory will be of little use to those who want to extend moral rights to nonsentient entities.[12]

The second view, the Interest Theory, has, by contrast, been considered as far more amenable to the inclusion of nonhuman entities. On the Interest Theory, the function of rights is to protect fundamental interests—interests sufficiently weighty to ground duties on the part of others. Many sentientists have keenly embraced the Interest Theory, which they take as open to extension:

> The prima facie case for viewing all sentient creatures as right-holders is extremely simple and draws upon two conventional ideas in moral and political philosophy. The first idea is that interests are the necessary and

> sufficient conditions for the possession of rights (MacCormick 1977, Raz 1988, Kramer 1998). As such, on this view, all and only interest-holders possess rights. The second conventional idea is that sentience is the necessary and sufficient condition for the possession of interests (Feinberg 1974, Singer 1979, Sumner 1996, p. 21). As such, on this view, all and only sentient creatures possess interests. When these two conventional views are combined then, the prima facie case is complete: all sentient creatures, as possessors of interests, are possessors of rights. (Cochrane, 2013, p. 657)

Here again sentience features as a necessary condition of rights. Nevertheless, biocentrists and ecocentrists often deny the "second conventional idea" that only sentient beings possess interests. I do not have the space to review arguments that reject sentience as necessary for the possession of interests, but it is worth noting that claiming that nonhuman life forms and ecosystems have interests of the kind necessary to ground rights is very controversial. Our ordinary language may allow us to make sense of the idea that nonsentient life forms have biological interests or that integrity or good health is in the interest of flourishing ecosystems, but the fact that these interests are not the interests of welfare subjects (subjects who are able to experience what happens to them as good or bad) makes a difference to the normative status of those interests. That is, bare biological interests and ecosystem interests are not the same *kind* of interests as those possessed by sentient animals, and thus we need a story that explains how these other kinds of interests can ground rights.

Importantly for our discussion, even if nonsentient entities fail to qualify as rights holders on the Interest Theory, biocentrists and ecocentrists could appeal instead to an alternative theory of rights. The Interest Theory and the Will Theory provide us with accounts of the function of rights—they explain what rights are for—but the question of what justifies rights can be viewed as separate. So, while rights may protect interests or autonomy, the question of what justifies rights might be appropriately answered by appeal to something other than interests or autonomy. Indeed, this is the position of those who defend status-based theories of rights (Kamm, 2007; Nagel, 2008).

Status-based theories of rights hold that rights are valuable because they reflect the inviolability of rights holders. Inviolability is a moral status that entails a description of what can and cannot be done to the individuals who possess that status (Kamm, 2007, p. 253; Nagel, 2008, p. 107). Importantly, the value and justification of rights does not depend fully on the interests that they protect. As Frances Kamm notes, "insofar as respecting a right not to be harmed involves respecting a status of inviolability, whether one has succeeded in respecting the right does not depend on whether the person is in fact violated or his interests set back" (2007, p. 253). The reason for this is that the value of rights is not limited to their instrumental role in protecting fundamental interests. Rather, the value of rights stems from the fact that they are derived from the noninstrumental value of the beings whose worth they express. Furthermore, what matters

is not simply what is actually done to us, but what can permissibly be done to us. Thus, rights are valuable not just because they protect our interests but also because they express the noninstrumental value of beings who are liable to certain treatment (Nagel, 2008, p. 108).

For biocentrists and ecocentrists, the status-based theory offers an alternative picture to the Interest Theory that is also amenable to the inclusion of nonsentient entities. If it can be argued that all living beings or ecosystems have the moral status of inviolability, then that status would entail claims to certain treatment by humans, and thus, those entities would possess rights.[13] However, sentience is commonly viewed as a precondition for rights on the status-based theory. For example, Kamm argues that "a work of art or a tree may count in its own right in the sense that it gives us reason to constrain our behavior toward it (for example, not destroy it) just because that would preserve this entity... But this is still to be distinguished from constraining ourselves *for the sake of* the work of art or the tree" (2007, p. 229; emphasis added). For Kamm, only beings who can be helped for their own sake—sentient or conscious beings who can "get something out of continuing existence" (2007, p. 29)—have the kind of moral status that makes them eligible for claim rights.[14] If the notion of inviolability is necessarily tied to the notion of sentience, then it would seem that the status-based justification of rights does not offer much hope to biocentrists and ecocentrists. Moreover, we appear to have returned to the question of whether things can be *good for* nonsentient entities.

Additionally, it might be argued that the status-based theory of rights will be unattractive to at least some biocentrists and ecocentrists, those who would reject the appeal to inviolability.[15] To attribute the status of moral inviolability to all living things or ecosystems would have implications that at least some biocentrists will find disagreeable. It would mean attributing the exact same moral status to nonsentient entities as to humans, and it would mean holding that there are some ways of treating nonsentient entities that are never permissible. These conclusions will be too strong for some who might argue that we can always use nonsentient life so long as we do so with respect and within reason, and that the moral status of entities is gradated depending on the kind of entity that they are.

It looks, then, as though none of the main theories of rights is easily extended to nonsentient entities. So what? one might say. We humans have a long history of viewing ourselves as superior to other living beings and dominating nature, so it should come as no surprise that all traditional accounts of the function and justification of rights presuppose sentience as a necessary condition. Doing justice to nonsentient life and ecosystems will necessarily require a radical reconceptualization of how we think about moral rights and quite possibly altogether new ways of theorizing about rights. Perhaps this is right. Perhaps there is some hitherto undiscovered theory of rights that extends to nonsentient life and/or ecosystems while capturing our considered moral judgments about the rights of humans and sentient nonhuman animals. But, as yet, no such theory has been articulated. At present, we do not have a theory of rights for all living entities or

ecosystems that enjoys even moderate support, and this is because such accounts have very counterintuitive implications—implications that few are willing to accept.

For example, attributing rights of equal weight to all living things and ecosystems would likely result in "ecofascism," where humans are sacrificed to protect the rights of other entities. Since human life depends on the killing of living things, and many of the current practices that we depend upon destroy nonhuman life and ecosystems, the just solution (to protect the rights of nonhumans) would be to either cull the human population or at least deprive many humans of the means of survival. Few would accept such extreme conclusions. An alternative approach rejects equal rights across living beings and ecosystems and instead proposes a graded model of rights whereby rights have greater or lesser moral significance according to some criteria (e.g., Nash, 1993). However, there is good reason to doubt the feasibility and efficacy of attributing rights to nonsentient beings (Benton, 1998). What do nonsentient rights protect? How do we determine the good of nonsentient entities? By what criteria should more or less weight be given to an entity's rights? Does the moral weight of an entity's right remain constant across contexts or does it change depending on the other types of beings involved? Even if these questions can be answered, attributing rights to nonsentient entities means that we infringe on those rights whenever we act contrary to them. Thus, if plants have a right to life, we directly wrong plants, even if excusably, every time we kill and eat them. Moreover, if plants have a justice claim against being eaten, then we have a pro tanto obligation to find alternative forms of nourishment.

In sum, sentience features as a necessary (though not always sufficient) condition in our central theories of rights. This, I think, helps to explain why defenders of animal rights have been able to make a successful case for extending moral rights to at least some nonhuman animals. It also explains why biocentrists and ecocentrists have not enjoyed the same kind of success. I cannot here offer a concrete refutation of the claim that nonsentient entities possess claim rights. However, the preceding remarks cast doubt on the project of extending predominant conceptions of rights to nonsentient entities. One consequence of this discussion is that, if biocentrists and ecocentrists want to attribute claims of justice to nonsentient entities, the burden is now on them to develop a theory of rights that can adequately accommodate sentient and nonsentient entities alike.

Justice: Recognition not Rights

A different strategy might be to accept that nonsentient life and ecosystems cannot be rights holders, but deny that rights are essential to the domain of justice. Something like this line of thought is present in David Schlosberg's appeal to the injustice of misrecognition and the harm of "status injury" (2007, p. 138-142).[16] Importantly, by taking up and adapting Nancy Fraser's account of recognitional justice, Schlosberg hopes to move us beyond the atomistic

language of liberal rights and the liberal paradigm of distributive justice (2007, p. 140). Following Fraser, Schlosberg identifies three forms of status misrecognition:

> *(a)* a general pattern of cultural domination, *(b)* a pattern of nonrecognition, which is equivalent to being rendered invisible, and *(c)* disrespect, or being routinely maligned or disparaged in stereotypic public and cultural representations (Fraser, 1998, p. 7). These are structural, social, and symbolic indicators of misrecognition or lack of respect, and they are directly related to the status of the individual or community being maligned (Schlosberg, 2007, p. 140).

Nonhuman life and nature suffer "status-injurious misrecognition" because the relationship between humans and nonhuman nature is one of institutionalized subordination (Schlosberg, 2007, p. 140, p. 18). Moreover, Schlosberg argues that nature is "maligned and disrespected" in ways that clearly exhibit the three forms of status misrecognition posited by Fraser (2007, p. 140). Crucially for Schlosberg, on Fraser's view, status injuries can occur without being experienced by their victims; there may be no psychological distress or felt psychological need for recognition. This allows for an easy extension of the idea of recognitional injustice to nonhuman entities that may lack the psychological capacities that are commonly understood to give recognition its value.[17] On this view, then, nonhuman nature, including nonsentient life and ecosystems, suffers injustice when it is denied the social recognition that it is due. And it is denigrated by status injury when it is systematically subordinated to human interests or otherwise ignored and rendered invisible in human decision making.

There are two main things to be said about Schlosberg's argument. First, I think his account depends on an incomplete and problematic reading of Fraser. Though Schlosberg convincingly argues that status injuries do not necessitate complex psychological desires—thereby opening the door to nonsentient entities—he does not fully explain *why* status injuries constitute injustice for Fraser. Looking more closely at why status injuries constitute injustice complicates Schlosberg's appropriation of Fraser's theory of recognition. For Fraser, the wrong of misrecognition through social subordination is that it represents a barrier to "*participating as a peer* in social life," hence the politics of recognition is "aimed at overcoming subordination by establishing the misrecognized party as a full member of society, capable of participating on a par with other members" (Fraser, 2001, p. 24). So, on Fraser's view, misrecognition constitutes an injustice because it denies those who suffer from status injury the opportunity to participate and interact with others in our shared social life as a full partner (2001, p. 27). I take this to mean that only beings with the capacity to participate and interact with others as full partners in our shared social life can suffer the wrong of recognitional injustice. Indeed, Fraser suggests as much when she says that "justice requires social arrangements that allow all (adult) members of society to interact as peers" (Fraser, 2001, p. 29). Here "adult members" can plausibly be interpreted only as humans and thus Schlosberg's attempt to extend Fraser's theory to nonhuman entities seems to be in trouble.

Now, of course, it is open to Schlosberg to argue that Fraser's view is needlessly narrow, but, given the character of Fraser's recognitional theory, the inclusion of nonsentient nature seems decidedly strange. What would it mean for nonsentient life forms or ecosystems to participate fully in social life? Whatever one's views about the agency of nonsentient entities, it seems implausible that such entities have either the capacity to participate or an interest in participating as equal partners. Moreover, it is difficult to see what justice would require to secure "participatory parity" for nature. On Fraser's account, justice requires two things: (a) that material resources be distributed in a way that ensures each member's inclusion and voice; and (b) that "institutionalized patterns of cultural value express equal respect for all participants and ensure equal opportunity for achieving social esteem" (2001, p. 29). Neither of these conditions can be aptly applied to nature. Lacking the ability to interact as a member of the political community, or as a peer, nature has no voice that might be enabled by giving it more resources or providing it with opportunities for social esteem.

The second problem is that Schlosberg obfuscates the central role of claim rights in Fraser's theory of recognitional justice. Notice that recognitional injustice occurs when individuals are denied that to which they entitled—namely, social relations of "reciprocal recognition and status equality" (Fraser, 2001, p. 24). Since members of a social community are victims of injustice when their moral right to participatory parity is denied, we need to know more about who can bear such a right and who in fact does. That is, before we can declare that nature has suffered a status injury, we need an account of how it can and does, in fact, have a claim against us to recognition and status equality.[18] Thus, the prior question of whether nonsentient entities can be the bearers of moral rights must be settled before we can determine whether or not such entities have suffered a recognitional injustice.[19]

At this point, some defenders of justice for nonsentient entities may protest that the concept of justice I am operating with is inherently anthropocentric and thus not fit for purpose. But such a move does nothing to further the cause of protecting nonsentient entities and damages the concept of justice in ways that render it useless to humans and other sentient animals. If justice is no longer about pro tanto enforceable moral rights, then how are we to distinguish the concept of justice from other moral values? Moreover, as we saw, the reason that ecocentrists and biocentrists want to adopt the discourse of justice in the first place is because of the special role that the concept has in our moral and political thinking. When we strip the concept of its distinguishing features, justice is no longer what we believed it to be and thus no longer able to do the job that we wanted it to do.

4. BIOCENTRISM AND ECOCENTRISM: CROSSING THE RIVER TO GET WATER

In section 2, I outlined the main features of the discourse of justice that have made it attractive to biocentrists and ecocentrists. However, to conclude this paper, I think it is worth noting that some of the advantages of justice talk have been exaggerated and that some of the perceived benefits can be achieved by other means. First, while duties of justice are often taken to be more stringent than other moral duties, the key word here is *often*. Importantly, it is not always the case that duties of justice must be prioritized. Many things beyond sentient animals matter morally and can count in their own right. This does not mean that we can directly wrong nonsentient entities or that we have duties *to* them, but rather that they can give us moral reasons to choose one course of action over others. Their value, either instrumental or noninstrumental, can count in our considerations and, in some cases, may place constraints on what we can do in the name of justice.

Second, entities can be afforded legal protection without those entities being the bearers of moral rights.[20] Again, this does not mean that the legal protections are in place to protect against wrongs done *to* the entity in question or to compel us to fulfil our moral duties *to* that entity. There are, for instance, many instrumental reasons that can ground institutional protection of the environment—protecting the environment is necessary for protecting human and nonhuman animal well-being, for instance—and it is therefore unnecessary to cook up justice claims on behalf of nature in order to justify enforceable institutional and legal measures.

All of this is to say that dropping justice talk for nonsentient life and ecosystems does not entail denying their value, ignoring them in our moral and political thinking, or leaving them vulnerable to abuse and neglect by humans. Furthermore, the project of "greening" theories of social justice does not require that we grant moral rights and entitlements of justice to nonsentient nature and ecosystems. Indeed, there are many existing accounts of environmental justice that effectively make visible the instrumental and noninstrumental value of the environment and offer credible frameworks for its protection (e.g., Holland, 2014).[21]

CONCLUSION

In conclusion, this paper has sought to bring clarity to the recent dispute among animal-rights theorists and environmental ethicists over the proper scope of justice. I have suggested that, by thinking more carefully about the concept of justice, we are in better position to see what kinds of entities are eligible for considerations of justice. Furthermore, I have argued that entitlements of justice are claim rights with correlative directed duties that can be enforced, and that the structure of justice relations tells us something about the entities that can stand

in such relations. Specifically, only entities that can be appropriately assigned enforceable claim rights are eligible for just entitlements. Thus, if biocentrists and ecocentrists want to bring nonsentient entities into the domain of justice, then they must establish that those entities are the bearers of claim rights.

ACKNOWLEDGEMENTS

Many thanks to Rich Healey and two anonymous referees for this journal for providing written feedback on earlier drafts. I would also like to thank audiences at the International Conference On Convergence and Divergence between Animal and Environmental Ethics (2017), and the Centre de Recherche en Éthique for their critical and helpful comments in discussion.

NOTES

[1] See, for example, Cochrane, 2012; Donaldson and Kymlicka, 2011; Horta, 2013; Nussbaum, 2006, 2011; Pepper, 2016; Regan, 1983; Wyckoff, 2014. One standard way of excluding nonhuman animals is to deny that they have the relevant capacities (rationality or moral agency, say) to count as subjects of justice—to maintain they are not sufficiently like *us*. The most compelling response to this move is to note that all humans lack these capacities at some points in our lives, such as when we are infants, when we are ill, when we are severely injured or disabled, or when we suffer from the neurological diseases associated with old age. Few are prepared to accept that infants have no claim to having their needs met, or that Alzheimer's patients are not entitled to adequate care and assistance. Thus, it is now widely felt that rationality and moral agency set the threshold for entry into the community of justice too high. However, once we grant that *all* humans must be included under the protective sphere of justice, there is no good reason to deny entry to the many other sentient animals who are similar to us in their basic needs and vulnerabilities.

[2] See, for example, Cochrane, 2012, p. 36-38; Donaldson and Kymlicka, 2011, p. 32-39; Horta, 2013, p. 36-37; Nussbaum, 2006, p. 358-362.

[3] The basic question of which entities count as *candidate* recipients of justice should be kept separate from the question of which entities count as *actual* recipients of justice. The latter question can only be answered by adopting a particular conception of justice, whereas the former is a conceptual question about the scope of the application of the concept of justice (see n. 5 below). Here I am concerned with the first question.

[4] Here I am interested in the concept of justice and not any particular conception. For more on the distinction between concepts and conceptions, see Rawls, 1999. Furthermore, much of what I say here is compatible with Pablo Gilabert's elaboration of the concept of duties of justice which he defines as follows:

> Duties of justice are duties to preserve or promote people's access to important conditions or goods to which they are entitled and whose fulfillment is prima facie enforceable. This enforcement is all things considered justifiable if it is necessary for or strongly contributes to securing the required preservation or promotion and can be feasibly introduced without imposing unreasonable costs. (Gilabert 2016, 509)

Specifically, of the four features that I discuss below, three track Gilabert's account: entitlement, rights, and enforceability. I do not have the space here to show why the concept of justice is not strictly concerned with negative, perfect, or institutional duties of justice, but to my mind Gilabert convincingly argues that those distinctions belong to specific conceptions of justice rather than to the concept. For more on this see Gilabert, 2016.

[5] Of course, not all objects that are the source of injustice can appropriately be assigned duties of justice. Laws and conventions, for example, may be unjust, but lacking the capacity for political agency cannot bear duties of justice. This means that the set of duty bearers within a scheme of justice does not necessarily coincide with those things that comprise the site of justice. This being such, the question of who bears responsibility for justice arises. Answers

to this question vary, but that dispute is not of concern here because we are strictly concerned with the question of who can count as *entitlement bearers*.

[6] Which entities can be aptly described as just or unjust is a subject of much disagreement and is connected to the issue of what constitutes the "site of justice." The site of justice comprises all those things to which principles of justice can appropriately be said to apply, including, for example, personal conduct, social institutions, laws, and conventions. My argument here does not depend on adopting a particular view about the site of justice, but I take it as standard that institutions, including economic arrangements and systems of law, are liable to evaluations of justice.

[7] I want to leave open the question of whether there are some duties of justice that do not correlate with the rights of some other or others. While beneficiaries of justice are owed that to which they are justly entitled, it is conceivable that not all of our duties of justice correspond to a correlative right holder.

[8] This is unsurprising because theorists of global justice are also concerned with the question of who is eligible for considerations of justice, but that conversation is centred on political and geographical boundaries and not on species boundaries. For challenges to the anthropocentric bias in contemporary theorizing about global justice, see Horta, 2013; Pepper, 2016, 2017; and Steiner, 2011.

[9] At the very least, claim rights that protect the most fundamental interests must count as entitlements of justice—e.g., interests in bodily integrity, health, and subsistence.

[10] In some cases, acts of disloyalty, dishonesty, selfishness, and indifference may also manifest injustice. For example, when dishonesty is employed to dispossess you of what is rightfully yours, and where your right is enforceable against others, it would be appropriate to recast the wrong as a wrong of injustice. Nonetheless, while such cases exist, they do not show that *all* cases of dishonesty, selfishness, and indifference are instances of injustice or that it would be desirable to class them as such.

[11] For instance, both David Schlosberg (2007) and Daniel Crescenzo (2013) move from the descriptive claim that ecosystems have integrity to the normative claim that ecosystems are entitled, as subjects of justice, to have their integrity respected and promoted. But the normative does not follow from the descriptive. The idea that ecosystems are candidate entitlement bearers in schemes of justice cannot be established by simply making the claim that they have integrity, because there is no apparent connection between integrity and just entitlements. What must be shown is that all entities with integrity can possess claim rights and that integrity can ground claim rights. Similarly, both Katy Fulfer (2013) and Anna Wienhues (2017) argue that an entity is a subject of justice if it has the capacity to flourish. However, in neither case are we provided with an account of how entities with the capacity for flourishing possess claim rights or how the capacity for flourishing can ground claim rights.

[12] Incidentally, despite his commitment to biotic egalitarianism, Paul Taylor embraces a version of the Will Theory in his seminal work *Respect for Nature* (1986, p. 234). Adopting the Will Theory of rights for humans leads Taylor to conclude that, while there is no conceptual barrier to extending moral rights to animals and plants, we "should never … think of them as having rights in the same way we have rights, that is, in what might be called the primary sense of being a rights-holder" (1986, p. 254). According to Taylor, not only is ascribing rights to plants and animals "confusing" and "misleading" (1986, p. 254) but "the reference class of the concept, bearer of moral rights, should [not] be extended to include nonhuman living things" (1981, p. 218). So, on Taylor's account, since neither plants nor animals can be considered rights holders, they must, in line with my analysis above, stand outside of the scope of justice.

[13] James Nash advances something like this view in his defence of biotic rights: "All life is sacred or intrinsically valuable and worthy of being treated as the subject of human justice. Indeed, the recognition of intrinsic value in nonhuman creatures implies the recognition of their legitimate claims [i.e., rights] for appropriate treatment from the human community and, therefore, for some level of rights and human responsibilities" (1993, p. 240).

[14] Sentience is a necessary, but not sufficient condition for rights on Kamm's view, which leaves open the question of whether any sentient nonhuman animals will count as rights holders.

[15] Here I am indebted to an anonymous referee of this journal for bringing this point to my attention.

[16] There is a similar line of thought in Val Plumwood's work where questions of justice are taken to include questions of "ethical recognition" (1999, p. 189). For Plumwood, central to the injustice done to nonhuman nature is our failure to grant it the respect it deserves. In the case of plants, Plumwood argues that "we do them *an injustice* when we treat them as less than they are, destroy them without compunction, see them as nothing more than potential lumber, woodchips or fuel for our needs (a form of incorporation), fail to attend adequately to them, radically dissociate from them and deny their organization as intentional (and perhaps communicative) beings, thus adopting the stance of ethical closure or dismissal" (Plumwood, 1999, p. 201; emphasis added).

[17] I.e., capacities bound up with self-worth, self-realization, and the desire to have others regard us appropriately.

[18] It is also worth pointing out that relations of recognition with nature would necessarily be asymmetrical insofar as nonhuman entities cannot engage in "reciprocal recognition."

[19] I leave open the possibility that we might act wrongly with regard to nonsentient entities when we fail to attend to their value, which seems quite plausible to me. On this view, some nonsentient entities, such as plants, ecosystems, and works of art, may be noninstrumentally valuable and thus give rise to reasons that place constraints on what we can and can't do with regard to them (see Kamm, 2007). Note, though, that this falls far short of attributing to them the status of rights holders, where we owe it *to* them to act in certain ways.

[20] One might wonder what the preceding account makes of some legal persons, such as corporations, that are ascribed rights, responsibilities, and powers by law and yet lack sentience. Shouldn't we see these entities as possessing moral claim rights that underpin their legal rights? This interesting question raises a number of complicated issues to do with social ontology and collective rights. Precisely how we should think about these kinds of entities requires us to take a stand on whether collectives have moral status independent of the individuals who make them up. My sense is that if the legal rights, obligations, and privileges of nonsentient legal persons have a moral foundation, then they are derived from the interests of the sentient individuals who constitute them, but I cannot address this issue in any more detail here.

[21] While I think that biocentrists and ecocentrists can achieve much without appeal to justice talk for nonsentient life things and ecosystems, I do not mean to suggest that there is no normative or practical import to counting as a subject of justice. As I stressed in section 2, counting as a subject of justice means that one has a unique moral and political status that others are obligated to recognize, and which they can be compelled to respect. Moreover, the unique status of subjects of justice gives us at least a prima facie reason to prioritize our duties to them over other moral reasons that we have for action, and, where we are unable to satisfy our duties to them, we are under an obligation to find alternative ways and means of honouring those duties. It is also the case that subjects of justice, since they can be directly wronged, might be owed compensation when they are denied their just entitlements. The same is not true of entities that are protected by law but that are not subjects of justice; compensation may be owed to someone, but not to entities that cannot be the victims of direct wronging.

REFERENCES

Baxter, Brian, "Ecological Justice and Justice as Impartiality," *Environmental Politics*, vol. 9, no. 3, 2000, p. 43-64.

Baxter, Brian, *A Theory of Ecological Justice,* London, Routledge, 2005.

Cochrane, Alasdair, *Animal Rights Without Liberation,* New York, Columbia University Press, 2012.

———, "From Human Rights to Sentient Rights," *Critical Review of International Social and Political Philosophy*, vol. 16, no. 5, 2013, p. 655-675.

Crescenzo, Daniel L., "Loose Integrity and Ecosystem Justice on Nussbaum's Capabilities Approach," *Environmental Philosophy*, vol. 10, no. 2, Fall 2013, p. 53-73.

Donaldson, Sue, and Will Kymlicka, *Zoopolis: A Political Theory of Animal Rights*, Oxford, Oxford University Press, 2011.

Fulfer, Katy, "The Capabilities Approach to Justice and the Flourishing of Nonsentient Life," *Ethics & the Environment,* vol. 18, no. 1, 2013, p. 19-38.

Fraser, Nancy, "Recognition without Ethics?," *Theory, Culture, and Society*, vol. 18, no. 2-3, 2001, p. 21–42.

Gilabert, Pablo, "Justice and Beneficence," *Critical Review of International Social and Political Philosophy*, vol. 19, no. 5, 2016, p. 508-533.

Held, Virginia, *The Ethics of Care: Personal, Political, and Global,* Oxford, Oxford University Press, 2006.

Hohfeld, Wesley Newcomb, "Some Fundamental Legal Conceptions as Applied *in* Judicial Reasoning," *The Yale Law Journal*, vol. 23, no. 1, 1913, p. 16-59.

Holland, Breena, *Allocating the Earth: A Distributional Framework for Protecting Capabilities in Environmental Law and Policy*, New York, Oxford University Press, 2014.

Horta, Oscar, "Expanding Global Justice: The Case for the International Protection of Animals," *Global Policy,* vol. 4, no. 4, 2013, p. 371–380.

Kamm, Frances M, *Intricate Ethics*, Oxford, Oxford University Press, 2007.

May, Simon Căbulea, "Directed Duties," *Philosophy Compass*, vol. 10, no. 8, 2015, p. 523-532.

Nagel, Thomas, "The Value of Inviolability," *in* Paul Bloomfield (ed.), *Morality and Self-Interest,* Oxford, Oxford University Press, 2008.

Nash, James A, "The Case for Biotic Rights," *Yale Journal of International Law*, vol. 18, no. 1, 1993, p. 235-249.

Nussbaum, Martha C, *Frontiers of Justice: Disability, Nationality, Species Membership*, Cambridge, MA., Harvard University Press, 2006.

———, *Creating Capabilities—The Human Development Approach,* Cambridge, MA., Harvard University Press, 2011.

Pepper, Angie, "Beyond Anthropocentrism: Cosmopolitanism and Non-Human Animals," *Global Justice: Theory Practice Rhetoric*, vol. 9, no. 2, 2016, p. 114-133.

———, "Justice for Animals in a Globalizing World," *in* Andrew Woodhall and Gabriel Garmendia da Trindade (eds.), *Ethical and Political Approaches to Nonhuman Animal Issues*, Palgrave Macmillan, 2017.

Plumwood, Val, "Ecological Ethics from Rights to Recognition: Multiple Spheres of Justice for Humans, Animals and Nature," in Nicholas Low (ed.), *Global Ethics and Environment*, London, Routledge, 1999.

Rawls, John, *A Theory of Justice*, revised edition, Cambridge, MA., Harvard University Press, 1999.

Regan, Tom, *The Case for Animal Rights,* Berkeley, University of California Press, 1982.

Schlosberg, David, *Defining Environmental Justice*, Oxford, Oxford University Press, 2007.

———, "Justice, Ecological Integrity, and Climate Change," *in* Thompson, Allen and Jeremy Bendik-Keymer (eds.), *Ethical Adaptation to Climate Change: Human Virtues of the Future,* Cambridge, MA., MIT Press, 2012, p. 165–184.

Steiner, Gary, "Toward a Non-Anthropocentric Cosmopolitanism," *in* Rob Boddice (ed.), *Anthropocentrism: Humans, Animals, Environments*, Leiden, The Netherlands, Brill, 2011.

Taylor, Paul W, "The Ethics of Respect for Nature," *Environmental Ethics*, vol. 3, no. 3, 1981, p. 197-218.

———, *Respect for Nature,* Princeton, Princeton University Press, 1986.

Wienhues, Anna, "Sharing the Earth: A Biocentric Account of Ecological Justice," *Journal of Agricultural and Environmental Ethics*, vol. 30, no. 3, 2017, p. 367-385.

Wyckoff, Jason, "Towards Justice for Animals," *Journal of Social Philosophy*, vol. 45, no. 4, 2014, p. 539-553.