

Reflections on the Physical or Visceral Mode of Argumentation in Michael Gilbert's Theory of Multi-Modal Argumentation and its Relation to Gesture Studies and The Embodied Mind

Réflexions sur le mode d'argumentation physique ou viscéral dans la théorie de l'argumentation multimodale de Michael Gilbert et sa relation avec les études gestuelles et l'esprit incarné

Claudio Duran

Volume 42, Number 3, 2022

Special Issue: Michael Gilbert's Multi-Modal Argumentation

URI: <https://id.erudit.org/iderudit/1092376ar>

DOI: <https://doi.org/10.22329/il.v42i3.7502>

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Publisher(s)

Informal Logic

ISSN

0824-2577 (print)

2293-734X (digital)

[Explore this journal](#)

Cite this article

Duran, C. (2022). Reflections on the Physical or Visceral Mode of Argumentation in Michael Gilbert's Theory of Multi-Modal Argumentation and its Relation to Gesture Studies and The Embodied Mind. *Informal Logic*, 42(3), 583–601. <https://doi.org/10.22329/il.v42i3.7502>

Article abstract

In this paper I question the primacy of argumentation relying solely on logic by showing how the body and mind are deeply connected and as a result how communication and argumentation are a product of this mind/body connection. In particular, I explore the physicality of argumentation through the research and writings on gestures and the embodied mind. Michael Gilbert's theory of multi-modal argumentation provides the general approach for this elaboration.

Reflections on the Physical or Visceral Mode of Argumentation in Michael Gilbert's Theory of Multi-Modal Argumentation and its Relation to Gesture Studies and The Embodied Mind

CLAUDIO DURAN

*Professor Emeritus
York University
Toronto, ON
Canada
claudioduran@rogers.com*

Abstract: In this paper I question the primacy of argumentation relying solely on logic by showing how the body and mind are deeply connected and as a result how communication and argumentation are a product of this mind/body connection. In particular, I explore the physicality of argumentation through the research and writings on gestures and the embodied mind. Michael Gilbert's theory of multi-modal argumentation provides the general approach for this elaboration.

Résumé: Dans cet article, je questionne la primauté de l'argumentation qui repose uniquement sur la logique en montrant comment le corps et l'esprit sont profondément connectés et par conséquent comment la communication et l'argumentation sont le produit de cette connexion esprit/corps. En particulier, j'explore la physicalité de l'argumentation à travers la recherche et les écrits sur les gestes et l'esprit incarné. La théorie de l'argumentation multimodale de Michael Gilbert fournit l'approche générale de cette élaboration.

Keywords: argument₁, argument₂, embodied mind, emotional mode, gesture, gesture-speech unity, information packaging hypothesis, kisceral mode, logical mode, multi-modal argumentation, physical or visceral mode, spatio-motoric thinking

[I]n spite of two thousand years of higher education based on the notion that man is essentially a soul for mysterious accidental reasons imprisoned in a body, man remains incurably obtuse and still secretly thinks of himself as first and foremost a body. (Phillips 1999, p. 132)

The position of this paper is that mind and body are not two entities related to each other but an inseparable whole while functioning. (Ginsburg 2016, p.79)

Thus we position ourselves within a tradition in which abstract thought and materiality are assumed to be entwined. According to phenomenological currents within this tradition, thinking and reasoning – and any other related cognitive constructs—are always external or located in the ‘flesh’: ‘Thinking is not a process that takes place “behind” or “underneath” bodily activity itself’, but is the body activity itself’ (Ferrara and Nemirovsky, 2005 p.139). (*Mathematics and the Body*, de Freitas and Sinclair 2016 pp. 3-4)

The concept of phantasies is drawn from psychoanalytic vocabulary and is beholden to the object relations theories of Melanie Klein, who considered the mind as our fundamental phantasy. (Britzman 2021, p. XVI)

1. Introduction

Argumentation refers to human processes characterized by producing an argument₁ or being involved in an argument₂. The concepts of argument₁ and argument₂ were introduced by Daniel O’Keefe in a 1977 paper “Two concepts of argument.” As we can read in Michael Gilbert’s book *Coalescent argumentation*:

D. J. O’Keefe introduced a distinction that became crucial for future writers. He distinguished between arguments₁ and arguments₂, where the former denotes an abstract or concrete object that is the result of an individual’s *making an argument* whereas the latter designates that process in which two arguers are engaged when *having an argument*. (1997, p. 17)

In conversations that I have had with many people of different languages, English is the only language in which this happens. I want to suggest in this paper that in both cases the arguer or arguers start with the goal of being logical (even if they are not) from their *physical* reality as bodies that reflect. While using the word bodies may seem odd, how else can arguments be developed if not with bodies?

The issue is important because we tend to assume that somehow and somewhere inside bodies there are minds that are the true processors of arguments. While we rely on our bodies to see, touch, and smell, we tend to concentrate on the meanings of the words we listen to when we are arguing. These meanings are carried physically, one way or another in the process (by way of speaking, reading, etc.), but we still expect something deeper: the functioning of a structure that we call the “mind.” And here lies the problem: we have no clear and definite sense of a mind: I have not ever seen it in me or anyone else, nor can I listen to, touch, or smell it. And yet I refer to it as a complex structure much deeper than the body. In many cases we believe that the mind is the “real” self, and for some, even destined to supersede us after we die. We might even say that the mind refers to a set of difficult processes to ascertain, locate, and find, but that make logical sense: a much more and fundamental sense than the body.

In any case, we seem to think that the mind is somewhere inside the body, not outside it, like a companion that follows us everywhere, and at all times, as our closest partner. While the brain tends to be seen as the central station of the mind, we may also believe that the mind is located in the brain and distributed somehow throughout our body. Also, we may want to think that the mind is only a word or concept that we use to refer to our capacity to think, experience, feel, etc. Now, the concept of mind may be a necessary and sufficient word to refer to our capacity to reflect, feel, etc. In this sense, we can say that the mind refers to a set of experiences within our body, also involving the skin that is the outer limit of the body. It may be useful then to refer to it as the “embodied mind.” That is, the bodily capacity to articulate thoughts, feelings, and many other empirical experiences that are fundamental to our lives. This understanding of ourselves as contained by the skin, remains limited considering our many relations with the outside environment.

2. Concerning the primacy of logic in argumentation theory

Why is the logical mode almost always considered the essential mode in argumentation theory, and effectively the only mode that

counts when dealing with argumentation? Why are emotions perceived as a risk when dealing with argumentation? Why should they be repressed or taken out of the argumentation processes? Or seen as a lesser component in these processes? What about physicality? Is it ever included in these processes? Is it generally mentioned when analyzing arguments?

The kisceral mode (defined by Gilbert as a mode dealing with intuition, the mystical, or extrasensory perception, as we will see) is more complex however, since it involves intuitions which have played a significant role in the history of logic, mathematics, and physics, and more generally in the natural sciences, social sciences, and humanities. Intuitions have a role to play together with logic in argumentation theory as it has developed so far. The kisceral, however, relates to more than intuitions since it involves other factors that are highly unlikely to be valued by people who adhere to a strict logical position, factors such as: coincidences, hunches, the uncanny, etc.

The point of these introductory notes, however, is the following: Why do we believe that arguments should be dealt with almost exclusively from the perspective of the logical mode?

There is no doubt that the logical mode has been crucial in the development of human life on Earth. Very few people, if any, doubt the extraordinary achievements of the role logic has played in mathematics, physics, the natural sciences and the technological advances, industrial and medical developments, that emerged from them. The same applies to the social sciences and humanities. Indeed, the logical mode has achieved a remarkable prominence in our lives.

Therefore, if we study arguments (1 and 2) the expectation is that we ought to do so from the perspective of the logical mode: emotions should be kept at bay, the physical is not relevant, and intuitions are valued only as those experiences that provide the starting points of logic or that might come to our rescue when logic is not able to supply solutions.

And yet, there are limitations to this approach. What happens, for instance, when we try to understand a political dispute between Republicans and Democrats in the USA, or their equivalent in other societies? Don't we see emotions flowing like a river when

we attend to sessions of congress or parliaments? Don't we appreciate physical expressions in the congresspeople or members of parliaments? In their body language, in their gestures, in their tone of voice, etcetera? Isn't there sometimes something kisceral that occurs that helps in the resolution of a problem or, more often, in the explosion of a problem? Isn't this something that happens often in all spheres of life?

If this is the case, if there are many instances of life we experience beyond logic, can the logical mode on its own be enough to deal with argumentation? Don't we have to involve the other three modes that Gilbert examines in detail in his work in argumentation theory?

3. Multi-modal argumentation and the role of the physical in argumentation

The focus of this paper is to build a deeper understanding of the physical mode of argumentation—one of the four modes outlined in Gilbert's theory of multi-modal argumentation. For that purpose, I start with a quote from Gilbert's book, *Coalescent argumentation* (1997), that describes in general his theory of multi-modal argumentation.

It has been argued in previous chapters that the traditional and dominant mode of arguing, the C-L, Critical-Logical mode, is restrictively narrow. When this mode is seen as the only one legitimate form of rational argumentation, then there are profound and unreasonable limitations on actual argumentation as performed by real actors, and the limitation of methods favored by one group over another. These limitations provide both descriptive and normative reasons for rejecting the C-L mode as the sole legitimate form of argumentation. In this chapter, three new modes of argumentation, raising the number to four, are introduced. In addition to the classical logical mode (usually and egregiously identified with "the rational"), there are the emotional, visceral (physical) and kisceral (intuitive) modes. This chapter introduces these modes. (p. 75)

The first mode that Michael Gilbert introduces is the logical mode and in doing so he uses two examples, one a deductive

argument and the other an inductive argument. It is clear, however, that in both cases, the arguments exhibit emotional and visceral /physical forms of argumentation.

The first refers to a police situation in which one detective makes a logical argument that concludes that the criminal must be in a certain room. This is acceptable on logical grounds to the second detective. Gilbert writes that the argument is “classically logical and follows closely the pattern known as V-Elimination or Disjunctive Syllogism in a Natural Deduction system” (p. 81). However, there is more than logic at work in a situation fraught with danger. Gilbert claims that a great deal more has occurred in this argument than its logical formalization shows, such as the participants’ fear and tension in being in a dangerous situation. Also, as he is in pursuit of the criminal, and while the detective is making the logical argument, he simultaneously indicates with his revolver the room where the criminal is hiding. This suggests that a physical argument is involved in the argumentation mix.

The second example refers to an argument between a couple: She is trying to persuade him to go to the movies in a certain area of the city. He says that it is too late, and that particular cinema is always packed at that time. This is a case of an inductive argument at work. According to Gilbert, the interesting thing about this argument is that he did not need to say anything to communicate as it was enough for him to simply make a face and point to the clock. This fact leads Gilbert to conclude that: “In other words, being verbal or nonverbal is not itself either necessary or sufficient determination of mode” (p. 82).

In both examples, a combination of argumentation modes has been employed. For the purpose of this paper, I would like to draw particular attention to the relation between the logical and the physical modes.

Now, Gilbert introduces the section in his book on the visceral/physical mode saying that “[t]hese arguments are primarily physical and can range from a touch to classical nonverbal communication, i.e., body language, to force” (p. 84). He discusses three cases to illustrate this mode.

The first is called “shrimp for dinner.”

Michael is sautéing some shrimp for the dinner he is making. Deanne asks him if he thinks adding a bit of curry is a good idea. Michael says no.

Deanne goes to the kitchen cupboard and begins searching all around. She seems to give up, but then gets the step stool and begins rummaging through the upper shelves of the cupboard. Michael notices, but, busy with his shrimp, does not say anything. After a bit, Deanne climbs down, goes over to Michael, stands very close, and holds a can of curry. “Are you sure don’t want to add just a little curry powder?” Michael looks from Deanne to the can of powder and says, “Well, yeah, sure, O.K.” (pp. 84-85)

In this case, there is some verbal expression at the beginning, before Deanne starts rummaging, but Gilbert claims that the rummaging is the main factor at work in Deanne’s argumentation. Michael becomes convinced by Deanne’s physical actions.

Now, it is certainly possible to say that, while the physical actions by Deanne may be considered the decisive factor in her argumentation, there have been words and sentences involved from the beginning of the exchange. This is consistent with the examples discussed above when dealing with the logical mode. Therefore, logic and physicality could be seen as related to each other, if not always, then certainly in some cases. Or could it be possible to claim that the relation between them may be inherent?

Certainly, Gilbert opened the door to a vast and unexplored territory in argumentation theory, that is, to the study of happenings that we call arguments, such that these happenings should be analyzed from the perspective of four modes of argumentation.

Physical arguments are those in which the main thrust of the arguments is constituted by physical expressions. These could include words and speeches, emotions, and logic but the essence here is physical.

We need to refer to the distinction between arguments₁ and arguments₂. Let us say that the physical aspect refers to both:

- 1) Argument₁.- I raise my hand arguing that you should stop.
- 2) Argument₂.- An argumentative encounter where the arguers at some point refer to each other by dismissive gestures with the arms and hands.
- 3) We can say then that arguments₂ in the case of physical manifestations involve arguments₁ as units of the interactions.

It can happen, in fact it happens often, that, at the same time that physical expressions appear, there are sentences and/or words produced: “You don’t understand this,” for example.

Now, the expression of sentences or words, let us say speech, is already a physical action. Indeed, the phoniatric system is the physical apparatus that makes it possible to interact verbally in an argument. Moreover, ultimately the brain is involved as well as other parts of the body. So, the *process* of arguing₂ is inherently physical, as is the *production* of arguments₁. Since the ears are involved as well, we can say that arguing is already a highly complex physical activity.

We need to consider as well that arguments may be developed by people with no speech and/or a hearing impairment. In this case the arguments would proceed in written form or some other forms. In all these cases physical expressions of one kind or another are present. Therefore, the very nature of argumentation involves the physical, something that we need to take into account from the outset.

However, it seems that often what is meant by an argument is not this physical manifestation, but the intellectual activity involved. To explore this view, I use as an example the following:

Somebody argues that “Plato’s main dialogue is the *Gorgias* because it has gone beyond the strictly Socratic approach of earlier dialogues and is not yet encumbered with the metaphysical doctrine of *The Republic*” (Dodds 1959, p. v). Clearly this argument₁ is expressed physically one way or another, since it will be presented orally or in written form, and invites a response from the interlocutor. However, the thrust of the argument goes beyond the purely physical expressions of the utterance.

Indeed, the interlocutor may comment that the arguer has used sounds that are unpleasant, and that does not help for facilitating a discussion, but s/he understands the academic point involved. The response may be for example that in her/his view *The republic* is Plato's main work. This would constitute the beginning of an argument₂ which would proceed in the form of highly intellectual exchanges from both arguers.

What exactly is meant by "highly intellectual"? Remember, the exchange is still based on physical activity in both arguers. But it goes beyond that. This is now an exchange that requires careful and systematic reading of Plato's dialogues as well as other authors' interpretations of platonic philosophy. There is a long tradition of interpretation dating back to Plato's time and in fact, this is what constitutes much of what happens in departments of philosophy in universities. The scholarship is deep and may cover many thousands of pages in books, papers, articles, etc. The arguers need to be aware of platonic scholarship to be able to participate successfully in the argumentation.

Therefore, we could say that although we can agree that the argument₂ taking place has a physical basis—it cannot take place if there are no live bodies involved—it also cannot be resolved at a purely physical level.

3.1. The role of gestures

I now intend to move into an area where I rely on a mix of intuitive approach on my part, and psychological empirical research done by educational psychologists, neuropsychologists, psycholinguists, and neuroscientists. I reference the book *Why gesture?* (Church, Alibali and Kelly 2017). This book contains eighteen essays that reflect the work of hundreds of papers representing empirical research done over the course of twenty years. These psychologists specialize in empirical research on gesture with a specific focus on the way the hands function in speaking, thinking, and communicating, and for these reasons offer an important contribution to argumentation theory. Some of these papers represent the work of a psychologist with a background in existential philosophy.

A quote from the Introduction to Chapter 1 is helpful:

An additional goal of the book is to ask the question of “why gesture” in a second way: Why study gesture? Of what value is gesture in our understanding of basic cognitive and social processes, such as speaking, thinking, and communicating? In the past decade, the field of gesture studies has greatly expanded and connected with new and diverse areas of inquiry. This expansion and connection has affected how we think about phenomena not typically associated with gesture. For example, traditional theories of cognition have explained human thought independently from the body, but research on gesture has contributed to a rise of newer theories that take a more embodied approach (Barsalau 2008; Glenberg & Kaschak 2002; Shapiro 2010; Zwaan 2003). With specific regard to language, research in the past decade has shown that the brain processes gesture and speech in a similar fashion, and these findings have challenged traditional views of language as primarily “verbal” phenomena (Kelly et al. 2008; Ozyurek, 2014). These fresh connections make the study of gesture more important than ever. (Church et al. 2017, p. 5)

Importantly, the authors suggest that gestures not only accompany speech but actually help *produce* speech, and that gestures are exceedingly helpful when organizing information required for speech. In fact, they found that when the information being organized is more difficult, speakers use more gestures. This idea, referred to as the ‘information packaging hypothesis,’ contends that, “producing representational gestures ‘helps speakers organize rich spatio-motoric information into packages suitable for speaking’” (p. 16) and offers an alternative way of thinking that allows one “to ‘find’ possibilities for organizing information that analytic thinking may not be able to ‘find’ as easily” (p. 33). And so, in “producing speech the two modes of thinking are coordinated and tend to converge” (p. 16).

If we draw on these findings, we may be able to come up with some conclusions about our understanding of the way that some physical aspects of human beings relate to intellectual work.

First, we could say that intellectual work requires the coordination of physical activity with the body: that is, it may not be possible to develop intellectual work if there are no gestures (in this

case, with our hands) since these are seen to contribute to the organization of thinking analytically.

Second, this relates to the way our brain functions in analytic thinking. Somehow, what will come out as speech in say an argument about a philosophical issue, such as the Platonic one referred to above, requires physical participation without which there may not be an academic argument₁ at all and so no argument₂ either.

Third, I am not trying to reduce the understanding of Plato's philosophy to purely physical inputs. We must begin with a clear sense that the production of analytical ideas has a reality that must be an essential datum, but in order for those ideas to be produced, they require the participation of what is termed "spatio-motoric" activity through gestures.

In particular, in his studies about the evolution of the relationship between gestures and speech, the psycholinguist David McNeill suggests that both began together and continued being together throughout our evolution. He believes that a thought is constituted by both and describes this as the "gesture-speech unity claim."

In McNeill's view, gesture and speech are co-expressive but differ semiotically—the gesture, he claims, is global-synthetic and non-combinatoric; the linguistic material is the opposite: co-expressing the same in opposite semiotic modes. That gestures are global and synthetic means that:

[...] the meaning of individual features depends on the meaning of the whole. Distinct meanings converge into a single, synthetic gesture. In contrast, speech is analytic and combinatorial, in the sense that the meaning of the whole depends on the meanings of the individual elements. In speech, meanings are distributed analytically into linear series of morphemes, words, and phrases. (Church et al. 2017, p.16)

If all this is accurate, it would suggest that we should not separate the parts of the unity "gesture-speech" but at the same time be able to distinguish the "function" that each of them performs. Thus, we human beings are profound units of the physical and the mental: we operate simultaneously as physical and mental beings.

If we consider this view in the context of a multi-modal argumentation framework, we could say that any logical argument that also involves gestures inherently includes a physical aspect. For example, if we claim that human beings are mortal, this statement is at the same time conceptual and involves the physical. Also, if in stating it we focus on the logicity of the statement, it is still physically related, by sheer fact that we are talking about a physical body. In short, what I am saying is that if we accept McNeill's gesture-speech unity we cannot separate the logical and the physical.

Furthermore, McNeill claims that we are constantly embodying our learning, and it is possible to speculate that this happens even in the most abstract processes of thinking, as would be the case with an abstract mathematical theorem. This view does not mean, of course, that the theorem at stake here is like a "thing": The theorem is still the expression of thoughts, but those thoughts are closely related to the physical in so far as thinking and gestures are related to each other. We are dealing with humans who have the capacity to communicate and argue in several different modes. As part of the whole of nature, humans have the capacity to argue and in doing so they manifest their nature as physical and mental. In fact, at its most complex, the mental is embodied in that it is encased in the body, and thus pertains as well to the body.

3.2. *The embodied mind*

It is also possible that we could speculate within the philosophy of mind. If what I am saying here has any sense, then every argument that we produce is already intimately related to the physical. If so, why separate the mind from the body? Put another way, we could say that if the body is the site of the mind, and the mind inhabits the body, why do we still want to separate them, or at the very least, assume that the mind does not involve the body?

In *Mind in life* (2007) Evan Thompson offers us the following:

From this perspective, mental life is also bodily life and is situated in the world. The roots of mental life lie not simply in the brain, but ramify through the body and environment. Our mental lives involve our body and the world beyond the surface membrane of

our organism, and therefore cannot be reduced simply to brain processes inside the head. (p. ix)

Thompson developed this view with Francisco J. Varela and Eleanor Rosch in their book *The embodied mind: Cognitive science and human experience* (Varela et al. 1991, 2016). This view opens up the possibility of research that, stemming from the deep and inherent relation between the mind and the body, goes beyond into the different aspects of the body that are involved in argumentation. It suggests as well that there are environmental relations that are involved. We could consider this almost self-evident since any argumentation process takes place within a given environment. Certainly, whatever the nature of the environment, arguments can be thought of as related to it. All this would involve developing research projects that go beyond the scope of this paper, but it is worth mentioning it in connection to Thompson's quote above.

Now, if we start to say that the whole process is related to the physical, then we should not be surprised any longer when faced with a definition of the mind: we mean that we have the physical capacity to articulate thoughts and ideas and relate them in a great variety of ways, as well as test them against many aspects of reality. More so, when we think of highly developed theories, for example in physics, they too are expressions, in a specific way, of the physical. Even mathematics, which we often think of as "purely" mental, involves a physical process. A quote from the book *Mathematics and the body* by Elizabeth De Freitas and Nathalie Sinclair closely relates to this issue:

The idea for this book began as we read Gilles Chatelet's (1993/2000) stunning book on the history of mathematics, which challenges many long-standing, as well as contemporary, philosophies of mathematics. His book places gestures and diagrams at the centre of mathematical inventiveness, which struck many chords for us both, not least in relation to our mutual interest in the role of these body-based and mobile devices in the teaching and learning of mathematics. We saw in Chatelet a way of better understanding how materiality might matter for mathematics, which has for so long been taken as an abstract and static discipline that resists any links with the physical world. Although we

have learned a great deal from recent scholars working on the embodied nature of mathematical thinking and learning, we were unsatisfied with some of their basic philosophical assumptions about the nature of both mathematics and the body. (p. 1)

However, it may be objected here that a mathematical theorem, for instance, is a very carefully worked out process. No doubt, the development of all sciences and processes of thinking need to be worked out carefully and systematically. All this means is that some processes that involve the physical must still be carefully worked out! Moreover, don't the body organs manage to work out processes that make human life possible? Don't these processes have to be thorough? We consider the mind as a special "something" that we must evaluate very highly, perhaps as the highest expression of human life. But then, we don't even know where in the body it is, nor how it develops within the body. Indeed, the extraordinary significance of the work that the human species has been able to do for centuries is based on the idea that all of this is the product of the mind. It is no wonder then that we tend to identify ourselves fundamentally with the mind.

3.3. The physical and multi-modal argumentation

So how do these reflections relate to argumentation? We human beings have, for a very long time, developed the idea that there is a mind as separate from the body. We proceeded on that basis to think, reflect, theorize, and enact ideas, develop institutions and industries, etc. We have created a whole world upon this world. Since there is certainly something extraordinarily magical about that and given that we had separated the body from what we assumed a very different being inside which we call the mind, we articulated what seemed to us purely mental views of all kinds: one of them was the capacity to argue.

When it was widely accepted that arguments happen at the level of the mind, we decided that these arguments should respond to the rules of logic. Logic and mathematics were formidable developments at a certain stage of history, later came the physical sciences. After that, a whole set of fully developed logical expectations were in place to understand arguments from the perspective

of logic. In practice, some arguments do respond to logic, and some do not. So, argumentation theory became the study of how arguments happen, how they should be analyzed, evaluated, etc., always under the radar of logic.

However, argumentation is studied from the perspective of arguments₁ and/or arguments₂. If we look at arguments₁, it may make sense to evaluate them from the perspective of logic. However, arguments₂ involve much more than logic: there are emotions involved, there are intuitions involved, there is physicality involved. There is what Gilbert's theory of multi-modal argumentation refers to as kisceral, and which involves more than intuitions with things such as hunches, 'feelings,' and even coincidences.

Having introduced the idea of physicality, I should clarify that every mode is somehow related to the physical. In some ways it would appear as if the physical mode is the most distant from the logical mode. Indeed, some intuitions are closely related to the logical mode and this mode could not work without them. The emotional may be viewed as not logical but also as happening in between the mind and the body, it is lesser than the logical and may even disturb the functioning of logic. The physical may be seen as so closely connected with matter, so invisible in the influence it has on the mind, that we feel that this human dimension should not be considered in matters pertaining to logic.

Now, humans begin life with fertilization which happens in the body of a woman, and this may be considered as the beginning of the body, which continues with us until our death. Death, being a difficult and undefinable reality to face, tended to become the source of deep emotional anguish and pain. So, we relegated this to the body we had no choice in inhabiting and chose instead to focus on the amazing faculty of logic, something that allowed us to imagine, create, and develop entire worlds on Earth and beyond. In the process, the body, while valued in some ways, became less important. Instead, logic came to define human beings because of its ability to explain how exceptional humans are (something the body cannot do on its own), and then became synonymous with the mind.

However, the mind does not exist without a body. Looking back at our development since fertilization our physical nature is

the source of what we do. We have great difficulty in seeing ourselves as bodily, that is physical, beings. We prefer to see ourselves as logical beings. However, if we consider our very origin, and realizing that the body is with us all the time, we realize that our physical nature is foundational: in essence, we should perhaps accept that we live ‘embodied in a mystery.’ Is the challenge then to examine in depth our physical nature as possibly the source of all the modes of argumentation?

So, by the physical mode in Gilbert’s theory I mean, those aspects of the physical that are different from those aspects of the physical that are logical, emotional, and kisceral. For example, a movement of the hand, that is, a gesture, etc. I am tempted here to say that Gilbert’s physical mode entails bodily actions that are not logical, or emotional or kisceral, although they could not be separated entirely from them all or each at a time.

Consider Deanne’s example in Gilbert’s book: isn’t she emotionally related as well to adding curry powder to the shrimps? Isn’t she kiscerally expecting that Michael will add it? Isn’t she logically involved as well for most likely she knows what Michael is sensitive to? Doesn’t she ask a question to start with which seems reasonable? Of course, her argumentation seems to be mainly “physical”: as Gilbert writes “[i]t was her physical actions that comprised the argument and comprised them in a way that precludes translation into the linguistic, logical mode” (1997, p. 85).

This is where the connection between the physical mode of argument and the research that illustrates the close relation between thinking and gestures, and even the possibility that in some cases, gestures themselves are thoughts (referred to above as ‘spatio-motoric thinking’) can be useful. A simple example of this is when someone who answers the question of how fast a car was going, does so by moving one hand very fast without saying anything. If we say that in any event, the person replying had a thought in his mind, that only reinforces the idea that the gesture and the thought are related. Something similar can be said in the second example dealing with an inductive logical argument at the beginning of this paper: it was enough for the man to make a gesture with a finger pointing to the clock.

This requires us to be fully aware of what we mean when we refer to the mind. For there is also speech. There are mental images. There are gestures. These gestures are bodily actions, and the body is inseparable from the mind, moreover the mind is embodied. Finally, these gestures reflect content in the mind of the speaker.

This would constitute a massive undertaking that could take a whole book to explain and I am only touching on some brief elements in order to raise questions about what modes beyond logic may be at play when we argue.

I have so far dealt largely with the issue of gesture production as articulated by Church et al. (2017). The second part of the book deals with gesture comprehension, and in particular Kelly's suggestion that:

...some linguistic components (e.g., concrete semantic and pragmatic) are deeply connected to gestures, but others (e.g., abstract semantic, syntactic and phonetic) are less so. In this way, the hands help to delineate what aspects of language function as part of the body and what aspects operate independently of it. (p. 243)

This discussion, while compelling and important, will not be discussed here. However, it is my expectation that the topic of gestures and speech as dealt with in this paper will become an area of fruitful research for argumentation theorists. So far, this does not appear to have happened. In conversation with one of the co-editors of *Why Gesture*, I asked if there had been any research developed on gestures in argumentation and the reply was negative. This would suggest that the topic is open for research. In my case, this study has helped me to show the relevance of Gilbert's multi-modal argumentation theory especially with regards to the physical mode.

4. Final reflections.

As mentioned above, there seems to be an opportunity to address the gap in the research on gesture and argumentation. Gilbert's theory of multi-modal argumentation provides an opportunity to address this gap because of the way in which he understands physical arguments. If we relate this notion of physical arguments to the research on gesture and speech, especially as articulated in

David McNeill's approach, we can begin to start thinking differently about argumentation.

First, we now know that if gestures and speech are so closely related then it is possible to understand that when arguing with gestures (either arguing₁ or arguing₂), we cannot separate the physical mode from the logical mode. Of course, we do not need to reduce the physical to the logical or the logical to the physical. Both intertwine in the development of argumentation. Having said that, we must also recognize that logic has played an extraordinary role in human history and that it should not be shunned or diminished. At the same we should recognize that, while logic has been given prominence, it is only one mode among at least three other modes of argumentation.

Secondly, the scholarship around the concept of the "embodied mind" may also hold potential significance for supporting multimodal argumentation. Related to this, I should draw attention to the first (Phillips) and third quotations (Britzman) at the beginning of this paper, which introduce two important ideas that require investigation: is it true that we human beings secretly believe that we are essentially bodies? Second, is Melanie Klein right in saying that the mind is our fundamental human phantasy?

Finally, the relation between mathematics and the body, especially as it is dealt with by Rotman (1993), and De Freitas and Sinclair (2014), offers an opportunity to open up a profound reflection into the depth of the relation between the body and thinking.

I have raised a number of questions about the primacy of the logical mode in argumentation and referred positively to the significance of the physical mode as gesture in the context of the embodied mind. It is my hope that further research will be developed to find the appropriate relations between the four modes introduced by Michael Gilbert. I finish here suggesting a potential topic for further study: observing people arguing (both arguments₁ and arguments₂) from the perspective of the way in which gestures relate to speech and thinking.

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