

Fact and Opinion

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[See table of contents](#)

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Article abstract

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Fact and Opinion

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Abstract: Our goal is to analyze the distinction between factual statements and opinions from a philosophical—specifically an epistemological—perspective. Section 1 reviews the most common criteria for drawing the distinction, which while inadequate, as explained in Section 2, still plays an important cultural and political role. In Section 3, we argue that the difference between factual statements and opinions does not involve a single criterion. Instead, the conceptual structure of the terms ‘fact’ and ‘opinion’ is analogous to that of natural kinds—terms with multiple dimensions. We expect that improved theory will lead to improvements in pedagogy, decision-making, and public discourse. But these consequences are not our chief focus.

Résumé: Notre objectif est d'analyser la distinction entre les énoncés factuels et les opinions d'un point de vue philosophique, et plus précisément épistémologique. La section 1 passe en revue les critères les plus courants pour établir la distinction qui, bien qu'insuffisante, comme expliqué dans la section 2, joue néanmoins un rôle culturel et politique important. Dans la section 3, nous soutenons que la différence entre les déclarations factuelles et les opinions n'implique pas un seul critère. Au lieu de cela, la structure conceptuelle des termes « fait » et « opinion » est analogue à celle des genres naturels, termes à dimensions multiples. Nous nous attendons à ce que l'amélioration de la théorie conduise à des améliorations dans la pédagogie, la prise de décision et le discours public. Mais ces conséquences ne sont pas notre principal objectif.

Keywords: fact, opinion, Pew Research Organization, natural kinds

1. Introduction

What is the difference between fact and opinion? Our goal in this article is to analyze the distinction from a philosophical—specifically an epistemological—perspective. To our knowledge, it has not been an active topic in epistemology. The few philosophers who have written about the distinction have tended to dismiss it as ill-founded and dispensable. Yet the distinction is widely taught in primary and secondary education and in some college textbooks on logic and critical thinking (Hurley and Watson 2016, p. 17; Moore and Parker 2015, pp. 5-6; Kelley and Hutchins, 2020, pp. 154-55). It is also embedded in disciplines such as journalism and law. Given how firmly these concepts are integrated into our thoughts and institutions, we do not believe that the distinction between them can be discarded or ignored.

While most people are reasonably adept at distinguishing between fact and opinion, a recent Pew study suggests that we fall short at precisely the point that it becomes most crucial: in public discourse regarding important, controversial issues. Our goal in this paper is primarily theoretical; we hope to suggest an alternative foundation for the fact/opinion distinction. This theoretical concern is motivated by the belief that current pedagogical approaches are less than satisfactory as well as our belief that this distinction is worthy of renewed philosophical examination. Our hope is that philosophical attempts to clarify rather than dismiss this distinction will ultimately lead to improved pedagogy and, hence, improvements in our abilities to correctly sort matters of fact from matters of opinion. We believe that this result would, in turn, lead to improved public discourse.

In 2018, the Pew Research Center (Mitchell et al. 2018) published a survey on people's abilities to distinguish factual statements from opinions in news media.

The main portion of the study, which measured the public's ability to distinguish between five factual statements and five opinion statements, found that a majority of Americans correctly identified at least three of the five statements in each set. But this result is only a little better than random guesses. Far fewer Americans got all five correct, and roughly a quarter got most or all wrong (Mitchell et al. 2018, p. 3).

(The survey questions and responses are in the appendix below. Readers are invited to test their own responses).

The test statements all had political significance. Not surprisingly, confirmation bias seemed to be at work.

Both Republicans and Democrats show a propensity to be influenced by which side of the aisle a statement appeals to most. For example, members of each political party were more likely to label both factual and opinion statements as factual when they appealed more to their political side (Mitchell et al. 2018, p. 4).

The Pew study drew a great deal of attention toward, and helped spawn renewed interest in, the ‘fact vs. opinion’ distinction. It has only become more influential in debate and discussion about current issues. A Google Scholar search, for example, returned some 175,000 references.

The first section of this paper reviews the most common criteria for drawing the distinction, which we find inadequate, and the case for abandoning it. As we explain in Section 2, however, it plays an important cultural and political role that cannot be dismissed out of hand; we will focus on its use in law and journalism in particular. In Section 3, we offer our own view, which we summarize as follows: There is a sound reason to distinguish between factual statements and opinions. The difference does not involve a single criterion. Instead, the conceptual structure of the terms ‘fact’ and ‘opinion’ is analogous to that of natural kinds—terms with multiple dimensions. The essential dimensions distinguishing factual statements and opinions are their respective methods of verification, specifically the complexity of the evidence and arguments required to justify either type of claim. Even so, we acknowledge that the distinction is not a sharp one; there are borderline cases. And while it does not play a fundamental role in epistemology, it does have a limited but important role in specific cultural domains and is worth teaching in logic and critical thinking courses.

1. Problems with the distinction

As noted above, the Pew study indicated that most participants were able to correctly identify three out of five statements as either fact or opinion from each set. It might be tempting to conclude that we are, in fact, reasonably good at making this distinction. But, while it is true that most people answered most questions correctly, Pew has pointed out that this success rate was only marginally better than random chance. A moment's reflection makes this point obvious. Suppose fifty-one percent of a logic class achieved a grade of 60 on their final exam. In other words, only just over half of the class passed—clearly a disappointing outcome. The lapses are doubtless due in part to the political relevance of the survey questions and the likelihood of confirmation bias based on political outlook.

Be that as it may, our experience as teachers is that students tend to better distinguish between fact and opinion on less controversial topics. When they get it wrong, discussion can often resolve the issue. Our conclusion is that people's ability to draw the distinction varies considerably by topic. But the picture darkens when we ask what criteria underlie the distinction. As John Corvino says,

This seems like it should be an easy question, but it actually tends to stump most people on the street. Mind you, they have no trouble in offering examples of either, or in categorising others' examples.... When asked to explain the principle of distinction between the two, however—the rule that tells us how to assign statements to one category or the other—they often get tongue-tied (2014, p. 58).

The same is true for those who offer criteria for the distinction—especially for those writing guidelines for teaching the distinction to K-12 students. A few examples will illustrate the confusions:

1. Thaneerananon et al.

Fact versus Opinion (F vs. O) Test: Fact can be proven to be true or false and backed up by evidence. An opinion is a statement of what someone believes or thinks (2016, p. 126).

2. Montgomery College 2022

Facts: Statements that can be verified. They can be proven true or false. Statements of fact are objective—they contain information but do not tell what the writer thinks or believes about the topic.

Opinions: Statements that express a writer's feelings, attitudes, or beliefs. They are neither true nor false. They are one person's view about a topic or issue.

3. Freeman 2022

In general, a fact is something that is valid and can be proven to be so. A fact, in other words, is something that can be proved to be right by the use of evidence. Factual claims are valid in all circumstances and for all people; facts are universal...

A personal belief is referred to as an opinion. It has something to do with how someone feels about something. Others may agree or disagree with a viewpoint, but they are unable to prove or disprove it. This is what makes anything an opinion. Unlike facts, opinions are neither true nor false. A belief, attitude, meaning, decision, or feeling may all be expressed through an opinion.

4. Wojcicki 2021

Use simple definitions to help kids—especially those in elementary school—differentiate between fact and opinion.

A fact is a statement that can be verified.

An opinion is an expression of belief about something.

There are some obvious problems with these and many other statements in this pedagogical genre. As a practical matter, students interpreting these heuristics literally may be led astray. For example, a student in one of our courses recently defended her (mostly incorrect) responses to the Pew survey questions by appealing to rules she learned in elementary school; for example, that any statement including numbers is factual. She remembered those rules well, and they were very similar to the pedagogical examples

we have cited above. When given a new set of statements and asked for her first reaction, however, her pre-reflective answers were mostly correct. This leads us to suspect that a rules-based approach does little to illuminate the discussion. Existing pedagogy also presents philosophical problems.

To begin with, the common opposition between fact and opinion is a category mistake. Facts are aspects of reality. They are what make statements true or false. Opinions are mental phenomena, beliefs “in” the mind. Facts are not in the mind; opinions don’t exist outside the mind. The proper “apples to apples” distinction is between factual statements and statements of opinion. Some of the pedagogical formulations nod in this direction (e.g., 2) but confuse the issue by describing opinions as beliefs. Both factual statements and statements of opinion, if made as assertions, express beliefs. That George W. Bush was President of the United States is a fact; in asserting that statement, one is expressing a belief.

A closely connected error is the view that a factual statement must be true (e.g., 3). But many statements can be identified as factual without knowing whether they are true. Take the statement “The city of Weslaco is in Starr County.” Unless you are familiar with the Rio Grande Valley in Texas, you won’t know whether that statement is true (it’s not), but you know it is a factual statement. In that vein, the Pew study mentioned above asked respondents whether a given statement is factual “regardless of whether it was accurate or inaccurate” (Mitchell et al. 2018).

The most serious problem, however, is the near-universal view that factual statements are either true or false, whereas opinions are neither. Opinions can’t be true or false? Why not?

Many opinions have to do with values—ethical, political, aesthetic, etc.—a realm in which the claim may have some plausibility. Philosophers differ on the status and truth conditions of these normative statements. It is not our purpose here to engage in that dispute. But many statements of opinion are not normative. Does God exist? Was abolishing slavery the main cause of the American Civil War? Does this patient have chronic fatigue syndrome? Any view on such questions would count as an opinion.

The error is compounded by claims that factual statements can be proven true or false, whereas opinions cannot be proven; they are merely expressions of belief, attitude, or feeling. If this means evidence and logical inference can't be used to back up opinions, that is clearly false. In public discussions, advocates present arguments in support of their views. In textbooks on logic and critical thinking, to bring the matter home to our concerns as teachers, many of the examples and exercises on argumentation have opinion statements as conclusions. To elaborate on the medical example, suppose your doctor suggests a diagnosis and treatment for your condition. If you seek a "second opinion" from another doctor, you still expect that it will be based on medical facts. If the two experts offer different diagnoses, you as a layman have to consider both as opinions. If they differ, they cannot both be true.

The problem is compounded further by the claim that facts are objective or that factual statements can be proven by objective evidence, whereas opinions are subjective. The Pew survey itself took this view in its explanation of its methodology (Mitchell et al. 2018 p. 40).

The objective/subjective distinction is often understood in a metaphysical or ontological sense, as a distinction between what is independent of minds and what is mind-dependent. In that sense, however, both types of statement and belief—factual or opinion—are subjective. They depend on speakers and believers. On the other hand, objective evidence, or facts about the world, can be used to support statements of either kind. In addition, there are facts about mind-dependent states such as tastes and feelings. That my chocoholic friend likes chocolate is a fact.

The objective/subjective distinction also has an epistemological sense, concerning our thought processes. When we say that someone is being objective, we mean that he or she is focused on reality, using logic to draw conclusions, trying to take into account all of the relevant evidence, and willing to change his or her mind if new evidence supports a different conclusion. By contrast, our thinking is subjective if it is governed by bias or prejudice, if we ignore relevant facts, if we cling to a belief in the face of evidence against it, if we make *ad hominem* arguments

against other people, etc. Here, too, it seems clear that both factual statements or opinions can be either objective or subjective.

In light of these inadequate criteria for drawing the distinction, some philosophers argue that it should be abandoned: there is no coherent basis for distinguishing factual statements from opinions (Corvino 2014; Weddle 1985). In logic, any well-formed proposition p is either true or false, regardless of whether we consider p a factual statement or an opinion. In epistemology, all statements are subject to analysis and evaluation of a) whether they are supported by evidence and b) whether they are true or false—again, with no fundamental difference between factual statements and opinions. We are sympathetic to this view. Beliefs can be classified in any number of ways for different purposes—by topic, by domain of inquiry, or by type of support among other dimensions. But if the fact/opinion distinction can't be drawn by clear criteria, how useful can it be?

Yet the fact remains that the distinction plays an important cultural and political role.

2. The cultural and political role of the distinction

The two fields in which the distinction is most deeply embedded are libel law and journalism.

Law: In American law, a libel is the publication of a false statement that injures the person referred to in the statement. Implicit in that formulation are the elements that a plaintiff must establish to show that they have been libeled and to seek monetary damages (Cohen 1988):

1. There must be a showing of injury, such as damage to one's reputation, loss of business, emotional harm, etc.
2. The defendant must have published the statement in some way, i.e., conveyed it to people other than the person defamed by the statement.
3. The statement must be a factual statement that is false.
4. The statement must have been made with negligence—the defendant knew or should have known that the statement was false.

As with other torts in civil law, each element has myriad qualifications and defenses. Courts often make difficult decisions about whether there was injury to the plaintiff or negligence by the defendant¹ and whether the statement was factual or opinion. For our purpose, point (3) is the important one. The expression of an *opinion* about someone is not libel, no matter how nasty, outlandish, or unfair it may be. Only factual statements can be libelous and only if they are false—true statements are immune to libel suits. For all the complexity of libel law, it is founded on the fact/opinion distinction.

Journalism: The distinction between news and opinion is essential to the goal of objectivity in journalism: the practice of reporting the facts without the inclusion or influence of the reporter's own opinions, values, interpretation, partisan cause, or financial interests. Journalistic objectivity means, for example, reporting on an election campaign without slanting coverage to promote one candidate or describing a controversy like climate change without taking sides. Promoting candidates, taking sides on issues—the whole realm of opinions, analysis, and evaluation—is the job of commentators and editorial writers. The reporter's job is to get the facts and tell them straight.

This conception of objectivity is distinctive to journalism. As mentioned above, we believe that objectivity in its general sense is an epistemological standard that applies not only to journalism but to science, law, and every other realm of inquiry—and applies to statements of opinion as well as statements of fact. Journalistic objectivity is the narrower standard and practice of keeping fact and opinion separate. Journalistic objectivity has been under attack for decades by media analysts and critics. In his book about the history of the objectivity standard in journalism, for example, David Mindich (1998) felt that he had to put the word in scare quotes throughout. Whether as a response to such critiques or from

¹ In a famous 1964 case, *New York Times v. Sullivan*, the Supreme Court held that politicians and other “public figures” must prove that a news organization acted with actual malice—either knowingly published a false statement or showed a reckless disregard for the truth—a more difficult standard than the negligence required for private persons.

other influences, media today have become less rigorous in separating factual reporting and opinion.

At the same time, however, recent events have elevated concern with facts. In 2017, President Trump's advisor Kellyanne Conway introduced the now-notorious phrase "alternative facts," helping launch a media practice of declaring statements by Trump as false, even in news reports. Previously, reporters would quote a statement by an official, and perhaps comments made in response, but leave it to editorialists to assess truth or falsity. On a broader front, many major media outlets now have fact-checkers to root out falsehoods and "misinformation." There are also a number of independent sites, such as PolitiFact, that are dedicated to fact-checking. Self-described "fact checkers" vary a good deal by competence and accuracy. Even the best have been criticized for inaccuracy, partisan bias, and selective choice of statements to check. But our goal here is not to evaluate fact-checkers. Our claim is that, despite critiques of the standard of objective reporting, the distinction itself remains a standard to which people appeal.

Thus, whatever the philosophical problems in defining criteria for distinguishing factual statements from opinions, the distinction is alive and well. It is widely used not only in law and journalism but in public discussion. It is taught—however badly—in critical thinking. And there's a fair level of agreement among people asked to classify statements as factual or opinion. It seems worthwhile to look for a more coherent analysis than the ones we have considered.

3. Fact and opinion as natural kinds

Most attempts to analyze the distinction look for a single feature or dimension to characterize the concepts of fact and opinion, by analogy with other single-criterion concepts. Married vs. single people differ on a single feature, regardless of all other similarities and differences. Height—tall vs. short—is a single dimension on which people (among other things) can be ranked. In logic, to bring the issue home, deductive arguments are either valid or invalid, a single either-or feature. Inductive arguments can be

ranked by a single dimension: the degree of support they provide conclusions. But there does not appear to be a single criterion that reliably distinguishes fact from opinion.

We suggest that ‘fact’ and ‘opinion’ are concepts of kinds, not individual properties. Kind terms, like ‘dog,’ name categories with multiple similarities and multiple differences from other kinds within a more general category like ‘animal.’ In the same way, fact and opinion are types of claims within the broader category of statements (and beliefs). Both types, we have argued, can be true or false; both can be supported by evidence. They are distinguished as kinds of claim by multiple similarities and differences. A short list would include:

1. Factual statements can be supported by evidence that is clear, well-established, and typically well-known. Opinions rely on more complex arguments and more levels of interpretation and are more dependent on a person’s particular context of knowledge.
2. The truth or falsity of factual statements can be established decisively; support for opinions is qualitatively less decisive.
3. There is a much higher degree of agreement on the facts than on matters of opinion.

As terms for kinds, ‘fact’ and ‘opinion’ also have characteristics of *natural-kind* terms. The paradigm cases of natural kinds are things in nature apart from us—biological species like dogs and cats or physical substances like gold and water. But the concept has been extended to psychology—e.g., cognitive vs. affective states—and we think it applies as well to the epistemological distinction between fact and opinion.

Philosophers have analyzed natural-kind terms in depth and detail for decades, largely in connection with scientific theories (e.g., Schwartz 1977). But some natural-kind terms play no role in science. ‘Mud’ is a kind term we use for avoiding messy, slippery patches on sidewalks and hiking trails, but it has no use in chemistry; ‘weed’ is a category every gardener knows, but it doesn’t name a biological species. In the same way, we argue that fact and

opinion are not concepts that play an important role in theoretical epistemology but do have a meaning and practical use, like ‘mud’ or ‘weed.’

The analogy with natural-kind terms can explain the observation that people are usually better at identifying instances of factual statements and opinions than at defining the categories or providing criteria for the difference. Children tend to learn natural-kind terms like ‘dog’ by particular examples: They notice the similarities between their pet dog Rover and other particulars like Sandy the Labrador next door; and they notice the differences between those particulars and contrast objects like cats. At first, the similarities and differences are holistic, without an awareness of the particular features that dogs have in common and that make them different from cats. With the concepts of the different types in mind, children go on to learn particular features. Dogs go “woof,” cats go “meow,” etc.

Even as adults, we can easily tell whether a pet is a dog or cat, whether the splotch on the sidewalk is mud, etc. But we would be hard pressed to offer an accurate and comprehensive criterion for any of these categories. That is because natural-kind terms are not defined by description. In other words, natural-kind terms are not characterized by an internal definition specifying an intension that determines the extension. Such terms designate kinds whose shared and differentiating properties include both surface-level features and deeper underlying ones. Such terms are open-ended to discovery, not stipulated in advance. The same is true, we think, of ‘fact’ and ‘opinion.’

In the first place, there is an open-ended range of sources for evidence supporting either kind of statement. Factual statements can be established by evidence of many kinds, including, among many others:

Direct observation—e.g., the desk in front of me is brown.

Science—e.g., the Earth revolves around the sun.

History—e.g., George Washington was the first president of the United States.

Current events—e.g., election results, legislation passed, movies released, celebrity deaths, etc.

Vetted statistics—e.g., stock prices, the unemployment rate, etc.

The same sources (with the possible exception of direct observation) can provide evidence for opinions. Factual and opinion statements differ not in the source of evidence, but in the degree of evidence, by the criteria above.

It is a theoretical task for epistemologists to assess what counts as evidence across these different areas, just as it is an advanced scientific task to characterize dogs as a species or to explain what makes mud a sticky, slippery substance. In the absence of such theoretical knowledge, we rely on a general sense of the kind in question and, at best, cite superficial features like the shape and behavior of dogs. In the case of fact and opinion, we surmise that #3 above—the much higher degree of agreement on the facts than on matters of opinion—plays a larger role than the more essential factors regarding the degree of evidence (#1 and #2).

In the second place, the evidence in these various domains is not fixed; it expands with the growth of knowledge and with events in the world. That's another way the concepts of fact and opinion are open-ended. It also means that the line between them can change. In a previous era, the claim that the Earth revolves around the sun was an opinion; now that statement counts as factual. When the COVID-19 virus first appeared, many of the initial claims about its symptoms, severity, and contagiousness were opinions; some have now been well-enough confirmed to count as facts.

Another feature that 'fact' and 'opinion' share with natural-kind terms is a graded spectrum of typicality, from paradigm, prototypical instances to atypical or borderline cases. Robins are a paradigm case of the concept 'bird,' penguins and ostriches are not. The same is true of factual statements and opinions. That the United States is in North America is a prototypical factual statement. The statement "European countries have better health outcomes from their health care spending than the U.S. does" is a borderline case. Similarly, a prototypical opinion is the claim "The weather is pleasant today," whereas the claim that global warming

will cause economic harm to agriculture is at the borderline between fact and opinion.

Finally, as we said above, we do not claim that the distinction plays a fundamental, universal role in epistemology. It is domain-specific. It does not seem applicable to theoretical science, for example, where there are better terms for evaluating claims—terms such as hypothesis, model, theory, law, etc. Predictions are another domain in which the distinction between factual and opinion statements has at best a limited role. Many predictions are, of course, opinions because factual knowledge about the relevant future event is not possible. In many cases, however, we have well-established probabilities supporting weather forecasts, traffic congestion, and mortality tables, among others. In these cases, it is pointless to assert an opinion about what will happen when we can make a factual statement about its likelihood.

4. Conclusion

We have argued, on the one hand, that the distinction between factual statements and opinions is difficult if not impossible to draw using a single differentiating feature. On the other hand, the distinction is embedded in law and journalism, and it plays an important role in our everyday lives as individuals and as participants in political, cultural, moral, and other domains. It is too important to be abandoned. We have made the case that the distinction can be retained if we understand the concepts of factual statements and opinions as being analogous to natural-kind terms.

That view, in turn, has possible implications for teaching the distinction. Developing these implications would take another paper, but we want at least to indicate the direction we see for the application of the “natural kind” analysis to pedagogy. We suggest that understanding the categories of factual statements and opinions follows the pattern we described for learning terms for natural kinds, though at a much higher level: from a holistic sense of the categories to a more nuanced understanding of the criteria—not a single criterion—distinguishing the categories. Instead of teaching single-feature qualities first then examining instances, start with the instances. They should ask students to explain why they classi-

fied a statement as factual or opinion and use their responses as a starting point for exploring the various criteria that are relevant—or not relevant—to making an educated judgment, focusing on methods of verification.

References

- Cohen, Jeremy. 1988. (July 2-5). *Testing some notions of the fact/opinion distinction in libel* [Conference presentation]. Annual Meeting of the Association for Education in Journalism and Mass Communication (71st), Portland, OR.
- Corvino, John. 2014. The fact/opinion distinction. *The Philosophers' Magazine* 65(2).
- Freeman, James. 2022. *Fact and opinion*. EdrawSoft. URL accessed 20 Oct. 2022: <<https://www.edrawsoft.com/fact-and-opinion.html>>.
- Hurley, Patrick and Lori Watson. 2016. *A concise introduction to logic*, 13th ed. Boston: Cengage Learning.
- Kelley, David and Debby Hutchins. 2020. *The art of reasoning*, 5th ed. New York: W. W. Norton.
- Mindich, David. 1998. *Just the facts: How “objectivity” came to define American journalism*. New York: New York University Press.
- Mitchell, Amy, Jeffrey Gottfried, Michael Barthel and Nami Sumida. 2018. *Distinguishing between factual and opinion statements in the news*. Pew Research Organization. URL accessed 10 March 2022: <<https://www.pewresearch.org/journalism/2018/06/18/distinguishing-between-factual-and-opinion-statements-in-the-news>>.
- Montgomery College. 2022. *Reading fact vs. opinion*. URL accessed 20 Oct 2022: <https://www.montgomerycollege.edu/_documents/academics/support/learning-centers/writing-reading-learning-center/rockville/student-resources-tech/fact-vs-opinion.pdf>.
- Moore, Brook Noel and Richard Parker. 2015. *Critical thinking*, 11th ed. New York: McGraw Hill.
- Schwartz, Stephen P. 1977. *Naming, necessity, and natural kinds*. Cornell, NY: Cornell University Press.

Thaneerananon, Taveep. 2016. Development of a test to evaluate students' analytical thinking based on fact versus opinion differentiation. *International Journal of Instruction* 9(2): 123-38.

Weddle, Perry. 1985. Fact from opinion. *Informal Logic* 7(1): 19-26.

Wojcicki, Esther. 2021. *Teaching fact vs. opinion: Tips, activities, and resources*. Houghton Mifflin Harcourt. URL accessed 20 Oct 2022: <<https://www.hmhco.com/blog/teaching-fact-versus-opinion>>.

Appendix

The Pew Study asked survey participants to say whether the following are statements of fact or opinion. The table shows the percentage who answered each way. The list gives all the factual statements first (1-5), then the opinions (6-10), but of course the survey itself randomized them.

	A factual statement (whether you think it is accurate or not)	An opinion statement (whether you agree with it or not)
1. Health care costs per person in the U.S. are the highest in the developed world.	76	23
2. President Barack Obama was born in the United States.	77	22
3. Immigrants who are in the U.S. illegally have some rights under the Constitution.	54	44
4. ISIS lost a significant portion of its territory in Iraq and Syria in 2017.	68	30
5. Spending on Social Security, Medicare, and Medicaid make	57	41

up the largest portion of the U.S. federal budget.		
6. Democracy is the greatest form of government.	29	69
7. Increasing the federal minimum wage to \$15 an hour is essential for the health of the U.S. economy.	26	73
8. Abortion should be legal in most cases.	18	80
9. Immigrants who are in the U.S. illegally are a very big problem for the country today.	31	68
10. Government is almost always wasteful and inefficient.	28	71