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Framed for Lying: Statistics as In/Artistic Proof
Ramowane, by kłamać: statystyki jako dowody „(nie-) artystyczne"

Abstract

A statistic can be a powerful rhetorical tool in political discourse, but it can also be quickly dismissed by a resistant audience. This article argues that the statistic's association with Aristotelian inartistic proof (in Greek: *pisteis atechnoi*, Lat. *probationes inartificiales*) can, counterintuitively, encourage resistant audiences to be dismissive, to think that statistics "lie." By drawing from the concept of framing in media studies, I explore how the language used around a calculation can better serve readers when it is more explicit about the statistic's creation from a social process—that it is invented rather than used in argument. If statistics rely on interpretation, rhetors should invite their audience to interpret rather than insist on an interpretation. I use examples from news articles covering immigration in the United States to explore a frame that does such insisting and a frame that invites.

Z jednej strony statystyki mogą być użyte jako skuteczne narzędzie retoryczne w dyskursie politycznym. Z drugiej – tzw. oporni odbiorcy mogą z łatwością je odrzucić jako nieprzekonywające. W artykule wskazuję na związek między traktowaniem statystyk jako arystotelesowskich dowodów „nieartystycznych" (gr. pisteis atechnoi, łac. probationes inartificiales) a postrzeganiem ich przez wspomniany typ odbiorców jako źródła kłamstwa. Korzystając z medioznawczej koncepcji ramowania, badam, kiedy język używany do opisu statystyk może efektywniej służyć odbiorcom. Twierdzę, że dzieje się tak wtedy, gdy odbiorca rozumie sposób tworzenia statystyk jako elementu społecznego procesu. Statystyki nie są dowodami same w sobie, ale raczej są wykorzystane przez retora, by swą argumentację wzmacniać. Jeśli istotą zrozumienia statystyk jest ich interpretacja, autorzy przekazów powinni zachęcać odbiorców do tego procesu myślowego, a nie narzucać własne interpretacje. W swoim wywodzie przywołuję przykłady artykułów prasowych wykorzystujących statystyki na temat imigracji w Stanach Zjednoczonych, by omówić dwa rodzaje ramowania: takiego, które ma utwierdzać w gotowych interpretacjach i takiego, które zaprasza czytelnika do własnej interpretacji.

Key words

License

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In the United States, political argument can feel hopeless, and in the context of, say, labor disputes or police brutality, collective action may seem more meaningful than further debate between entrenched positions. I will not be arguing here for best methods for political change. Instead, in this article, I want to explore how one rhetorical maneuver—the deployment of a statistic within an argument—might be treated more critically as a rhetorical art by isolating and examining the language in and around a statistic. Too often, in overtly political situations, statistics are treated as cudgels to bash an opponent over the head with. For instance, Brian Resnick (2016) writes that "in a typical canvassing conversation, a person knocks on the door and spews statistics and facts to convince you to vote for a ballot measure. Those interactions are at best instantly forgettable and at worst incredibly annoying." This can alienate indifferent or resistant audiences.

Statistics can risk a failure to capture an audience's attention imaginatively and the technical nature of their composition risks an audience's skepticism of how truthful the statistic is. However, statistics can be powerful tools. They can help undermine or confirm "common sense." They can help to reflect things on a larger scale than we otherwise might grasp, and since many issues (e.g., climate change, the economy) can be examined at such large scales, statistics can be used to ground the exigence of an issue or propose solutions. In the canvassing context from above, where resistant audiences are prevalent, I am interested in the risk of creating a "forgettable" or "annoying" experience that impedes persuasion. How do we harness the unique ability of statistics to describe scale in compact ways while not alienating an audience? In what follows, I explore this question in terms of writing and reading.

Statistics—when depicted as inartistic proof—can gain or, counterintuitively, lose credibility by their association with, but distance from, experts. The way in which statistics are framed—that is, how rhetors signal to their audience how to interpret information—can play an important role in how a statistic can influence readers. In the next section, I explore how a statistic can simultaneously be an artistic and inartistic proof in service of appeals to expertise. I will then use the

concept of framing from media studies to theorize how audiences are primed for interpretations of numerical information, and how this theorization complicates statistics as presented as artistic or inartistic proof. I make this explicit by examining cases of statistics in news articles about immigration to explore dynamic usages of statistical frames.

In/Artistic Statistics

Because appeals to expertise can be valuable for a rhetor, finding rhetorical moves that signal expertise becomes important. Statistics, when interpreted as inartistic proof, can do this. Theodore Porter (1995, ix) writes that quantification is a strategy of communication, a "technology of distance" that "minimizes the need for intimate knowledge and personal trust" (Porter 1995, ix). In rhetorical practice, a statistic promises to rectify human fallibility. While personal trust is (theoretically) unnecessary when something is quantified, a different trust is established, a sort of institutional trust in that there are mechanisms in place to produce knowledge that is delivered to us. As an object that can make vast information compact, a statistic can travel easily as a fragment of text; as a technology of distance, the way it can move and become accessible gives a statistic its quality of stability. This perception of trustworthiness and stability presents statistics as inartistic proof, as something used that exists prior to rhetoric.

Joanna Wolfe (2010) notes that this association of trust and numbers is apparent in how many rhetoric and composition textbooks treat statistics as inartistic rather than artistic proof. Wolfe, however, goes through a series of examples that display how quantitative rhetoric is reliant on artistic proof. Mathematically, two equal statements can have vastly different rhetorical effects. For instance, Wolfe observes how a ratio and a percentage can make two different sorts of pathetic appeals—if you heard that there is a 1 in 50 chance that you have a disease or that there is a 98% chance you do not have a disease, what would you prefer? In the case of the ratio, you likely know 50 people, and thus the concreteness of that awareness may make the disease feel closer in probability than a percentage that is so close to 100%, in all its glorious abstraction. Wolfe also details several other instances of the rhetorical character of statistics: definitions (e.g., what counts as "spending"), selection of what Perelman and Olbrects-Tyteca call "interpretative level" (i.e., foregrounding certain interpretations by categorization and arrangement of information on a spectrum from the narrowest context to the highest level of symbolic abstraction), and visual rhetoric.

Syntax and word choice also play a large role in the rhetorical flexibility of statistics. Itzhak Roeh and Saul Feldman (1984) examine headlines of a daily

newspaper and find that statistical headlines often played out little "melodramas" in which pathetic appeals were made syntactically. Roeh and Feldman (1984) note the tension in expectation for syntax to symmetrically resolve, and this tension can affect the meaning. For instance, the syntax of "600 Israelis visit Egypt, 60 Egyptians visit Israel" invites repetition of the number 600. However, the similarity of 60 to 600 against the syntactic repetition creates a sense of irony, helping to tell a story of uneven relations between Egyptians and Israelis.

Word choice can also do much to create different rhetorical effects in rather subtle ways. Jonathan Potter, Margaret Wetherell, and Andrew Chitty (1991), in their research on the production of a documentary on cancer research and its financial cost, write of the importance of non-numerical quantifiers like "small" or "rare". These moves create a "mutually constitutive" reflexive relationship between the non-numerical quantifier and the (implicit or explicit) numerical quantifier, ascribing meaning and sense to one another (Potter, Wetherell, and Chitty, 1991, 356). These words can also be conceived as rhetorically *more* precise because they assign an evaluation. Word choice can also be utilized in statistics in service of specific rhetorical devices. In her chapter on amplification, Jeanne Fahnestock (2011, 393) uses two statistics as an example of what she calls "topping"—topping occurs in the use of the phrases that modify the number (e.g., "more than") to heighten an already large number. Because statistics are often numbers that exist in language, syntax and word choice can do much to compose and re-compose statistics with different rhetorical effects.

This rhetoricity of numbers held against their reputation as "objective" likely contributes to the odd tension between truth and lying that many of us encounter with statistics. Wolfe (2010, 453) writes that "there is a paradox in that on one hand our culture tends to represent statistical evidence as a type of 'fact' and therefore immune to the arts of rhetoric, but on the other hand we are deeply aware and suspicious of the ability of statistics to be 'cooked,' 'massaged,' 'spun,' or otherwise manipulated." Perhaps it is the statistic that is rhetorical, and the data are pure? But even here there are problems. Lisa Gitelman (2013) edited a collection titled *Raw Data is an Oxymoron* for this very reason. Gitelman and Virginia Jackson (2013, 2-3) observe that "data produce and are produced by the operations of knowledge production"; as Lev Manovich (2001, 224) writes, "data does not just exist—it has to be generated." Humans construct and organize data for purposes. It does not come out of the void.

So if data are generated rather than preexistent and if statistics are invented as artistic proofs, are statistics ever inartistic? According to Aristotle, inartistic proofs "preexist" a rhetorical situation and he lists witnesses, testimony from torture, and contracts as examples of such preexisting material that can be used by

a rhetor; inartistic proofs are used while artistic proofs are invented (1356a). For witnesses, there are both ancient witnesses (e.g., poets, proverbs) and modern witnesses (e.g., a person at scene of an event in question) (Aristotle, 1375b-1376a). Of the examples noted, witnesses come closest to statistics since, like statistics, witnesses describe something, either an event or expert testimony about relevant subject matter. Oddly enough, the oft-repeated aphorism about statistics and lying (i.e., "there are three kinds of lies: lies, damned lies, and statistics") variously attributed to Mark Twain and Benjamin Disraeli is derivative of an earlier aphorism about expert witness testimony (e.g., "there are three kinds of liars: liars, damned liars, and expert witnesses"). Statistician Peter Lee refers to several iterations of this aphorism in the context of the courtroom in the nineteenth century. One notable example (Giffen, 1892, 209) acknowledges this shift:

> An old jest runs to the effect that there are three kinds of comparison among liars. There are liars, there are outrageous liars, and there are scientific experts. This has lately been adapted to throw dirt upon statistics. There are three degrees of comparisons, it is said, in lying. There are lies, there are outrageous lies, and there are statistics.

Statisticians are not liars, but statistics are lies. A subtle shift, but it shows that agency of the expert (i.e., the statistician) is diminished and the focus belongs now on the statistic, the "technology of distance." A statistic performs its inartistic nature, and this is artistic work.

Much as the expert is replaced by the statistic in the aphorism, a statistic *marks* the rhetor as expert as an ethical appeal. It helps contribute to the performance of expertise to (ideally) put trust in the expert. In *The Rhetoric of Expertise*, E. Johanna Hartelius (2011, 4-6) distinguishes between autonomous expertise and attributional expertise. Autonomous expertise is about what a person knows (e.g., if an Astrophysicist has knowledge about astrophysics, then they are an expert) and attributional expertise "exists entirely in the signs and symbols of a person's relationship to a given environment and audience…[where] one's performance is evaluated irrespective of so-called 'real knowledge'" (Hartelius, 2011, 4). Statistics seen as a valuable, expert-sanctioned mode of communication means that anyone who uses them may be attributed as an expert, regardless of their knowledge. A rhetoric of expertise requires performing like an expert (Hartelius, 2011, 9-11) and though a rhetor may invent a statistic with both accuracy and rhetorical deftness, the very *use* of a statistic can mark one's expertise, moving the argument forward—potentially without much lingering on what the number means beyond what the rhetor signposts for their audience.

If a statistic can attribute expertise, part of its value can be this attribution effect. However, too much reliance on this effect may, counterintuitively, degrade

the trust of a more resistant audience if they are suspicious of the rhetor or their position on a topic. The theoretical comfort, in a vacuum, of the statistic's "distance" from biased, human activity always risks a misuse of the statistic-as-inartistic-proof in a context like that of political argument—this potential for misuse can bring mistrust. In the next section, I explore how the concept of framing can help to theorize why such an attitude toward statistics in political argument might exist.

Framing and Statistics

Statistics can be accurate, inaccurate, persuasive, not persuasive, even sublime. But what I want to focus on is that a statistic is more than its mathematical meaning and it is more than its logical, ethical, and pathetic appeals immediately embedded within it: a statistic also relies on what happens around it, in how an audience is primed to interpret the statistic in order to move the argument forward—and, possibly, not really read the statistic at all but rather be comforted (or perturbed) by its existence. Framing can be a helpful concept for thinking about how statistics can be used as performative inartistic proof.

Framing is a broad concept used in various disciplines. Definitions of framing in communication range from broad to narrow, typically focused on mass media (Entman, Matthes, and Pellicano, 2009, 175). For instance, William A. Gamson and Andre Modigliani (1987) define framing as the "central organizing idea or story line that provides meaning to an unfolding strip of events," which leaves open space for various images, anecdotes, metaphors, etc. to help guide an audience toward making meaning of information. For a narrower definition, Robert N. Entman (1993) explains that frames select certain aspects of a perceived reality to help define problems, diagnose causes, make moral judgments, and/or suggest remedies. For example, Entman names a "cold war" frame for an article about a foreign civil war (**bold** corresponds to four criteria of this model): there is a **problem** of communism **caused** by communist rebels **who are** atheists aggressors that should be **remedied** by U.S. intervention.

While framing is often used in studies of mass communication usually by way of content analysis or through the experimental condition, it has also been used to think about rhetorical criticism. As Brian L. Ott and Eric Aoki (2002) note, framing has much in common with Burke's (1966) terministic screen, where certain terms direct audiences toward certain interpretations and away from others, but they ultimately found framing analysis more useful when examining press coverage (specifically: Matthew Shepard's homophobia-motivated murder in the U.S.). Jim A. Kuypers (2009, 186) writes that rhetorical critics can utilize framing as a method to "loo[k] for cues of how language choices made by communicators… push our thinking in particular directions."

Framing is especially useful for analyzing rhetoric of the press by comparative analysis (Kuypers, 2009, 198), which makes sense because press accounts often offer privileged knowledge to a broad audience, making matters of accessibility important. To frame helps to map out, quickly, why something is important and what the take-aways are. In other words, framing is a deliberate rhetorical strategy made by a rhetor to direct their audience toward an accessible, streamlined evaluation of a complex topic (e.g., the oligarch's greed devastates the working class, workers succeed by merit). This can be done at specific genre locations in a text (Dahl, 2015) or it might be additive throughout the text, cumulating by repetitious word choice, figurative language, or subtler rhetorical activity.

In terms of framing, statistics within news texts can function like microcosms of a news story: like news information, a public rhetor handling privileged or expert knowledge like that of a statistic must contend with issues of accessibility for a number's meaning. Thus, statistics are often accompanied by frames to help simplify complex information or direct an audience's interpretation of its meaning in the wider context of the article. It is notable that one of Entman's examples to demonstrate the power of framing is from Daniel Kahneman and Amos Tversky's (1984) study of decision making. Kahneman, Tversky, and other psychologists and economists have done a lot of work on framing and similar concepts where people are given similar information presented in different ways to measure their different reactions. In this study, Kahneman and Tversky asked two groups of people to make a decision on programs to combat a disease, supplying statistics for two programs (both programs framed differently in the respective groups)—one statistic offered a definite number and the other statistic for the other program offered a probability. In other words, the statistics across groups were mathematically equivalent but framed differently. One group was offered a policy option vignette framed in terms of lives saved and the other group was offered a version of this policy option vignette framed in terms of lives lost. When framed in terms of lives saved, people tended to choose the definite number. When framed in terms of lives lost, people tended to choose the probability.

Framing has a similarity to how we can think of statistics as artistic proof—mathematical operations, definitions, syntax, and word choice of what was counted are influential in persuasion. But statistical frames can also have nothing to do with the mathematical aspect of the statistic itself. In a study about crime, Thibodeau and Boroditsky (2011) found that two different metaphorical frames in sentences preceding the numerical elements (i.e., crime as committed by "beasts" and crime itself as a "virus") prefacing the same statistics (i.e., worded in the same exact way) produced two different reactions. The "beast" group reacted with solutions to crime that involved capturing, enforcing laws, or punishing (e.g., calling

in National Guard); the "virus" group reacted with solutions to crime that involved diagnosing, treating, or inoculating (e.g., improving education, getting to the "root cause"). In both cases, participants used the statistic to justify these policy solutions. Thus, the statistics did not really matter—all that mattered was that they were "there" to justify very different reactions based on what metaphor ultimately framed them.

In regard to statistics, framing can be useful to think about how readers are positioned in similar terms to Entman's criteria for frames: problem definition, causal agents, moral evaluations, and/or remedies. Thus, questions to ask when looking at how statistics are framed: how is a number associated with a specific problem? How is causality described in relation to the statistic? What moral evaluations appear in proximity to the number? How is the number used to help explain a remedy for the defined problem? While it is important to note that not all (or even any, in some cases) of these elements will be strongly present in all statistics because statistics are fragments rather than complete texts, the ways in which framing criteria are represented in frames can be crucial in aiding interpretation. A good practice of quantitative literacy and rhetorical awareness, then, is to pay attention to how a number is shaped and enmeshed by rhetoric that does the work of "selecting and highlighting" certain information to "promote a particular interpretation, evaluation, and/or solution" of or related to that number (Entman, 2004, p. 5).

In the next two sections, I look at two examples that focus on immigration. With the recent surge of nationalist politics—and the xenophobic and economic discourse that often accompany such a surge of nationalist politics—throughout the world, immigration has become a politically charged topic once again. Any one person who immigrated who is a hard-working, valued member of a community or any one person who immigrated who has committed a crime can become an anecdote in argumentation, and an effective one at that. However, because immigration is an issue of scale, statistics become valuable rhetorical assets. I look at two statistics within two articles: one from the U.S. political news site *Politico* and one from the U.S. data journalism site *FiveThirtyEight*. The former is framed in such a way that contributes to a possible perception of it being inartistic proof, while the latter uses framing that makes explicit that the statistic is invented.

Frames that Tell

The first article I examine is an article about the negative effects of immigration on workers by economist George J. Borjas, published in *Politico* in Fall of 2016, during of the U.S. presidential election campaign that ultimately elected Donald

Trump. The title, "Yes, Immigration Hurts American Workers," sends a message right away through the direct causal claim that immigration hurts American workers. Much of the opening of the article compares Donald Trump's and Hillary Clinton's positions on immigration during the 2016 presidential campaign, arguing that they are both simplistic—though implying Clinton's is less tenable.

The opening helps set up the idea that partisan politics obscures a truth in the middle of two extremes, appealing to a desire for a compromise in the face of the idea that immigration hurts the working classes through the admission of too many low-skilled workers. Throughout the article, Borjas makes claims about how immigration policies can benefit certain groups to the detriment of others, creating what I am calling a "winners and losers" frame for immigration in the article, which elicits a "common sense," objective, politically transcendent subject position for Borjas, especially in light of how he describes himself as an economist that has studied immigration for decades.

The statistic I wish to examine also carries forward the "winners and losers" frame and this framing begins toward the end of the paragraph about a Clinton campaign speech, a few lines before the sentence containing the calculation: "Clinton ignores the hard truth that not everyone benefits when immigrants arrive. For many Americans, the influx of immigrants hurts their prospects significantly." In the following paragraph, Borjas begins by conceding that this "might be hard for many Americans to process, but anyone who tells you that immigration doesn't have any negative effects doesn't understand how it really works." Here, Borjas appears to be assuming his audience might hold a commonplace notion that immigration is good for the country and then speaks from a position of an expert, in common but strong language (i.e., anyone who tells you…doesn't understand how it really works). Borjas is the protector of the ordinary person against the sophistry of anyone who might suggest immigration is a positive phenomenon. From here, there is a simple input/output abstraction, something like: "When the supply of workers goes up, the price that firms have to pay to hire workers goes down."

The movement in these sentences follows this trajectory: from sympathy about misunderstanding (i.e., it may seem at odds with American values, but immigration is bad), to expert-of-the-people vs. the elites and wrongheaded activists (i.e., they don't know what they're talking about), and then finally to a simple position easily understood (i.e., more supply, lower wage). This third step bridges toward the more technical statistic, helping the paragraph to, what Hartelius (2011) might call, fully perform expertise, as the people's expert: "Wage trends over the past half-century suggest that a 10 percent increase in the number of workers with a particular set of skills probably lowers the wage of that group by at least 3 percent." The hedging (e.g., suggest, probably) helps keep Borjas in a space of

objective expert, maintaining the language of expertise and science, but the framing that preceded this statistic has already carried forward an inference of this statistic: definitively, for the working class, when you have more people, then employers can hire you for less—thus, the readers have been primed to see these hedges as an effort at an overly-cautious interpretive move.

The next sentence continues the frame and loses this hedging, moving the reader toward more certainty: "Even after the economy has fully adjusted, those skill groups that received the most immigrants will still offer lower pay relative to those that received fewer immigrants." It isn't clear if this is supported by the study's data or if this is a common sense inference as the previous "supply up/wage down" statement from earlier, but in either case, this statement helps to amplify the statistic by comparison—here is a hypothetical situation that you might view as a best-case scenario, and even there, the common sense logic (i.e., more workers, lower wages) prevails. Despite hedges made close to the number, interpretations further from the number remain more certain and more committed to the idea that the statistic supports the notion that native workers are losers while immigrants are winners.

The "winners and losers" article-frame repeats in this statistic-frame. The **problem** is lower wages, which is **caused** by too many workers of one skill coming in, the **moral evaluation** is that this is a simple idea that, implicitly (though, fairly directly established earlier on and in the conclusion of the article), is being obscured by partisan politics and the greed of the elites, and the **remedy** is implied to be restricting immigration. Our interpretation is directed in a way that could render reading the statistic as entirely optional: here is [statistic], and it supports the fact that with more immigrants comes lower wages for the working class. Learning more about the research process that led to why trends have "suggest[ed]" that this increase in the number of workers "probably" lowered the wage of workers of that "group" could do more to invite the reader to interpret the statistic more collaboratively rather than having that interpretation completed for the reader *a priori*. Framed differently by revealing more of the story of this number's formation can allow the reader to participate more fully in its creation—in making its meaning.

Building Frames that Teach

A statistic, unexplored, can serve the background of an argument as one of several pieces of evidence notable only in their accumulation. In the previous section, I offered one example that could be prone to doubt by a resistant reader by its quick supply of an interpretation and treatment as an inartistic proof. Its creation remained hidden, its meaning issued from God, and it is something presented as

apart from language, used. In this section, I want to turn to a notion of composing statistics in public texts that is pedagogical, that makes available the possibility for readers to contribute to an interpretation that grants them more agency than a frame that **insists** on an interpretation—there is not a transmission of knowledge, but a participatory construction of knowledge through reading.

Interpretation is a highly important aspect of statistics—Robert P. Abelson (1995, xii) built an entire statistics textbook from the notion that interpretation, and thus rhetoric, is foundational to how inferences from statistics are made. Separating statistics from rhetoric and language is impossible. Ann E. Berthoff (1981, 42-43)—drawing from I.A. Richards, C.K. Ogden, and C.S. Peirce—holds that it is crucial for teachers and students to see language as an instrument rather than a tool, one that shows we are not "gods who have perfect knowledge," but, instead, "powerful creatures who can describe and define; argue and tell stories, encouraging, persuading, entertaining: *rhetoric* is what we have instead of *omniscience*." Berthoff sees reading and writing as concerned with making meaning, not finding a "message" already there; it is to allow for interpretations ready for consideration, ongoing contemplation, and dialogue.

Statistics—as units of language—can be written more for making meaning rather than sending a message if they are written in a way that allows for the reader to more readily contribute to an interpretation if they so choose. Such framing work can help create goodwill[1] between the rhetor and an indifferent or resistant audience because an opportunity is offered to dismiss (at least somewhat) potential concerns for efforts at deception by more clearly outlining a potentially opaque communicative act. In other words, this is not necessarily a technical "show your work" gesture that adheres to scientific principle, but a move built on persuasion built on goodwill, to show that you want the reader to sit at your desk and see what you see to help build a communion with an audience rather than further harden an adversarial relationship.

To better illustrate a pedagogic statistical writing, I selected an article from *FiveThirtyEight* by Kathryn Casteel and Michelle Cheng covering a study by the National Bureau of Economic Research on the economic contributions of refugees. The article opens with an exposition on the Trump administration's push to limit the admission of refugees into the U.S. on the grounds of national security. Casteel and Cheng then pivot from Trump to other refugee opponents who cite

1. Here I am thinking of Aristotle's concern with goodwill (*eunoia*) in the *Rhetoric* as grounded in an effort to appear friendly and interested in the audience. *Eunoia*, along with a display of *phronēsis* (practical wisdom) and a display of *aretē* (virtue) help establish credibility (*ethos*) in a speaker (1378a). For framing a statistic, goodwill can be shown when there is an attempt made to avoid the condescension that can accompany an insistence of an interpretation. One way to avoid this is to overtly show that the statistic is an artistic proof, that it is something created by social processes and that by showing how the statistic was made the auditor can more readily form an interpretation by their own cognition rather than relying on the rhetor's ready-made interpretation.

evidence that increases in refugee admittance harms the economy, primarily due to their supposed drain on social welfare benefits. While more subdued as a news report compared to the opinion piece by Borjas, this article is also framed but in terms of net economic benefits of refugees. Following Entman's framing criteria, this "winners and winners" frame makes clear that refugees are not a problem but an economic asset (**problem definition**) as a result of the tax revenue they generate over time (**cause**), which is a moral good due to the greater benefit of society (**moral evaluation**), leading to an inference that more or the same amount of refugees should be admitted into the U.S (**solution**).

I mark the frame of the statistic beginning at a direct quote from one of the authors of the study since it is a conclusion drawn from the statistic. Because of the dialogical nature of a quotation, a human face is immediately placed on the statistic that follows it: "'You can't just look at one side of this equation. [They're] getting benefits, but they're also generating income,' said William Evans, a Notre Dame economist and one of the paper's authors. 'They're living [here], so therefore they are paying taxes.'" Presumably, the journalists writing the piece are interviewing Evans and he is offering his interpretation; nevertheless, this creates a dialogic feeling in the reading, helping to imply an ongoing exchange. In the Borjas example, there is an absence of a statistic's authorship—it just "is."

After this move, the article progresses through a series of calculations—calculations that were all related to one another in a way to make sense of it all, to make meaning. Evans is named, along with his co-author, Daniel Fitzgerald, and we learn what data they use (American Community Survey) to identify people likely to be identified as refugees. From this step, "researchers pulled a sample of 18-to-45-year-olds who resettled in the U.S. over the past 25 years and examined how their employment and earnings changed over time." Specific characteristics of the people in the sample are spelled out here, followed by a chain of reasoning through the following numbers: "They found that the U.S. spends roughly $15,000 in relocation costs and $92,000 in social programs over a refugee's first 20 years in the country. However, they estimated that over the same time period, refugees pay nearly $130,000 in taxes — over $20,000 more than they receive in benefits." The space used to walk through the comparison by naming "relocation costs" and "social programs" against tax payments help to take the reader through the specific calculations the authors made when making their interpretations.

The next paragraph gets into further specifics. It opens: "The authors found that, when compared to rates among U.S.-born residents, unemployment was higher and earnings were lower among adult refugees during their first few years in the country, but these outcomes changed substantially over time." The social process of making the statistic is replicated in writing here: those doing the calculation

remain as agents (i.e., "the authors") that perform an action (i.e., "found that… when compared to"), leading to a conclusion drawn from the data (specifically: "these outcomes changed substantially over time"). For the remainder of the paragraph, the authors outline several outcomes measured against time in the country that support their interpretation: more likely to be employed than US-born (six years), economic outcomes improved and use of government assistance lessened (the longer they remained), not significantly more likely to receive welfare or food stamps than native-born residents with similar education and language skills (eight years). Reporting these numeric explorations all lead back to the original quote, voiced in dialogue, that refugees are "generating income" and therefore "paying taxes" at rates that suggest—at least from the reductive standpoint of economic inputs and outputs—refugees make America great.

In place of a dialogic process frame that communicates explorative research described above, an alternative approach in this article could have been something like what Borjas did: offer a frame of "winners and winners" in the abstract (e.g., "workers always add to the economy by paying taxes"), offer a number (e.g., "refugees generate $20,000 in tax revenue over their first 20 years"), and then move on. In other words, quickly insert a number to assertively affirm a position. Instead, in Casteel and Cheng's article, the subjects *doing* the research remain central in this statistic as the journalists reporting on the research take us through the choices they made, repeatedly offering relevant context for an interpretation of the initial figure. As the reader travels along this passage, they can partake in some of these figures to build an interpretation. I am not claiming that the statistic in Casteel and Cheng's article is "open-ended" and filled with a range of interpretations one could make. That would take providing an opportunity for an audience to dig into the data for themselves. Instead, it humbly offers a view into the human work that went into constructing knowledge that was used to make an evaluation of the world. Instead of explaining one's reasoning based on a statistic, a more inviting frame explains one's reasoning based on a statistic while also explaining the reasoning behind the statistic's creation.

Making the sorts of moves that outline how statistics are products of social processes (Best, [2001] 2012, 182), helps to invite the reader to see that a statistic is something less than an object in the world beyond refute (i.e., something like Aristotle's inartistic proof) and more like a text created by humans (i.e., something like Aristotle's artistic proof). Allowing a reader to get a glimpse of a researcher's chain of reasoning better allows a reader to interpret meaning rather than accept or resist a message. A statistic that acknowledges a reader's presence, in its own small way, may help arguments seem less like Truth or Lie, and more like, well, an argument about real people affected by real material circumstances.

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