

**FRAMES, CORPORA,
AND KNOWLEDGE
REPRESENTATION**

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Chapter 3

Framing and Blending in Persuasive Discourse

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While studying probabilistic reasoning, Tversky and Kahneman found that the terms in which decision problems were formulated had a fairly large impact on the way that people responded to those problems. For example, in one classic problem people were told that illegal import/export activity had resulted in an outbreak of a fatal disease that would result in 600 deaths if left untreated. They were then asked to choose between two treatments. In one version of the problem, people were asked to choose between Treatment A which had a .33 chance that 200 people would die, and Treatment B which had a .5 chance that 300 people would die. In the other version of the problem, Treatment A was described as having a .66 chance that 400 people would be saved, while Treatment B was described as having a .5 chance that 300 people would be saved. Tversky and Kahneman found that people were more likely to choose Treatment A when it was described as a .66 chance that 400 people would be saved, than when it was described as a .33 chance 200 people would die (Tversky and Kahneman 1981). According to the normative framework espoused by Tversky and Kahneman, this behavior is irrational, because decisions about the same objective situation are different as a function of the way they are

described.

More recently, Sanford and colleagues have also shown that people treat the same objective fact differently as a function of phrasing (Sanford, Fay, Stewart and Moxey 2002). They described meat as either 5% fat or 95% fat-free, and 25% fat or 75% fat-free, and in each case asked people whether or not the meat was healthy. People were equally likely to agree with the statement that beef that is 5% fat is healthy as they were to agree that beef that is 95% fat-free is healthy. However, more people agreed that 75% fat-free beef is healthy than agreed that beef containing 25% fat is healthy. The same piece of beef, then, would be more likely to be considered healthy if it were described as being 75% fat-free than as containing 25% fat (Sanford et al. 2002).

Further, Sanford and colleagues observed a similar phenomenon when they simply asked people to read sentences that either were or were not consistent with the expectations set up by the description (Sanford et al. 2002). Comparing reading times for the sentence "Beef that is 5% fat is healthy", to "Beef that is 5% fat is unhealthy", they found longer reading times for the latter. People also found the sentence "Beef that is 95% fat free is unhealthy" to be surprising, and spent longer reading it than the sentence that described it as being "healthy". More interestingly, while people spent longer reading sentences that described 75% fat free beef as "unhealthy" than "healthy", when beef was described as containing 25% fat, they spent a *similar* amount of time reading sentences that said it was "healthy" and "unhealthy". In sum, people were more likely to view beef as healthy when it was described as being 75% fat-free, than when it was described as containing 25% fat (Sanford et al. 2002).

Empirical findings described above are all examples of *framing effects*, or cases where apparently incidental aspects of a description affect people's judgments and decisions about those cases. The most natural explanation of framing effects is that they reflect the activation of different *frames*, or structured representations of associated contextual information (Fillmore 1982). Fillmore noted that understanding the meaning of many words requires an understanding of the concepts and conventions that surround their usage. For example, "weekend" presumes an understanding of the structure of the week. Moreover, a true appreciation of the meaning of "weekend" involves cultural

knowledge that many people in industrialized countries work Monday through Friday, but not on Saturday and Sunday (Fillmore 1968).

In cognitive linguistics, frame semantics is a research program in which a word's semantic properties are described with respect to the way that they highlight aspects of an associated frame, or structured set of background assumptions. For example, "buy" and "sell" both evoke what might be dubbed the Commercial Transaction frame (Fillmore 1968). But "buy" highlights the buyer and the goods, while "sell" highlights the seller and the money. Langacker argues that while "roe" and "caviar" refer to the same thing, their meanings differ because "roe" presumes a biological frame, while "caviar" presumes a culinary one (Langacker 1987). Conversely, Lakoff has shown how many variants on the meaning of "mother", (as in "my birth mother" versus "my adopted mother") can arise because their meaning presumes different frames or idealized cognitive models of parenthood (Lakoff 1987).

This tenet of cognitive linguistics thus suggests that background knowledge represented in frames figures prominently in the establishment of meaning, as language functions against this backdrop of conceptual structure. Moreover, framing is particularly important for understanding the sorts of statistics that psychologists often pose in decision-making research. This is because—at least to most people—numbers are not inherently meaningful. Rather, numbers become interpretable when people know the typical range of application for a statistic, and have some landmarks for integrating new information (Moxey and Sanford 2000). For example, if one is unfamiliar with temperatures described in degrees Fahrenheit, knowing that it is 32 degrees outside is not very informative. However, upon being told that water freezes at 32 degrees Fahrenheit, that information becomes much more helpful. In the context of the questions about the meat, if we assume that the "fat-free" frame is restricted to high-quality meat, the ambiguity in people's response to 75% fat-free beef looks far more reasonable.

Optimists about human rationality, McKenzie and Nelson 2003 addressed the classic question of whether the glass is half full or half empty. In popular culture, it's usually assumed that the way you describe a glass is a function of how much of an optimist you are. In contrast to the standard assumption that framing is an incidental aspect of problem description, these researchers

hypothesized that the frames activated by the two different descriptions actually led to differences in people's unstated assumptions about the context. In the case of a half glass of water, these researchers found that whether people described a cup as "half full" or "half empty" depended on whether it had recently had anything in it. Given a 4 ounce cup, and asked to pour out 2 ounces, most subjects subsequently described the cup as being "half empty"; but, given an empty cup, and asked to fill it to the 2 ounce mark, most people described it as "half full". Apparently, descriptors such as "full" versus "empty" often convey information about the prior state of the glass, and thus imply different reference points (McKenzie and Nelson 2003).

Presumably, some of the differences implied by different frames could affect decision making, perhaps even in a way that is normatively defensible. McKenzie and Nelson (2003:596) further investigated this issue by asking people questions like the following:

Imagine a disease that leads to many unpleasant symptoms and can even cause death. For the past 20 years, the same treatment has been used in patients with the disease. In terms of mortality, 100% of patients with this treatment die within 5 years; 0% survive. A new treatment has been tested, and it has several advantages and disadvantages. In terms of mortality, 50% of patients with the new treatment die within 5 years; 50% survive. Given that the usual treatment has been used for years what is the most natural way to phrase the mortality results of the new treatment?

They found that when the death rate went from 100% to 50%, people overwhelmingly chose the phrase "50% survive" to characterize the death rate. When the death rate went from 0% to 50%, people were much more likely to choose the phrase "50% die". This suggests that speakers use "survive" and "die" in different sorts of contexts. "Survive" is often used to cue an improvement in survival rate, while "die" is more likely to cue a decline in survival rate. In such a case, then, sensitivity to the frame involves sensitivity to factors that normatively ought to affect one's judgments and decisions.

Indeed, the standard interpretation of framing effects as reflecting the fundamental irrationality of humans rests on some outdated and faulty as-

sumptions about the way that language works. For example, one standard assumption is that language exists so that people can transmit information to one another. On this model, the linguistic string is seen as conveying information that has been encoded by a speaker and that is decoded by a listener. Listeners can always draw additional inferences, by considering information about the context. However, according to the traditional model, such inferences are both additional and optional.

In contrast to these traditional assumptions about language, cognitive linguists have argued for a very different account of how language works. On this account, language is for imposing construals or various ways of understanding objective information. On such a view, the linguistic string is not the foundation of communication, but rather the tip of the iceberg. It is said of icebergs, of course, that only one tenth of its volume is above water, with the remaining 90% being below the surface. The analogy is that language conveys only a small amount of information directly; rather, its main purpose is to cue the listener to build elaborate configurations of conceptual structure (Fauconnier 1997). Lee, for example, urges us to think of words as "tools that cause listeners to activate certain areas of their knowledge base, with different areas activated to different degrees in different contexts of use" (Lee 2002).

Framing effects are typically portrayed as irrational because they reflect connotative rather than denotative information about the problem. While not disputing the human capacity for irrational behavior, I suggest that classical framing effects do not address the question of rationality in a productive way. Rather, the practice of framing itself is deserving of study, as an example of how people deploy their cognitive resources in response to the dynamic nature of the social and cultural world.

In fact, examination of persuasive discourse reveals that framing effects are no secret to speakers, as argumentative discourse largely consists in speakers framing and reframing the issues that they are arguing about (Coulson 2001). Although presumably meta-cognitive awareness of framing differs from speaker to speaker, real world discourse suggests that people do not passively accept frames, but rather evoke them strategically to suit their argumentative goals (Coulson 2003). This is because, besides having different structural characteristics, different frames imply different social consequences

for the participants, entail different courses of action, and afford a way of changing a situation's experiential character. In disputes about the morality of abortion, for example, the framing of an unwanted pregnancy is contested precisely because different frames have substantially different moral implications, affective dictates, and physical and social consequences (Coulson 2001).

Speakers argue about framing precisely because frames are *arguable*. Just as the meaning of "weekend" depends on the applicability of a set of stereotypical assumptions about the work week, the meaning of "responsible" relies on a web of structured assumptions. Consequently, often what purport to be terminological wars are not disputes over the definition of terms, but rather disputes over the frames that those terms prompt speakers to construct. Because culturally shared frames are often idealized, and the mapping from frames to situations is often underdetermined, one important function of persuasive discourse is to delimit the cases where frames are allowed to apply.

Interestingly, many instances of argumentative discourse draw not on the human deductive reasoning capacity, but rather on a set of imaginative processes for information integration. These processes, known as conceptual blending, operate in the creative construction of meaning in analogy, metaphor, counterfactuals, concept combination, and even the comprehension of grammatical constructions (Fauconnier and Turner 2002). Blending processes depend centrally on projection mapping and dynamic simulation to develop emergent structure, and to promote novel conceptualizations, involving the generation of inferences, emotional reactions, and rhetorical force (Coulson and Oakley 2005).

For example, conceptual blending theory is particularly well-suited for the analysis of political cartoons which directly represent the contents of a blended space and invite the viewer to unpack it into its input frames (Coulson 2005). Coulson has described a cartoon by Blake Carlson that appeared in *The Arizona Republic* in November 2001—around the time of the American Thanksgiving holiday in which it is customary to have a turkey dinner. In the cartoon, American president George W. Bush stands at the head of a dinner table about to carve a turkey labeled "Afghanistan". Seated at the table are a number of men in turbans with name-cards that read the names of Afghani ethnic groups (e.g. Uzbeks, Tajiks, Pashtuns, Hazara). Carving knife in hand, Bush says

"Look, I'm doin' my best here, but there are only two of them. You can't ALL have a drumstick!"

The cartoon presents the viewer with a frame blend and invites her to unpack its input frames. The inputs in this case are Thanksgiving dinner and the Taliban overthrow in Afghanistan. Part of understanding this blend involves appreciating the mappings between Dad carving the turkey on Thanksgiving, Bush carving the turkey in the cartoon, and Bush dividing the control of Afghanistan. Children compete over turkey legs in the Thanksgiving input, the Afghanis compete over turkey legs in the cartoon, and (many more) Afghanis compete over control of Afghanistan in the Taliban overthrow input. By having a single Afghani metonymically represent each ethnic group (the Uzbeks, Tajiks, etc.), the cartoonist here employs what Fauconnier and Turner (2002) refer to as *compression to human scale*. In this way complex sociopolitical struggles over land rights are understood (and potentially misunderstood) by analogy to everyday experience with dinner table disputes.

Political cartoons and rhetorically motivated discourse prompt us to construct blended cognitive models and, in effective cases of rhetoric, desired inferences are analogically projected from blatantly unrealistic blended cognitive models to the real-world target domain. Indeed, frame-blending for rhetorical purposes is actually quite common, as highly fictive construals can be used in arguments with real-world consequences (Coulson and Oakley 2006, Coulson and Pascual 2006).

Traditional notions of rationality presume that decision problems can be posed such that background assumptions are finite and fixed so that the optimal outcome can be calculated. Given those assumptions, the traditional picture of language and rationality would be quite adequate. Unfortunately, our world is much more complicated, dynamic, and non-monotonic than that posited in traditional approaches. In real problems, the issue is often to determine what the relevant factors are, and the method is often to engage in discourse aimed at framing situations in multiple ways. If we accept that persuasive discourse is rational behavior, it may be that the imaginative processes of conceptual blending constitute a fundamental component of rationality.

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