

**Review of José Luis Bermúdez’s *Frame It Again: New Tools for Rational Decision-Making*. Cambridge: Cambridge University Press, 2020, x + 340 pp.**

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José Luis Bermúdez’s *Frame It Again* provides an important antidote to the story that we are fundamentally irrational by challenging one of its central tenets, the principle of *extensionality* (i.e., that “valuations [should not] depend upon how we describe different courses of action or their alternative possible outcomes” (67)). This principle implies that rational individuals should not be susceptible to so-called framing effects. However, by arguing that taking on different perspectives is a requirement of rationality, Bermúdez builds the case that framing is an essential ingredient of good decision-making. Different values are salient in different frames. Yet, these values can, for instance, be incommensurable. Thus, we *should* end up ranking the same outcome differently under different frames. Bermúdez’s provoking argument is laid out with impressive knowledge and provides entertaining and accessible introductions to rational choice theory, economics, and cognitive science.

He starts the book with several well-illustrated examples of framing effects. While these illustrations initially seem conceptually disconnected, Bermúdez argues that they can be unified by a minimal definition of frames as a “schemata of interpretation” (14), where a wide range of phenomena may count as such. With the concept itself clarified, Bermúdez highlights that experimental researchers from different disciplines have contributed to telling a story he calls the “litany of irrationality” (10), i.e., the view that “that human beings are fundamentally flawed reasoners, regularly contravening the basic principles of rationality” (8). For those who subscribe to this narrative, susceptibility to a framing effect is considered a hallmark of irrationality.

Consequently, Bermúdez highlights next why framing effects are considered irrational by those intoning the litany of irrationally. In a nutshell,

Bermúdez presents two reasons. The first is that the set-theoretic formulation of decision theory snuck the principle of extensionality into our thinking about rationality, as extensionality is also the most basic axiom of set theory, i.e., “there cannot be two different sets with the same members” (78). The second reason is that it is usually assumed that we need extensionality for the standard decision-theoretic axioms like transitivity to exert their normative force.

With the basics clarified, Bermúdez lays out the concepts that will serve his main argument. He argues that framing can serve the vital task of making a decision maker take another perspective. Yet, the exercise of framing can lead to quasi-cyclical preferences. You have quasi-cyclical preferences if you prefer A to B and B to C, even though you know that A and C are the same outcome yet differently framed. These preferences can nonetheless be rational if we are in what Bermúdez calls an *ultra-intensional* context where the extensionality principle does not apply.

Based on these foundations, Bermúdez argues for the key component of his theory of rationality: the *due diligence* requirement. One way of putting this requirement is that an agent is not just required to choose optimally with respect to an already well-defined decision problem. Instead, an agent is also required to be “appropriately sensitive to as many potential consequences of different courses of action available to them as possible” (121) when setting up a decision problem. For Bermúdez, preferences are grounded in valuations, and valuations, in turn, depend (at least partly) on our emotional responses. Framing can highlight different aspects of an outcome towards which it is rationally permissible to have different emotional responses. These various reactions, however, can result in quasi-cyclical preferences. Yet, as we are rationally required to explore different aspects of an outcome, we can end up in a situation where it is rational to have quasi-cyclical preferences. Bermúdez adds the constraint that having quasi-cyclical preferences should not force us to adopt contradictory beliefs. Yet, Bermúdez is convinced that such preferences can often facilitate good decision-making. The remaining part of the book is aimed at several illustrations of how this is possible.

One illustration of the power of framing is team reasoning, i.e., the idea that group identification allows agents to reach intuitively rational solutions, which conventional game theory would preclude. While Bermúdez thinks that work on team reasoning already does much to illustrate the power of framing by contrasting the ‘I’-frame with the ‘We’-frame, he argues that there are substantial shortcomings in the literature.

First, he holds that we lack an adequate explanation for why it is rational to switch from the 'I'-frame to the 'We'-frame. Second, Bermúdez argues that the literature focuses too much on pareto-optimality when considering which option should be preferred under the 'We'-frame. An outcome is pareto-optimal if it is impossible to make some individuals better off without making some other individuals worse off (Mas-Colell, Whinston, and Green 1995, 307). Bermúdez proposes that we can solve both problems via the concept of frame-neutral values. The rough idea is that there are reasons behind our preferences that apply to how we rank outcomes in the 'I'- *and* the 'We'-frame. For instance, one reason we prefer an outcome in which both we and our neighbor dig snow on our street could be that it seems unfair if we do all the digging alone. Yet, once we focus on the value of fairness, we may realize that it is better served by the 'We'-frame as team reasoning allows us to reach the solution under which the burden is shared, while the 'I'-frame precludes this outcome. As a result of having both the 'I'- *and* the 'We'-frame available, we may end up with quasi-cyclical preferences. Nevertheless, selecting between these preferences, the frame-neutral value of fairness allows us to choose the option only available under the 'We'-frame. Hence, frame-neutral values and (rationally permissible) quasi-cyclical preferences can explain how we can reason ourselves into the 'We'-frame. Moreover, Bermúdez thinks that sticking with our quasi-cyclical preferences (instead of completely dropping the 'I'-frame preference) allows us to reason ourselves back out of the 'We'-frame if the situation calls for it (e.g., if we would otherwise be exploited). Finally, frame-neutral values can help to rank multiple pareto-optimal solutions under the 'We'-frame and, therefore, allow us to overcome the second problem Bermúdez identified.

Another illustration concerns discursive deadlocks. Bermúdez attributes such deadlocks in public debates (e.g., gun control in the USA) to a clash of values associated with different frames. The claim is that certain issues are highly complex and cannot adequately be captured by merely one description (i.e., frame). On top of that, different framings will imply different actions. Multiple descriptions, however, are not necessarily inconsistent but rather complement each other to the complete picture. As overcoming these deadlocks requires us to reason across frames, Bermúdez proposes requirements of rationality that are sensitive to the importance of framing in good decision-making. One crucial distinction that he proposes is between factual and non-factual beliefs. Some beliefs should not change with frames (factual beliefs), and some connected to

value judgment may change with different frames (non-factual beliefs). “A factual proposition is one whose truth or falsity can be determined by standard techniques” (229), with a standard technique being context-dependent (233). Thus, non-factual beliefs may be contradictory across frames. Yet, according to Bermúdez, we are rationally required not to believe implicitly or explicitly any false factual propositions.

To explore how we can reason across frames to resolve value conflicts, Bermúdez connects the discussion about requirements of rationality with research in cognitive science. In this regard, he points out how cognitive mechanisms like reflection, reason construction, imaginative simulation, and others can figure into a productive discourse of highly complex issues. The argument here is that a reasoner who has well-developed cognitive capacities and follows processes of reasoning flawlessly might still fail to satisfy the coherence requirements laid out by orthodox requirements of rationality, i.e., they might develop quasi-cyclical preferences.

What we have outlined here is, of course, only a rough sketch of far more detailed arguments. Nevertheless, in the spirit of further engagement with the book’s topic, we wish to offer three critical remarks. The first remark concerns the chapters on game theory and team reasoning. While Bermúdez is highly careful in his outline of various research programs, we think his engagement with team reasoning provides an exception. For instance, as mentioned, Bermúdez criticizes Bacharach’s (2006) alleged focus on pareto-optimality as it is only sufficient in a subset of games (e.g., Hi-Lo) but will fail in others (e.g., Game of Chicken), where there are multiple pareto-optimal outcomes. However, the problem with Bermúdez’s critique is that, for Bacharach, pareto-optimality is only a minimal requirement on the team function. While it is already enough to identify a clear outcome in coordination games (i.e., games like Hi-Lo where agents merely benefit from coordination), we need additional assumptions to solve mixed-motive games (i.e., games like the Prisoner’s Dilemma, or the Game of Chicken where there is also some conflict of interests). In this regard, Bacharach (2006, 88) hypothesizes that often “principles of fairness such as those of Nash’s axiomatic bargaining theory will be embedded” in the team’s utility function. In light of this, one may wonder how precisely Bermúdez’s appeal to fairness as a frame-neutral value is meant to go beyond the existing literature.

Our second remark concerns the treatment of rationality. When Bermúdez talks about rationality, he is “talking about a process—the pro-

cess of reasoning” (14). He holds that certain standards govern this process, and rational thinkers should “aspire to abide by those laws and principles” (15). Therefore, we take it that the requirements Bermúdez proposes throughout the book are meant to explicate these standards of reasoning. Yet, we wonder whether all of the requirements he proposes can be understood this way. For instance, Bermúdez argues that rationality requires a model frame-sensitive reasoner not to implicitly or explicitly believe any false *factual* propositions. While having only true factual beliefs is certainly highly desirable, it appears to be an unreasonable standard if we construe it as a law that should govern reasoning processes. After all, also the most law-abiding reasoner who processes all their evidence correctly may end up with false *factual* beliefs if we only provide them with inaccurate information. We, therefore, think that Bermúdez could have spent more time delineating different notions of rationality.

Rationality may well be an umbrella-term encompassing distinct principles (in different contexts). For example, one could understand agents as rational if they use rules that are, in expectation, beneficial for them, e.g., heuristic in the ecological rationality tradition (Gigerenzer and Todd 1999). Alternatively, one may understand agents as being rational if their attitudes relate to the world in a certain way (e.g., only having correct factual beliefs) or if they respond correctly to their reasons (Kiesewetter 2017). Moreover, in line with traditional economics, one can look at how attitudes cohere with each other (Broome 2013). It would, therefore, be helpful if Bermúdez were more explicit concerning his stance on these various conceptions of rationality. Especially because rationality is a thick and politically charged term, his process perspective may otherwise fail to convince those who think about rationality differently.

This brings us to our third remark relating to the due diligence requirement. This requirement reminds us of well-known problems in decision theory, such as the multi-armed bandit problem. This problem is characterized by situations where the consequences of each choice are only partially known, and an agent needs to decide how much of their resources to allocate to get more information on the consequences of a potential choice. Researchers occupying themselves with this problem typically hold that there is a uniquely rational response to how much an agent should explore. We, thus, get something that sounds like a due diligence requirement for utility-maximizing agents. Yet, Bermúdez’s concept of rationality is process oriented and not one of utility maximization. Hence, we would like to see how Bermúdez would determine precisely

what due diligence requires of us in specific contexts. This would be especially interesting as his requirement partly defines rationality and is not implied by rationality, as researchers in the literature around multi-armed bandits assume. For example, you and I may disagree on what is implied by being appropriately sensitive to the possible consequences of flying to Spain, e.g., finding out your carbon footprint. Bermúdez's theory of rationality will not necessarily help us to settle this disagreement as the due diligence requirement is not derived from any other principle of rationality but defines part of what it means to be rational. Yet, it seems intuitive to expect disagreement concerning such issues, eventually leading to different numbers of frames considered and diverging decisions. Thus, if our theory of rationality cannot provide us with a notion of appropriateness, we need to reach beyond rationality to settle such conflicts. Our question then is for which standards we should reach.

These three remarks should not distract from the fact that Bermúdez has written a remarkable book. We highly recommend it to everyone seeking a fresh perspective on framing and rational decision-making. Even though we expect that Bermúdez's arguments will not convince everyone, due diligence requires any scholar of rational decision-making to engage with this work, which has the potential to spark an exciting research agenda on the power of changing perspectives.

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