

# TRUTH, BEAUTY, AND JUSTICE IN MODELS OF SOCIAL ACTION

Mark J. Zbaracki, Lee Watkiss, Cameron McAlpine,  
and Julian Barg

## ABSTRACT

*James G. March rejected relevance as a criterion for social science research, but he was concerned about the social implications of social science models. He argued that a focus on truth alone as a criterion for evaluating models meant that social scientists miss the implications of their models for beauty and justice. Here, we explore all three criteria to see what they bring to the practice of building social science models and how they interact in the models and in the world. We argue that the choices that social scientists make about these three criteria shape what they select to study in the models, what they see in the world, and what they imagine for the world. We also argue that how social scientists approach truth, beauty, and justice has implications for how they understand and engage the world.*

**Keywords:** Truth; beauty; justice; modeling; models; James G. March; social action

Do I dare  
Disturb the universe?  
In a minute there is time  
For decisions and revisions which a minute will reverse.  
– T. S. Eliot (1962), “The Love Song of J. Alfred Prufrock”

---

Carnegie goes to California: Advancing and Celebrating the Work of James G. March  
Research in the Sociology of Organizations, Volume 76, 159–177  
Copyright © 2021 by Emerald Publishing Limited  
All rights of reproduction in any form reserved  
ISSN: 0733-558X/doi:10.1108/S0733-558X20210000076007

Nothing was changed, all was revealed otherwise;  
 Not that horror was not, not that the killings did not continue,  
 Not that I thought there was to be no more despair,  
 But that as if transparent all disclosed  
 As otherness that was blessed, that was bliss.  
*I saw Paradise in the dust of the street.*  
 – Denise Levertov (1986), “City Psalm”

James G. March (2006, p. 83) said repeatedly to students: “I am not now, nor have I ever been, relevant”. He claimed that the concept of relevance was ambiguous, its pursuit myopic, and its meaning too complex to lend itself to effective scholarship (Augier & March, 2011). Instead, he sought to understand how organizations work. For March, modeling was essential to that inquiry. He saw models as a “systematic set of conjectures about real world observations” (Lave & March, 1975, p. 4). He had a wide-ranging, and sometimes unconventional, imagination for models in the social sciences: a scale model of a train (Lave & March, 1975); a poem celebrating what he called the “beautiful counter-intuitive marvels of stochastic processes,” written in tribute to a textbook on probability theory (March, 2013, p. 735); and a computer simulation (long before simulations were fashionable) presenting an unorthodox view of choice as an artifact of the temporal order of events (Cohen, March, & Olsen, 1972). His approach was playful, but the intent was a serious effort to test speculations against the realities of the world.

Yet March was concerned about the social implications of social science models. He argued that two models may be equally correct but suggest very different actions that have very different social and moral consequences. For example, the economics of self-interest and efficiency have become one of the dominant explanations for social action (Cohen, March, & Olsen, 2012), extending even to models of political institutions (March & Olsen, 1989). But some of the speculations behind these models may describe and even tacitly endorse behavior that we find unattractive. Consider, for instance, predictions about power in organizations. A considerable body of literature suggests that the traits that make leaders successful are often traits that we find unattractive in our leaders (Pfeffer, 2015). For example, research shows that subtle forms of flattery and opinion conformity are more likely to garner resources, support, and appointments to positions of power (Stern & Westphal, 2010). When we focus only on truth – how well a model predicts outcomes – then we miss how social science can corrupt our social worlds (March, 1972, p. 416).

In response, March (1972) argued that truth need not be the only criterion by which we evaluate models: “A speculation is good if it is true, beautiful, and just” (p. 413). By those standards, not all speculations that are true should be evaluated positively. This is not a typical view of modeling. Models in the social sciences are more often seen as “a ‘small-world’ representation of a more complex underlying reality” (Knudsen, Levinthal, & Puranam, 2019, p. 1; see also Levinthal, 2011). Models help us speculate about social structure and behavior and stretch

our imagination about the world. We value models for how they extend human agency through order, rationality, control, and predictability (Cohen et al., 2012). These are mostly problems of truth in a model. So what does it mean to add beauty and justice as standards for evaluating our models?

Here, we explore that question. We begin with March's simple observation that truth alone is not sufficient as a criterion for evaluating models. We consider all three dimensions of good speculations – truth, beauty, and justice – to explore what they might bring to our models. We then turn to the relationships between these three criteria, asking how justice meets truth, how beauty meets truth, and how justice meets beauty. Moving beyond the utility of a model for prediction and control of the world, we explore how truth, beauty, and justice can help us shape the speculations we make in our models. Attending to truth, beauty, and justice has implications for how we engage in modeling: the choices that we make about these three criteria shape what we select to study in our models, what we see in the world, and what we imagine for the world.

### THREE TRANSCENDENTALS

We begin by considering the standards for a model that are sometimes referred to as transcendentals: truth, beauty, and justice. All three are ideals by which we evaluate our social worlds, our models of those social worlds, and our actions within those social worlds. They help us test our understandings of our worlds, to improve our speculations about the world, and to evaluate the models we develop. Our models tend to focus on the truth because it appears to be falsifiable. This allows us to accept or reject a model. Our models put justice and beauty to the side because we see them as more subjective. Here, we consider the value and importance of considering beauty and justice as criteria. We begin by considering what each brings to the models and to modeling. We do not explore the full genealogy of each. Plenty of others have already engaged these questions far more deeply than we will. Our goal is direction rather than depth.

#### *Truth*

The truth value of a model is essential to the pursuit of intelligence (March, 2010). We typically define the value of a model in terms of its validity: the extent to which knowledge can be used for understanding, prediction, and control (March, 1991; Rerup & Zbaracki, 2021). A model disciplines our thinking by checking our speculations against the realities of the world. March argues that the truth of a model depends on “the extent to which it correctly predicts observable behavior” (March, 1972, p. 413) or whether a model makes “assumptions that can be verified or disproved” (Lave & March, 1975, p. 52). While it is tempting to focus on this binary outcome, the predictive validity of a model is a more robust indicator of truth value than just whether it is true or false.

The truth value – and even the binary outcome of true or false – makes comparisons to facts about the world as a central part of the construction and evaluation of the model. A model has limited value if its predictions are only internal to the model. A more effective model begins with facts about the social world, either in assumptions about the social world that inform the model or by describing and predicting the outcomes of social processes. Better models also make predictions in a variety of settings. Finally, better models make consonant predictions about the social world. A model is more useful if it explains a range of related outcomes beyond the focal predictions of the model.

The truth value of a model goes beyond predicting outcomes. A model helps us understand the dynamics of a social phenomenon. Model building demands a form of what Weick (1995) called “disciplined imagination.” An effective model will isolate and attend to important social mechanisms that shape patterns in human behaviors. Models provide “small-world” (Levinthal, 2011) representations of social mechanisms, so any given model can only capture some characteristics of the social world. The truth value of the model depends on whether the simplifications of the model get at core tensions or questions in the social world (Knudsen et al., 2019). The power of a model depends in part on the significance of its predictions. The structure of the model needs to map effectively onto important features of the social world. If the model captures the social world well, then those who use the model can have confidence in the claims the model makes about social processes.

The truth of a model also depends on its logical structure. The logic of a model disciplines our thinking around a social problem and helps us identify inaccurate or limited understandings. Formal mathematical models can be used to check our intuitions about a social mechanism (Gibbons, 1999) by testing the logic of our causal claims. Formal mathematical models can also be used to structure our thinking around complex causal mechanisms that would otherwise be too hard to sort through (Coleman, 1964). The merits of such disciplined thinking extend beyond formal mathematical models. If an alternative explanation predicts the same outcome, then we cannot be sure that our explanation has isolated the social mechanisms behind an outcome. Like all practices that discipline our thinking or action, the rigors of logic help us see aspects of behavior that we might otherwise miss.

Truth in a model also depends on the coherence of the model with other beliefs. This occurs both within and across models. The modeling process demands first that we develop a coherent set of beliefs that justifies the claims of the model. Without this internal coherence, the predictions of the model will not make sense. We also base our judgments of the truth of the model on how they compare to other claims, predictions, and models. Models do not exist in isolation. They need to be consonant with other claims about the world and with models others have built. Yet the methods, mechanisms, and outcomes of a new model need to bring some new understanding of the world.

The pursuit of truth is a social process. We do not discover truth alone. We do it in concert with the ideas of others. And while it is tempting to think of validity as the sole criterion for truth in a model, assessing truth can be more slippery than

the single criterion of validity would suggest. Models are only “speculations” and “guesses” about social reality (March, 1972). The complexities of the world and the limitations of our experience mean that our procedures for developing models “offer few guarantees of validity” (March, 2010, p. 62). The truth of a model is therefore also evaluated by considering the reliability of the learning – the extent to which the understanding from the model is public, stable, and shared (March, Sproull, & Tamuz, 1991; Rerup & Zbaracki, 2021). It is an important signal when a model’s findings are not shared. Either the model is wrong or the model presents a surprise – part of the beauty of a model – that asks us to reconsider our knowledge. In either event, the question is not simply whether the model is right or wrong. A model challenges our understanding of the world with the promise that the truth of our beliefs will be settled after prolonged inquiry.

### *Beauty*

According to March (1972, p. 413), “A speculation is beautiful to the extent to which its contemplation produces aesthetic pleasure.” Mathematicians and physicists frequently use beauty to evaluate their models, but it is not often invoked as a standard in social science. Yet, beauty was central to Plato’s philosophy and has been invoked over the centuries by Aristotle, Augustine, Aquinas, Hume, and Kant, among many others. Philosophers have not succeeded in finding attributes of beauty that inhere in an object itself, but they generally agree that beauty cannot be entirely subjective. If beauty is only in the eye of the beholder, then it loses its paramount value and it cannot be recognized across people or across societies. Beauty in art and in our daily activities awakens desire and draws us more deeply into learning about and exploring the world around us (Nehamas, 2007). Communities of scholars also share this joy of discovery – a shared experience that is important to understanding how beauty works in a model and in the act of modeling.

The form of anything that we label beautiful “needs to be related to felt forms of life” (Ramírez, 1996, p. 235). We cannot access these forms through language. The meaning resides in the form of whatever we find beautiful and how we experience it. That means that beauty is as much about what something does for us as it is about whatever we find beautiful: “Beauty quickens. It adrenalizes. It makes the heart beat faster. It makes life more vivid, animated, living, worth living” (Scarry, 1999, pp. 24–25). We can neither derive a universal rule for what causes that experience of beauty, nor can we prove to others why they should experience what we experience. Nevertheless, there are signal features of the beauty that matter to modeling.

Beauty brings an element of surprise. Artists frequently cannot explain where a truly creative act came from; they see themselves more as instruments taken over by a creative force (Collier, 1972). As the American painter Mark Rothko described it: “The picture must be for [the artist], as for anyone experiencing it later, a revelation, an unexpected and unprecedented resolution of an eternally familiar need” (quoted in Collier, 1972, p. 70). The creative act reveals something new that becomes available to all. For example, Gibbons

(1999, p. 156) describes how an exercise in formal modeling revealed that “the performance of formal organizational structures and institutions depends importantly on the informal relationships that these structures and institutions facilitate.” Gibbons (1999), having later learned that the finding was consistent with work in sociology, celebrates how a model could remove “scales from the eyes of three economists” (p. 156) and opens up further possibilities around fundamental questions of human behavior. These moments are the essence of beauty in modeling. As Lave and March (1975, p. 2) observe: “Speculation is the soul of the social sciences. We cherish attempts to discover possible interpretations of behavior.”

We cherish these attempts because they hold the hope of something more. “Beauty beckons” (Nehamas, 2000, p. 5). This is a classic theme in Plato’s philosophy: beauty awakens desire, which fuels a love for the object of desire, and in turn awakens a thirst for learning (Nehamas, 2007). Beauty is neither appearance nor pleasure alone. Rather, it is the promise that draws us in:

The judgment of beauty is not the result of a mysterious inference on the basis of features of a work which we already know. It is a guess, a suspicion, a dim awareness that there is more in the work that it would be valuable to learn. To find something beautiful is to believe that making it a larger part of our life is worthwhile, that our life will be better if we spend part of it with that work. (Nehamas, 2000, p. 5)

March (2013, p. 735) illustrates this promise in his brief encomium to William Feller’s (1950) text on probability theory:

On the surface, the book has nothing to do with organizations or management. Feller, I assume, would have shuddered at the thought. However, page after page of his book entrances the reader with beautiful counter-intuitive marvels of stochastic processes, many of which have applications to understanding organizations. The book offers numerous reminders that unusual phenomena that we seek to attribute to human agency or organization may well have been produced by random processes.

The surprise and promise of beauty are essential to creative work because they incite deliberation. The pleasures of beauty lie in what we imagine to be possible, but beauty is always beyond our understanding (Nehamas, 2007). Beauty begins with an unprecedented felt form of life (Ramírez, 1996) and takes us on a journey across time in search of a precedent. In this journey across time – from the present felt experience, back to the past, and then into the future – beauty has been perceived by philosophers and poets “to be bound up with truth” (Scarry, 1999, p. 31). The beauty lies not just in the model, but in the experience: the search opens up other opportunities, other worlds, where the imagination can range. Any time a scholar encounters a new method, a new insight, and feels inspired to follow it, beauty may be at work.

### *Justice*

Justice invites us to ask what kind of world we want. As a criterion, it asks us to consider the social and moral consequences of a model (March, 1972). If a just society gives each person what he or she deserves, then a focus on justice asks

us to consider what outcomes people deserve and on what terms they deserve those outcomes. Justice asks us to confront the terms of our convictions about the world we want to build, in three different ways (cf. March & Weil, 2005, pp. 8–9). (1) Is justice a technical problem of establishing a mutually satisfactory exchange of resources? (2) Is it a political problem of establishing whose preferences should prevail? (3) Or is it a moral question about what constitutes virtue and how we construct a good life? Questions about justice have engaged scholars such as Aristotle, Aquinas, Kant, Bentham, and Hayek. We do not claim to resolve those questions here. Our goal is more modest: we want to understand how questions of justice inform our models of the social world.

Models that focus on the first question and treat justice as a technical problem follow a utilitarian logic that maximizes happiness. A utilitarian logic promises to make moral choices scientific by weighing alternatives against fixed preferences according to a simple, consistent scale (Sandel, 2009). Simon's (1947) approach to administrative behavior applied utilitarianism to decision making in organizations. Simon assumed that the preferences were already set by the leadership of the organization, based on whatever ends they chose to pursue. Assuming fixed preferences allowed Simon to focus on the decision as the fundamental unit of analysis. It also made the decision a purely calculative problem of establishing the means that will achieve the best outcome given already established ends. Ethical questions could be kept out of the problem.

Simon offers a limited but powerful view of rationality. The cognitive limits become the constraint to good decisions and either an organization or some form of procedural rationality can then address those cognitive limits (Simon, 1978). The consequentialist logic assumes that managers

evaluate their alternatives in terms of expected consequences, implement strategies with expected outcomes that appear attractive, and seek to manage the actions of others by assuming they are similarly guided. (March, 2003, p. 205)

The logic simplifies choice to a problem of establishing the most efficient use of resources. But it also reduces different individual preferences to a single common standard and sidesteps differences – and hence conflict – between people.

Models that treat justice as a political problem ask how justly power and resources are allocated, given the need to maintain freedom and respect different individual preferences. Solutions from the standpoint of liberty argue that justice is best served if a society leaves people “free to choose” (Friedman & Friedman, 1980) and extreme forms of the argument for freedom treat any organization as a totalitarian system (e.g., Hayek, 1976). Models of justice as politics consider two broad problems (cf. March & Olsen, 1989). The first problem is one of resource distribution: the initial endowment of rights, power, resources, and decision authority can have a substantial effect on fairness and inequality. The second problem concerns aggregating preferences across actors: how to treat preference differences across actors, how to treat changes in preferences within actors, and how to handle socially unacceptable preferences.

Political solutions to these problems of justice are concerned with what structure of rules and institutions might allocate power and resources best given the divergent preferences. Cyert and March (1963, p. 30) address that issue at the organizational level: “People (i.e. individuals) have goals; collectivities of people do not.” When individuals express their different preferences they create a broad range of organizational problems, such as the strategic use of information, power and politics, lobbying and influence activities, and informal authority, among others. (See Gibbons, 2003, 2020 for a discussion of modeling efforts in organizational economics.) These tradeoffs between conflicting interests and collective agreement must be resolved through political dynamics (March, 1962). Similar problems arise when power and resources are distributed unequally among individuals in society. Problems emerge because individuals with greater endowments in bargaining power and knowledge have an unfair advantage. Political approaches seek to preserve the freedom and rights of individuals and incorporate differences in preferences in the model, but they do not adjudicate between better and worse preferences.

Models that focus on the third question and treat justice as a moral problem ask what it means to live a good life and build a good society. This approach focuses on the community and its shared destiny, not the individual. It looks to build institutions that can help shape preferences, feelings, and ideals that are built around a shared sense of wisdom (March & Weil, 2005, p. 9). This view of justice distinguishes between acquiring rational skills for the purpose of achieving desired ends – which is mere cleverness – and wisdom, which lies in acquiring the habits that lead to virtue (Sandel, 2009). The moral approach looks beyond the ideal distribution of power and resources given existing preferences and instead examines the moral worth of the preferences. The task of justice is therefore to identify activities that lead to moral excellence, which is seen as the true source of happiness (Swanson, 2011). Those activities are then promoted and cultivated as virtues through their regular practice in civic institutions. Rather than assuming that markets can best allocate resources, a moral approach to justice asks how we value certain basic social practices – military service, criminal punishment, immigration, teaching and learning, and raising children – and how our social institutions can support these practices (Sandel, 2009). The moral view of justice puts the infrastructure of civic life ahead of individual preferences.

Justice is hard work. It asks us to imagine what world we want to construct. Justice also poses increasingly challenging problems for models of social action (cf. March & Weil, 2005, p. 9). Technical approaches to justice resolve these problems by studying choice as an optimization problem within a system of stable and consistent preferences and existing resources. Political approaches to justice allow for diverging and changing preferences and ask how a system of rules, organizations, and institutions can best regulate the dynamics of conflict and contestation. And moral approaches to justice ask how we build a community that nurtures individual happiness through our collective preferences and action. These different visions of justice have very different implications for what we attend to in our models.



## RELATIONS BETWEEN TRUTH, BEAUTY, AND JUSTICE

We need to stop and think about what we are up against. In our positivist approaches to social science, we pursue models of order and rationality that will help us engage in prediction and control. Simon (1947) was quite clear about this goal. He built his model of rational choice by placing ethical considerations outside the process. Our models still shape the beauty and justice we see and experience in the world, however. Our “speculations are the myths by which we deal with other people; they are the speculations by which we deal with ourselves” (March, 1972, p. 414). We can place beauty and justice outside our models, but the choices we make, even if based on truth alone, will have implications for justice and beauty. We need to take those implications into account when we contemplate our models. Here, we do just that, beginning first with the relationship between justice and truth, then considering beauty and truth, and finally considering justice and beauty.

### *Justice Meets Truth*

Justice challenges our thinking about truth. We usually test our faith in a model by its utility for understanding, prediction, and control. Other things being equal, we want a model that better explains the world. But we can also evaluate a model's implications for justice:

Independent of its truth value, a model has justice value. Different models suggest different actions, and the attractiveness of the social and moral consequences of those actions do not depend entirely on the degree to which the models are correct. Nor is this problem solved in any significant way by producing a more correct model. (March, 1972, p. 414)

Consider, for example, speculations about how choice architecture can help people make better choices (Thaler & Sunstein, 2008). An effective choice architecture “tries to influence choices in a way that will make the choosers better off, *as judged by themselves*” (Thaler & Sunstein, 2008, p. 5, emphasis in the original). The truth value of this simple speculation draws on social science research demonstrating that people frequently make “decisions they would not have made if they had paid full attention and possessed complete information, unlimited cognitive abilities, and complete self-control” (Thaler & Sunstein, 2008, p. 5). Research in behavioral decision theory shows how heuristics and biases lead people to make choices with poorer outcomes than a rational model of choice would produce (Bazerman & Moore, 2012). A choice architecture can trade on those heuristics and biases by identifying default approaches to making choices. The choice architecture should present an individual with default choices that will lead to better outcomes. This is an optimization problem that can be tested.

The justice value of the model follows a principle which Thaler and Sunstein (2003, 2008) label “libertarian paternalism.” The principle bridges two different aspects of justice. The term “libertarian” indicates that the choice architecture addresses the political problem of justice by protecting freedom of choice. The model’s “liberty-preserving” choice architecture seeks to avoid burdening “those who want to exercise their freedom” (Thaler & Sunstein, 2008, p. 5). The language

“as judged by themselves” intentionally follows Milton Friedman’s belief that people should be “free to choose” so that the social welfare implications follow individual preferences (Friedman & Friedman, 1980). The term “paternalism” addresses a technical problem of justice. The choice architecture should lead people to choices that best serve their social welfare. Empirical evidence shows that choice architecture can improve social welfare. For example, a number of studies shows that automatic enrollment and similar forms of choice architecture in retirement savings plans substantially increase retirement savings for people who might intend to join a retirement plan but never get around to it (Thaler, 2015).

The implications for justice are not that simple, however. Choice architectures can also be designed to exploit individuals. Many companies, have discovered that the behavioral data that predicts best comes from choice architecture that nudges, shapes, and turns people toward outcomes that benefit the company (Zuboff, 2019, p. 8). Consider, for example, how the chief data scientist at a Silicon Valley education company designed a choice architecture that defines good and bad in terms of corporate profits but not individual freedom or social welfare:

The goal of everything we do is to change people’s actual behavior at scale. We want to figure out the construction of changing a person’s behavior, and then we want to change how lots of people are making their day-to-day decisions. When people use our app, we can capture their behaviors and identify good and bad [ones]. Then we develop “treatments” or “data pellets” that select good behaviors. We can test how actionable our cues are for them and how profitable certain behaviors are for us. (Zuboff, 2019, p. 296)

If our standards are truth value alone, we should have no quarrel with this use of models. These models, “in which automated machine processes not only know our behavior but also shape our behavior at scale” (Zuboff, 2019, p. 8), use the same insights that inform libertarian paternalism. Yet, one choice architecture seeks to improve social welfare while the other is “essentially nudging for evil” (Thaler, 2018, p. 413). The two choice architectures produce radically different outcomes, have very different moral force, and so have very different implications for social welfare (cf. March, 1972).

Such tradeoffs between truth and justice in models are common. For example, Pfeffer (2015) introduces a litany of sins – boasting, narcissism, dissembling, lying, distrust, and self-serving actions – that can help leaders advance their own careers at the expense of others. These behaviors may violate conventional wisdom about good leadership, but they are based on “systemic processes that produce leaders who often behave differently from what most people might like or expect” (Pfeffer, 2015, p. 3). The truth value of models that predict success from bad behavior does not mean that we need to drop our standards for justice. Rather, as Pfeffer (2010, 2015) reminds us, if we want to understand power we must drop our expectations that the world as it exists will reward justice. We may have to reconsider what we value and reward if we want justice.

### *Beauty Meets Truth*

Beauty seduces us. That is both the point and the problem. The promise of beauty leads us to discovery. For Homer, for Plato, for Aquinas, for Dante, for

philosophers, and for poets across the centuries, beauty “has been perceived to be bound up with the immortal” (Scarry, 1999, p. 30). But the enchantment of beauty can become its own end and lead us astray. We become too attached to our models despite their fleeting relationship with truth. Beauty must be allied with truth.

The truth value of a model emerges as individuals use observations about the world to build a model that will yield interesting implications (Lave & March, 1975, p. 4). Beauty’s role in that process is to guide us in imagining and pursuing what we cannot yet see. When we begin with what we can already see, we remain in the world as it is. Modeling in social science requires speculation about ideas, but speculation differs from reasoning in that the premises may be uncertain or the data may be incomplete (Weick, 1979). We need faith beyond the utility of an idea to sustain the inquiry. The act of speculation may begin with a beautiful idea or an intuition about the elegance of an idea that makes it worth pursuing – not for its utility, but for its beauty.

Here, beauty needs truth. It is easy to speculate, but it is harder to produce valid speculations. The work of speculating “has a scientific value in that from the flood of conjecture fruitful hypotheses may emerge” (Cooley, 1931, quoted in Weick, 1979, p. 41). We use empirical evidence, logic, and formal proof to check the truth of our models. The paradigmatic form of such formal proof is the logical positivism used by Simon (1976, p. 46) to establish the decision as the basic unit of analysis for a scientific approach to administration:

To determine whether a proposition is correct, it must be compared directly with experience – with the facts – or it must lead by logical reasoning to other propositions that can be compared with experience.

Much of modern finance emerged from this formal process as scholars built mathematical models of the pricing of financial instruments – for example, options pricing. These scientific models were certainly a new and promising endeavor – an unprecedented greeting from another world. The models also turned the world of finance on its head as they were then used to demonstrate that financial markets followed predictable scientific processes (MacKenzie, 2006).

Such scientific logic offers only a very limited view of truth, however. We use a model to stand in for – to represent – external reality. The truth value of a formal behavioral model depends on a set of abstract symbols and a formal syntax delineating the logical relations between those symbols. This mode of thinking produces its own form of beauty: good theory produced through logical proof, tight analysis, reasoned hypotheses, empirical support, and sound argument, all guided by reasoned speculations. There is simple elegance in the rationality of a well-developed model, proof, or empirical test. Yet, when we get seduced by the beauty of the formal model, our “modeling research risks speaking merely to a ‘cave’ of fellow modelers” (Knudsen et al., 2019). We fall in love with our model and it becomes the end. We lose sight of the world.

Here, truth needs beauty. Models, formal proof, logic, and empirical evidence have their value, but an effective model needs to do more than demonstrate abstract

relations. The symbols alone are meaningless. A model needs some interpretation, some understanding, to give its speculations meaning. The poet Czeslaw Milosz (1996), describes how science and technology can pollute the human imagination by stripping the world “of clear-cut outlines, of the up and the down, of good and evil.” The result, he argues, is a sort of grayness that abstract theory cannot relieve, but poetry can:

Since poetry deals with the singular, not the general, it cannot – if it is good poetry – look at things of this earth other than as colorful, variegated, and exciting, and so, it cannot reduce life, with all its pain, horror, suffering, and ecstasy, to a unified tonality of boredom or complaint. (Milosz, 1996, p. xvi)

Beauty takes place in the particular, so we need the particular to give the model meaning.

That beauty may not always be welcome, however. A commitment to beauty can be subversive (March, 2013). To truly embrace beauty we need to counter our tendency to see what we want to see and look at reality as it is (Adler, 2011). An encounter with beauty therefore requires that we overcome one of two forms of error in our thinking (Scarry, 1999). Either we need to recognize that what we once saw as beautiful no longer merits being evaluated as beautiful or we need to recognize beauty where we missed it before. Overcoming either error is hard. To overcome the first form of error we must be willing to withdraw our belief in an idea even as that idea – and those committed to it – remains. If our elegant model is wrong, we must accept that it is keeping us from what is true. To overcome the second form of error we must acknowledge that our vision was more limited than we had believed. Only then can we see the beauty in an idea that we had rejected. And, if we want to persuade others, we need them to see their errors as well.

Here, our models need not just truth, but verisimilitude (Bruner, 1986). Rhetorical devices – stories, metaphors, and similes – can help us see beauty in a model that we otherwise would miss (Weick, 1979). For example, when economists could not see the beauty of behavioral models in economics, Thaler wrote a series of columns about what he called anomalies – stories of behavior that did not line up with the empirical predictions of economics – later published as *The Winner’s Curse* (Thaler, 1991). The simile of the garbage can (playfully) gives the reader a vivid image of how ambiguity is experienced amidst the temporal order as problems, solutions, and actors arrive in a particular choice moment (Cohen et al., 2012). Similarly, as March (2006, p. 86) explains, the label “the hot stove effect”

is stolen from some of Mark Twain’s wisdom. Twain said that if a cat ever jumps on a hot stove, he will never jump on a hot stove again. And that’s good. But he will also never jump on a cold stove again – and that may not be good.

The label captures the truth we might encounter in a model of early experience and learning sampling problem (Denrell & March, 2001). The beauty of the image builds a bridge between the elegance of the model and the reality of the world it describes.

*Justice Meets Beauty*

Justice and beauty are ideals that we pursue rather than achieve. In pursuing those ideals, “we accept responsibility for social myths by which we live” (March, 1972, p. 414). To pursue justice and beauty we must imagine the world as it might be. We must also forgo some truth to achieve justice and beauty (March, 1972, p. 414). Simple correspondence to facts is insufficient because the model may run counter to existing facts. Our standards for beauty and for justice determine which aspects of reality we attend to and which we ignore.

Consider speculations about beauty and justice in the leadership of Steve Jobs, whose reputation as a transformational leader, according to some, “is the Silicon Valley creation myth writ large” (Isaacson, 2011, p. 565). Jobs was very clear that for him, that myth followed a model based on the beauty of the products produced:

My passion has been to build an enduring company where people were motivated to make great products. Everything else was secondary. Sure, it was great to make a profit, because that was what allowed you to make great products. But the products, not the profits, were the motivation. (Isaacson, 2011, p. 567)

By that standard, his results were remarkable: “astonishing products marked by beguiling user experiences” (Isaacson, 2011, p. 564) that transformed multiple industries over the course of 30 years. In focusing on beauty, however, Jobs ignored justice. One frequently mentioned facet of Jobs’s management style was his “reality distortion field.” According to Andy Hertzfeld, one of original members of the Apple Macintosh team, “The reality distortion field was a confounding mélange of a charismatic rhetorical style, indomitable will, and eagerness to bend any fact to fit the purpose at hand” (Isaacson, 2011, p. 118). The result was some very unattractive behavior: “Dozens of the colleagues whom Jobs most abused ended their litany of horror stories by saying that he got them to do things they never dreamed possible” (Isaacson, 2011, p. 565). Taking Jobs as a model for the creation myth raises questions for justice. As Andy Hertzfeld said very simply: “The one question I’d truly love Steve to answer is, ‘Why are you sometimes so mean?’” (Isaacson, 2011, pp. 564–565).

Consider, in contrast, how justice follows from beauty in the model of non-violent protest followed by Martin Luther King. In his “Letter from Birmingham Jail,” King (1963) responded to eight clergymen who had called his “activities ‘unwise and untimely’” (p. 767) because the protests were inciting hatred and violence. The clergy wanted the protesters to obey principles of law and order. In his response, King (1963) appealed “to higher levels of justice” (p. 772):

One who breaks an unjust law must do so openly, lovingly, and with a willingness to accept the penalty. I submit that an individual who breaks a law that conscience tells him is unjust and who willingly accepts the penalty of imprisonment in order to arouse the conscience of the community over its injustice is in reality expressing the highest respect for the law. (p. 769)

King’s standard of justice focused not on the outcomes of the protests, but instead on their intrinsic moral worth.

To justify his claim that his model of non-violent protest followed a higher standard of justice, King's (1963, p. 773) letter repeatedly invokes beauty:

Let us all hope that the dark clouds of racial prejudice will soon pass away and the deep fog of misunderstanding will be lifted from our fear-drenched communities and in some not too distant tomorrow the radiant stars of love and brotherhood will shine over our great nation with all their scintillating beauty.

In his rhetoric, King (1963, p. 768) also acknowledges the surprise – shock – that nonviolent protest might produce, but then turns to the past and to the future to imagine the beauty in pursuing justice:

Nonviolent direct action seeks to foster such a tension that a community which has constantly refused to negotiate is forced to confront the issue. It seeks so to dramatize the issue that it can no longer be ignored. My citing the creation of tension as part of the work of the nonviolent resister may sound rather shocking. But I readily acknowledge that I am not afraid of the word "tension." I have earnestly opposed violent tension, but there is a type of constructive, nonviolent tension which is necessary for growth. Just as Socrates felt that it was necessary to create a tension in the mind so that individuals could shake off the bondage of myths and half-truths and rise to the realm of creative analysis and objective appraisal, so must we see the need for nonviolent gadflies to create the kind of tension in society that will help men rise from the dark depths of prejudice and racism to the majestic heights of understanding and brotherhood.

Throughout the letter, King repeatedly ranges across time to draw on a litany of role models: the biblical Apostle Paul, Augustine, Aquinas, the early Christians, Hungarian freedom fighters, Martin Luther, John Bunyan, Abraham Lincoln, Thomas Jefferson, and contemporary philosophers such as Martin Buber and Paul Tillich. King extends that litany across space to include contemporaries who engaged in the fight for justice: Ralph McGill, Lillian Smith, Harry Golden, and James McBride Dabbs.

In his public response to the eight clergymen, King uses beauty to call them to embrace a superior form of justice. He reminds them that others have already responded to such a call: "some noble souls form the ranks of organized religion have broken loose from the paralyzing chains of conformity and joined us as active partners in the struggle for freedom." And he reminds them of the promise of beauty that followed their response: "They have carved a tunnel of hope through the dark mountain of disappointment" (King, 1963, pp. 772–773). King is unwilling to forgo either beauty or justice, but his model of justice is not built on outcomes. Instead he finds beauty and justice in the actions themselves, regardless of outcome.

Consider finally how people choose between beauty and justice as they navigate three common myths: the ideal worker, the perfect parent, and the ultimate body (Beckman & Mazmanian, 2020). Beckman and Mazmanian (2020, p. 201) observed the people in their study constantly evaluated their actions against "a broader idea of how 'good' colleagues, parents, and bodies should act". The people in their study found the myths untenable because the ideals are impossible to meet. The outcomes are measured by individual displays of success that meet the standards of the myths. But those outcomes hide the actions of many others – most often women or minorities – who do essential work that is "neither visible nor valued" (Beckman & Mazmanian, 2020, p. 127). The result is that the

distribution of rewards is unjust: it goes to those who display outcomes that meet the ideals even though those achievements depend on work that is done collectively. The models promote idealized outcomes for their beauty, but because those models do not accurately reflect all the work required to produce those outcomes, we miss the implications for justice.

Our models are *not* neutral. How we define beauty both depends on and determines how we see justice. Conversely, how we define justice depends on and determines how we see beauty. These choices are more often implicit, but they are present. For example, when we build a model or myth around the beauty of the outcomes produced by an executive like Steve Jobs, what aspects of beauty and justice might we forego? Conversely, when we hold our actions to the standards of beauty and justice advocated by someone like Martin Luther King, how do we deal with the outcomes that fall short of those standards? Or, perhaps closer to home, how do we choose the standards of beauty for our decisions around work and family, and what are the implications for justice that we create for those closest to us?

## THE UTILITY OF A STYLE AND SENSIBILITY

Great enthusiasms, commitments, and actions are tied not to hopes for great outcomes but to a willingness to embrace the arbitrary and unconditional claims of a proper life. (March, 2003, p. 206)

In his book *Complex Organizations*, Charles Perrow (1986, p. 177) questions “the easy faith” of scholars who hope that social science models can be used by institutional leaders to design organizations that serve the good of society. Perrow shares their concern for justice, but he notes that the scholars committed to making organizations relevant to social concerns are the “least likely to recognize the devil in his consummate disguises” and so miss the way that leaders can just as easily manipulate organizations to serve unjust ends. In contrast, Perrow observes that that scholars like James March – who Perrow counts among those scholars who “understand the devil best” (Perrow, 1986, p. 177) – are more focused on patient inquiry than on making organizations more responsive to social problems.

In his analysis, Perrow raises the problem of relevance that we introduced at the outset. His analysis breaks the problem of relevance into two questions. First, how do we attend to the truth value of our models? Do we use models to engage in better prediction and control? Or do we build models for understanding? Second, how do we attend to beauty and justice? To what extent should we consider whether our models produce attractive behaviors that contribute to the good of society? Perrow’s analysis strikes a cautionary note for our response to these two questions: the devil that we think we know may not be the devil we must confront. If we do not consider problems of truth, beauty, and justice in our scholarship, we can be deceived. The result is some very unattractive behavior. To understand the devil in all his consummate disguises, we need to focus first on knowledge for understanding.

March's distinctive solution to this problem emerged when he brought the Carnegie School tradition west, first to the University of California, Irvine and then to Stanford. He continued to follow the Carnegie School tradition of scholarly work of inquiry into the underlying processes in a social system (March, 2006, p. 86). But his approach to modeling also incorporated two competing trends in social science that emerged in the late 1960s and early 1970s. One trend was the emergence of social construction and critical theory, which sought to broaden the range of explanations for social behavior. The second trend was the somewhat paradoxical simultaneous rise of economic theories of self-interest (Cohen et al., 2012, p. 20), which offer only a very limited view of justice as the dominant justification for social action. March's response was to maintain the Carnegie School tradition of positivist social science for understanding, but to add beauty and justice to show how speculations in social science also shape the world. The three somewhat unconventional examples of models that we introduced at the outset – the toy train, the poem, and the garbage can simulation – each demonstrate how this augmented Carnegie School of modeling incorporate beauty and justice into our understandings of social dynamics.

Models shape what aspects of social reality we select and attend to. A model train “has only some of the characteristics of reality,” there may be “many other possible models of a train, each representing some but not all of the train's attributes” (Lave & March, 1975, p. 3). Our models necessarily select the aspects of the social world we consider. But models are more than formal representations; as standards for beauty and justice they serve as exemplars to be imitated. Steve Jobs and Martin Luther King serve as models, as do the various characters March explored in his course on leadership (March & Weil, 2005): Othello, Iago, Emilia, and Desdemona in Shakespeare's *Othello*; the Saint Joan of George Bernard Shaw's play; Andrei Bolkonski, Pierre Bezukhov, and Natasha Rostova in Tolstoy's *War and Peace*; and, of course, Don Quixote.

Models also demand a precision that is essential to beauty. Lave and March (1975, pp. 69–73) use a poem to show how chance shapes outcomes in surprising ways—but also how “precision and surprise go hand in hand” (p. 73) in deriving a model. Real poetry, real artistry, needs to be able to look at the reality of the world (Adler, 2011). A poem, like any form of model, with its demands of careful, disciplined observation, asks us to look more carefully. We may find that what seems to be obvious often turns out to be neither obvious nor true (Lave & March, 1975). If we set our hearts on justice alone, social science models may remind us that power frequently lies with people who will not use it to build a more just world (Pfeffer, 2010). Conversely, if we see ideas as art, we may find beauty where others miss it and so open our imagination.

Finally, models help in imagining the world where prediction and control may not work as we would ordinarily expect. The garbage can model examines how temporal ordering in the arrival of problems, solutions, actors, and choice situations shapes the experience of choice in unexpected ways (Cohen et al., 1972). The model strips the individual of agency in the moment of choice and asks us to imagine how social dynamics outside the choice situation drive outcomes. The model may not resemble standard models of choice, but it encourages an



imagination about what it means to navigate situations in which standard models of prediction and control do not hold.

There is a consistent style and sensibility in these unconventional images of models. They all pursue truth, but they repeatedly push aside prediction and control – and hence relevance – and instead favor understanding in a model. March reminds us that if we embrace the arbitrary claims of a proper scholarly life, we can encounter great beauty. For arbitrary does not mean aimless. Rather, it is the purposiveness without purpose that is essential to beauty. To develop good models, beautiful speculations, we need to be able to imagine beauty for its own sake:

The need for an arbitrary creation of beauty is exemplified by Quixote's love of Dulcinea, whose attributes are manufactured by his imagination. He invites others to picture her as he pictures her, not because his portrayal is objectively accurate but because he (and they) choose to believe her so. When the traders from Toledo state that they would willingly extol the merits of Dulcinea if Don Quixote were to show her to them, he replies: "what's the virtue in confessing to the truth of something as manifest as a beauty you can see .... The essential things is that without seeing her, you must believe, confess, affirm, swear, and defend it [the truth that Dulcinea is without equal]." (quoted in March & Weil, 2005, pp. 82–83)

That is a more humble view of social action than the pursuit of great outcomes. But it is also an optimistic view of truth, beauty, and justice in the world: trusting that people with well-developed speculations can work out their problems.

## REFERENCES

- Adler, N. J. (2011). Leading beautifully: The creative economy and beyond. *Journal of Management Inquiry*, 20, 208–221.
- Augier, M., & March, J. G. (2011). *The roots, rituals, and rhetorics of change: North American business schools after the Second World War*. Stanford, CA: Stanford University Press.
- Bazerman, M. H., & Moore, D. A. (2012). *Judgment in managerial decision making*. Hoboken, NJ: John Wiley & Sons, Inc.
- Beckman, C. M., & Mazmanian, M. (2020). *Dreams of the overworked: Living, working, and parenting in the digital age*. Stanford, CA: Stanford University Press.
- Bruner, J. S. (1986). *Actual minds, possible worlds*. Cambridge, MA: Harvard University Press.
- Cohen, M. D., March, J. G., & Olsen, J. P. (1972). A garbage can model of organizational choice. *Administrative Science Quarterly*, 17(1), 1–25.
- Cohen, M. D., March, J. G., & Olsen, J. P. (2012). "A garbage can model" at forty: A solution that still attracts problems. In *Research in the sociology of organizations* (Vol. 36). Bingley: Emerald Group Publishing Ltd.
- Coleman, J. S. (1964). *Introduction to mathematical sociology*. London: Collier-Macmillan.
- Collier, G. (1972). *Art and the creative consciousness*. Englewood Cliffs, NJ: Prentice Hall.
- Cyert, R. M., & March, J. G. (1963). A summary of basic concepts. In *A behavioral theory of the firm*. Englewood Cliffs, NJ: Prentice Hall.
- Denrell, J., & March, J. G. (2001). Adaptation as information restriction: The hot stove effect. *Organization Science*, 12, 523–538.
- Eliot, T. S. (1962). The love song of J. Alfred Prufrock. In *The waste land and other poems*. New York, NY: Harcourt, Brace and Company.
- Feller, W. (1950). *An introduction to probability theory and its applications*. New York, NY: John Wiley & Sons.
- Friedman, M., & Friedman, R. (1980). *Free to choose: A personal statement*. New York, NY: Harcourt Books.

- Gibbons, R. (1999). Taking coase seriously. *Administrative Science Quarterly*, 44, 145–157.
- Gibbons, R. (2003). Team theory, garbage cans and real organizations: Some history and prospects of economic research on decision-making in organizations. *Industrial and Corporate Change*, 12, 753–787.
- Gibbons, R. (2020). March-ing toward organizational economics. *Industrial and Corporate Change*, 29, 89–94.
- Hayek, F. A. (1976). *The mirage of social justice*. Chicago, IL: University of Chicago Press.
- Isaacson, W. (2011). *Steve Jobs*. New York, NY: Simon & Schuster.
- King, M. L., Jr. (1963). Letter from Birmingham jail: A vigorous, eloquent reply to criticism expressed by a group of eight clergymen. *Christian Century*, 767–773.
- Knudsen, T., Levinthal, D. A., & Puranam, P. (2019). Editorial: A model is a model. *Strategy Science*, 4, 1–3.
- Lave, C. A., & March, J. G. (1975). *An introduction to models in the social sciences*. New York, NY: Harper & Row.
- Levertov, D. (1986). City Psalm. In *Broadside*. Berkeley, CA: Printed for Oyez by The Auerhahn Press.
- Levinthal, D. A. (2011). A behavioral approach to strategy – What’s the alternative?. *Strategic Management Journal*, 32, 1517–1523.
- MacKenzie, D. (2006). Is economics performative? Option theory and the construction of derivatives markets. *Journal of the History of Economic Thought*, 28, 29–55.
- March, J. G. (1962). The business firm as a political coalition. *The Journal of Politics*, 24, 662–678.
- March, J. G. (1972). Model bias in social action. *Review of Educational Research*, 42, 413–429.
- March, J. G. (1991). Exploration and exploitation in organizational learning. *Organization Science*, 2, 71–87.
- March, J. G. (2003). A scholar’s quest. *Journal of Management Inquiry*, 12, 205–207.
- March, J. G. (2006). Ideas as art. *Harvard Business Review*, 84(10), 82–89.
- March, J. G. (2010). *The ambiguities of experience*. Ithaca, NY: Cornell University Press.
- March, J. G. (2013). In Praise of beauty. *M@n@gement*, 16, 732–738.
- March, J. G., & Olsen, J. P. (1989). *Rediscovering institutions: The Organizational basis of politics*. New York, NY: Free Press.
- March, J. G., Sproull, L. S., & Tamuz, M. (1991). Learning from samples of one or fewer. *Organization Science*, 2(1), 1–13.
- March, J. G., & Weil, T. (2005). *On leadership*. Malden, MA: Blackwell Publishing.
- Milosz, C. (1996). *A book of luminous things: An international anthology of poetry*. New York, NY: Harcourt, Inc.
- Nehamas, A. (2000). An essay on beauty. *The Threepenny Review*, 80(4), 4–7.
- Nehamas, A. (2007). *Only a promise of happiness: The place of beauty in a world of art*. Princeton, NJ: Princeton University Press.
- Perrow, C. (1986). *Complex organizations: A critical essay*. New York, NY: McGraw-Hill.
- Pfeffer, J. S. (2010). *Power: Why some people have it—and others don’t*. New York, NY: Harper Collins.
- Pfeffer, J. S. (2015). *Leadership BS: Fixing workplaces and careers one truth at a time*. New York, NY: Harper Collins.
- Ramirez, R. (1996). Wrapping form and organizational beauty. *Organization*, 3, 233–242.
- Rerup, C., & Zbaracki, M. J. (2021). The politics of learning from rare events. *Organization Science*, in press.
- Sandel, M. J. (2009). *Justice: What’s the right thing to do?*. New York, NY: Farrar, Straus, and Giroux.
- Scarry, E. (1999). *On beauty and being just*. Princeton, NJ: Princeton University Press.
- Simon, H. A. (1947). *Administrative behavior: A study of decision processes in business organization*. New York, NY: Macmillan.
- Simon, H. A. (1976). *Administrative behavior: A study of decision processes in business organization* (3rd ed.). New York, NY: Macmillan.
- Simon, H. A. (1978). Rationality as process and as product of thought. *The American Economic Review*, 68(2), 1–16.

- Stern, I., & Westphal, J. D. (2010). Stealthy footsteps to the boardroom: Executives' backgrounds, sophisticated interpersonal influence behavior, and board appointments. *Administrative Science Quarterly*, 55, 278–319.
- Swanson, J. A. (2011). Michael J. Sandel's justice: "What's the right thing to do?": A response of moral reasoning in kind, with analysis of Aristotle and examples. *Boston University Law Review*, 91, 1375–1403.
- Thaler, R. H. (1991). *The winner's curse*. New York, NY: Free Press.
- Thaler, R. H. (2015). *Misbehaving*. New York, NY: W. W. Norton & Company.
- Thaler, R. H. (2018). Nudge, not sludge. *Science*, 361, 431.
- Thaler, R. H., & Sunstein, C. R. (2003). Libertarian paternalism. *American Economic Review*, 93(2), 175–179.
- Thaler, R. H., & Sunstein, C. R. (2008). *Nudge: Improving decisions about health, wealth, and happiness*. New Haven, CT: Yale University Press.
- Weick, K. E. (1979). *The social psychology of organizing* (2nd ed.). Reading, MA: Addison-Wesley.
- Weick, K. E. (1995). Sensemaking in organizations. In *Foundations for organizational science*. Thousand Oaks, CA: SAGE Publications.
- Zuboff, S. (2019). *The age of surveillance capital: The fight for a human future at the new frontier of power*. New York, NY: Public Affairs.

