The Mind
in Context

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Platonic Blindness and the Challenge of Understanding Context

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In *The Republic*, Plato offers the "Allegory of the Cave," in which he describes humans as generally able to see only the shadows of real things, cast on the cave wall. For Plato, the primary goal of philosophical-scientific advancement is to free us from this limitation, such that we might exit the cave and apprehend the objects of the world in their true form. In his view, veridical perception of external entities is difficult but realizable under conditions of principled inquiry.

To a considerable extent, we all share Plato's intuition that the objects of perception exist independently of our observation of them, and can therefore, at least in principle, be understood in their fundamental nature. But this intuition has fared poorly in the modern epoch, falling out of favor in fields running the gambit from literary theory to particle physics. Across these disparate areas, the notion of an autonomous external reality, definable without reference to the viewer, has crumbled beneath mounting evidence that our descriptions are always inescapably rooted in the specifics of our situation, our context. Thus, old views of a Platonic external reality have given way to a notion of *systems*, in which viewer and viewed are at least in part mutually defined.

This new appreciation of context has played out differently in different fields, and we find it instructive to examine how it has unfolded

in sciences that have matured somewhat ahead of our own. Doing so immediately makes clear that when we speak of "contextual influence," we may be speaking of several quite different things. In particular, we see at least two shifts in thinking, both involving a rethinking of the very nature of reality in light of surprising "intrusions" of context.

TWO REVOLUTIONS

A first shift in thinking comes from recognizing the influence of context on the very act of observation. More precisely, it concerns the intrusion of the observer into the system being observed. In the early 1970s, a professor of psychology and seven colleagues gained admission to mental institutions by claiming to hear voices (Rosenhan, 1973). Immediately after admission, these "pseudopatients" reported a cessation of all symptoms, answered all diagnostic efforts with real details from their lives, and behaved normally in all possible respects. Surprisingly, pseudopatients were kept an average of 19 days before being released, in most cases with a diagnosis of "schizophrenia in remission." What explains the inability to "diagnose" sanity, even among expert clinicians at leading institutions? Clearly, part of the answer is that the beliefs of the clinicians colored their perceptions of the patients. Far from an objective state to be observed in a patient, "illness" arose in large part from the process of expectancy-laden observation. Since this seminal demonstration, social psychology has documented dozens more examples, showing in particular that evaluative states, such as attitudes, causally influence external perceptions without in any way disrupting our feeling of confidence that our judgments are "evidence-based"; sure of our own objectivity, we interpret a stigmatized other's behavior as hostile, blind to the fact that our internalized representation of that stigma—in the form of a negative attitude—has railroaded our observations down that very track.

This principle should be familiar from the Heisenbergian revolution in physics, in which the dichotomy between observer and observed collapsed in the face of evidence that *observations* can affect our ability to observe other properties, and may in some cases even change the values of those properties (observing the location of a particle prevents us from observing other aspects of its nature, e.g., its precise momentum or spin). Now, our experiments, indeed our very eyes, are inescapably part of the context within which targets of observation must be understood. Appreciating context in this case involves recognizing that, in these cases, "*observation*" is a verb not a noun, an action with consequences for the observed system.

We can illustrate a second shift in thinking by imagining a fine soufflé. Notice that it in no way resembles its ingredients—the eggs, flour, and sugar that compose its internal structure. What is more, its finished form is not the simple result of combination. Rather, it depends on exposure to a notoriously narrow range of external environments (appropriate mixing, precise time at precise temperature). Each ingredient interacts with the others and with each environmental influence in nonlinear ways, creating a dynamic system complex enough to frustrate mathematical modelers and master chefs alike.

In the psychological context, the traditional Platonic view holds that internal and stable mental states, such as attitudes, interact with external phenomena, such as attitude objects, in an additive fashion that linearly produces behavior. Our liking of chocolate (an attitude) plus our perception of a chocolate bar (an attitude object) leads to consumption of said chocolate (a behavior). However, this sort of model rests on assumptions no more tenable then a culinary model in which all we have to do is sum the reactive properties of eggs, flour, and sugar to produce an optimal soufflé. The shortcomings of this approach are made manifest when we consider the failure of attitudes to predict behavior in anything like the simple way described earlier (e.g., Bohner & Schwarz, 2001).

Speaking of a parallel revolution in genetics, Lewontin (2000) provided the metaphor of the "triple helix," consisting of the two familiar strands of deoxyribonucleic acid interwoven with a third, invisible strand, the environment within which gene expression occurs. Translating this insight to the social-psychological domain requires recognizing that "endogenous" properties, such as attitudes, owe a large part of their causal influence to exogenous factors that interact with them in multifaceted ways. On its own, the endogenous factor is inert until activated by exogenous forces, suggesting not two independent factors but a single interwoven system.

In summary, one shift in thinking about context involves the intrusion of an *observer* into a system previously thought to be definable independently of observation. Back into the cave, where our view will always be situated and therefore in some ways limited. The second revolution is, in a sense, the inverse of the first, involving the intrusion of surrounding *contextual forces* into a system thought to be definable independently of that context. Beyond the properties of our minds and eyes, the shadows on the cave wall can be adequately characterized only with reference to ambient light, surface properties of the wall, and so on. We can change our view but not the fact that we see with particular eyes, from a particular angle.

MIND IN CONTEXT

These transformative ways of thinking in physics and biology have sown fertile seeds in our own discipline; psychology contains many examples

of both types of contextual effect. Indeed, social interaction is one of the most striking places to observe the effects of context, as well as our customary blindness to them. This was well appreciated by early founders of social psychology, including Milgram, Asch, Mischel, and others, and context continues to serve as the most intriguing of variables in many influential research programs today. Indeed, this volume is one more testament to the central role of context in the contemporary empirical endeavor.

Yet this volume and others like it (e.g., Shoda, Cervone, & Downey, 2007) also testify to something else: our continued struggle to develop an *intuitive* understanding of context. In other words, why do we—and here we mean to include even those of us who do our work in this area—need constantly to remind ourselves of the central role context plays? In the remainder of this chapter, we provide a range of examples illustrating various forms of contextual influence, drawn primarily from the literature on attitudes. We then take a step back to ask why the lessons suggested by these results are so hard to assimilate into both our everyday and scientific worldviews. Our primary suggestion is that our basic intuitions about the nature of reality lead us to underestimate contextual influence in our explanations. We call this *Platonic blindness*, a blindness created by the ontological assumptions that shape how we habitually see.

THE MIND IS IMPOSED ON THE WORLD

Rosenhan's (1973) experience in psychiatric institutions demonstrated that even expert judgments can be distorted by the assumptions or theories we hold. This principle has now been upheld in dozens of studies showing that evaluative preferences influence subsequent judgments, generally in ways invisible to the actor. In the paradigmatic cases, because we see through a distorting lens, nearly everything we observe fits our preconceptions and so seems to validate the expectations with which we began.

For example, negative attitudes toward black Americans shift interpretations of observed situations in a valence-consistent (i.e., negative) direction. One of the earliest experimental observations of this phenomenon used videos depicting an interaction in which an actor bumped into someone in a manner ambiguous between an aggressive act and an accident; when the actor was a black American, participants were considerably more likely to interpret the act as aggressive and hostile—despite the fact that the videos were identical except for the race of the actor (Duncan, 1976). The implications of this finding are striking: An attitudinal schema inside the head of the observer can make the very same

event *look different*. More recently, a field study (Agerström & Rooth, 2009) found that hiring decisions made by real-world human resource managers in Sweden were profoundly influenced by implicit attitudes, such that potential employers higher in implicit bias against Arab Muslims systematically undervalued job applicants from that group. The manager's *subjective* experience is one of merely evaluating the evidence (i.e., the candidate's work experience and other qualifications), but the experimental record reveals that these evaluations are themselves partly the result of attitudinal biases in the head of the evaluator.

This sort of example, in which attitudinal biases affect subsequent processing, is widespread and even penetrates down to basic processes, such as emotion perception. White Americans with negative implicit attitudes toward black Americans, for example, are more prone to see black faces as angry (anger both lingers longer and appears more readily on black than on white faces; Hugenberg & Bodenhausen, 2003). The reverse relationship has also been demonstrated: Emotion influences the perception of racial category membership. For those with negative implicit attitudes toward black Americans, racially ambiguous *angry* faces are more likely to be categorized as black than otherwise identical *happy* faces (Hugenberg & Bodenhausen, 2004). This effect is now known to appear early in development, from the earliest instances of racial categorization (around age 3–4; Dunham & Banaji, 2008). In these cases, a relatively subtle contextual cue (emotional expression) shifts categorical judgments that we might be tempted to think of as based on clear perceptual (i.e., morphological) criteria. Recent meta-analytic evidence allows us to generalize these findings considerably. We now know that subtle implicit attitudes exert a profound and wide-ranging impact on behavior, particularly in the context of discrimination (e.g., Greenwald, Poehlman, Uhlmann, & Banaji, in press).

Other evidence suggests that attitudes are also systematically affected by motivational states. In one striking example of this phenomenon, Ferguson and Bargh (2004) found that objects that can be used to achieve a currently active goal tend to be evaluated more positively ("I like hammers more in the presence of nails I want to drive in"). Similarly, chronic goals to avoid being prejudiced appear to moderate implicit biases against racial outgroups (Barden, Maddux, Petty, & Brewer, 2004; Maddux, Barden, Brewer, & Petty, 2005). In addition, our implicit attitudes toward food stimuli are more positive when we are hungry (Seibt, Hafner, & Deutsch, 2007), highlighting the emergent and goal-directed aspects of evaluation. These findings suggest that internal represented states are themselves a crucial contextual factor, systematically shifting the standard of evaluation in a direction consistent with them.

Across all these examples, objects out in the world are not perceived "as they are," and evaluations of objects are not stable values that can

be exactly measured. Rather, perceptions and attitudes are partially constructed and interpreted out of what is already inside our heads. At the broadest level, these cases can be thought of as instances of a confirmation or correspondence bias, in which internal expectancies influence perception, judgment, and action, pulling them in a direction determined by preexisting internally represented attitudinal schemas—the internal context against which social cognition occurs.

ACTION AT A DISTANCE

One of our most cherished notions is that *who we are* is stable, definable by enduring traits and dispositions. For example, one might think of oneself as by nature a messy person, never overly fastidious. How surprising, then, to find out that a lingering scent of citrus (a common element in cleaning products) could lead one to pluck up more diligently the crumbs produced by eating a cookie (Holland, Hendriks, & Aarts, 2005)! This is by no means the only example of a subtle external environmental factor that seems to remake our internal dispositions in surprising ways. Another favorite example of ours is the connection between weather and psychological states. For instance, people express more positive attitudes toward their marriage on sunny days, unless they are asked about the weather prior to the assessment (Schwarz & Clore, 1983).

One difficulty in identifying contextual influences stems from the fact that "context" exists at so many levels at once: The flow of time gives rise to infinite momentary variations, each exerting its own subtle influence, but at the same time we live within more stable "macrocontexts" that constitute our cultural milieu. For example, a tendency to prefer one's ingroup seems to be pervasive in members of the majority. Yet, at least when measured at the implicit level, members of racial and ethnic minorities often do not show ingroup preference (Nosek et al., 2007). Here, the "context" is the broader climate of power relations, a background ecology that reverses the tendency to prefer one's own. These effects emerge early, as early as implicit preferences have been successfully measured (5- to 6-year-old children; Dunham, Baron, & Banaji, 2007). This general backdrop is easily taken for granted, placed under an amorphous rubric of "cultural factors." Yet results like this one suggest that the cultural climate that surrounds us is at least as likely to shape our attitudes as is the literal weather outside.

A step below this macrocontext, the physical environment within which evaluation occurs also exerts an influence on the power and direction of those evaluations. Outgroup targets in a stereotypical context (i.e., black Americans on an inner-city street corner) are judged

more negatively than the same targets in a more positive context (i.e., black Americans at a family picnic) (Wittenbrink, Judd, & Park, 2001). And not all such effects are negative; recent work on the malleability of implicit attitudes has also revealed several ways in which contextual influences can make us more positive toward groups we might otherwise be hostile toward. For example, the mere presence of a black American experimenter led white participants to manifest less negative implicit attitudes toward blacks, presumably because the experimenter represented a competent and positive (and therefore counterstereotypical) exemplar who activated more positive aspects of the attitudinal schema (Lowery, Hardin, & Sinclair, 2001). Being cued with positive outgroup exemplars (e.g., Martin Luther King, Jr. and Michael Jordan in the case of black Americans) can similarly decrease the strength of negative implicit evaluations toward those groups (Dasgupta & Greenwald, 2001).

The examples just discussed seem to be primarily unidirectional, in that an environmental factor exerts causal influences on our mental states. However, in most cases, they also rely on internally represented knowledge structures. For example, the effects of exposure to a citrus scent likely depend on a learned association between citrus and cleaning. Closer analysis reveals that, in many cases, external and internal contextual factors reciprocally affect one another. An illustrative example, in the form of a sort of feedback loop, is provided by Chen and Bargh (1997). Activating negative schemas related to black Americans led participants to behave negatively, thereby eliciting negative responses in interaction partners. But because the participants did not recognize their own role in bringing about the negative response, they tended to interpret the other as dispositionally hostile; that is, internal schemas brought about negative behavior, which caused negative responses in others, which were then interpreted as evidence in favor of a negative evaluation of that other. We can easily imagine this phenomenon occurring with respect to other findings we have discussed. For example, the tendency to perceive outgroup faces as angry obviously decreases the quality of intergroup interactions. But systematically "false-alarming" to anger also creates the perception of recurrent evidence in favor of the negative attitude that began the cycle; that is, if one's negative attitude toward black Americans leads one to perceive black Americans as hostile, then this (mis)perception will seem like strong justification for one's negative attitude, creating a self-fulfilling prophecy (e.g., Bargh, Chen, & Burrows, 1996).

Taken together, these examples demand a rejection of the Platonic conception of discrete person and discrete thing. As in other fields, we must move toward ecological thinking, in which the person–environment is conceptualized as a single interdependent system and disposi-

tional states such as attitudes do not have independent reality. Rather, they are the emergent properties of figure–ground interactions between person and context (for elaboration on these themes from a variety of perspectives, see Ferguson & Bargh, 2007; Mischel, 1968; Richardson, Marsh, & Schmidt, Chapter 15, this volume; Schwarz, 2007; Schwarz & Bohner, 2001).

Many of the contextual effects we have discussed operate primarily outside of conscious awareness. Thus, they rarely participate in our own causal explanations of events in the world. This point cannot be over-emphasized because it generates a critical gap between our naive psychological explanations and the facts as they are revealed by controlled experiments. Noticing this gap is the first step toward understanding why our intuitive explanations so often underestimate contextual influences, a point to which we now turn.

A CUSTOMARY BLINDNESS

There is an old analogy likening conscious awareness to a flashlight illuminating a slender circle on the wall of a darkened room; wherever we look, there it is. This analogy is helpful in revealing why we tend to overestimate the importance of consciousness, but it does not go far enough. We might add: Yes, and beneath the illuminated surface of wall, extensive wiring and plumbing hum away, causally efficacious but forever outside illumination. We might add: Yes, and the light, limited to certain spectra, fails to reveal many aspects of the target that are no less real than what we see. What we see is surface, one of infinitely many surfaces that could be revealed should different eyes turn toward the same space.

We want to construct accurate theories of behavior, but at least in the context of our everyday lives, we can only incorporate regularities we perceive, regularities constrained by the narrow bandwidth of conscious attention. Thus, our explanations tend to be Platonic in character, based on assumptions of discrete internal and external realities, systematically excluding the sorts of contextual factors now known to influence us. Furthermore, to the extent that our explanations feel successful (an extent that will greatly outstrip their actual efficacy, a point brought home by Nisbett & Wilson as early as 1977), our confidence in them only grows, rendering more contextual explanations less necessary.

Why these limitations? We believe them to be in large part rooted in the shortcuts evolution has provided us to facilitate our understanding of the world. The evolutionary basis of these abilities is clear when we explore the surprising competencies of infants, revealed by revo-lutionary developmental research undertaken in the last few decades. This shift has centered on a move away from empiricist presuppositions, in which all knowledge is constructed on the basis of direct experience. It is now widely recognized that some initial knowledge, a "preparedness" to learn certain kinds of information given certain kinds of input, is necessary to get knowledge acquisition off the ground (often dubbed *core knowledge*; see Spelke, 2000; Spelke & Kinzler, 2007). For our purposes here, we want to consider how these presuppositions might affect our understanding of objects and events, and how they might relate to our ability or inability to recognize contextual influences.

Both infants and other primates represent core aspects of physical objects, such as their lack of self-generated motion and their solidity. This understanding leads them to be surprised by violations of these expected properties, such as a physical object that moves on its own, or one object passing through another (Aguiar & Baillargeon, 1999; Spelke, 1990). We can conceptualize this knowledge as a causal schema for understanding inanimate physical objects. Of course, some entities in the world routinely violate these guidelines. Take animate entities, such as people and other animals capable of self-generated motion. As it turns out, infants are not surprised when animates behave in this way because they have an independent core knowledge system for reasoning about this class of entities, which we might call core knowledge of *agents*. Interestingly, infants do not think the difference between objects and agents is *merely* the power of self-generated motion. Rather, infants deploy a more complicated schema involving *goals*. For example, upon observing a hand making several reaches for a toy duck instead of a toy truck, infants are surprised if the hand next reaches for the truck, even if the spatial position of the two objects is reversed, such that reaching for the duck now requires a novel path of motion (Woodward, 1998); that is, infants have inferred the presence of a "duck-goal," and so assume that that goal persists even after the duck and truck have switched positions, and this goal violation is more surprising to them than a visually salient change in the path of motion. Thus, infants attribute a stable, internal disposition to the actor, something they will not do in the case of otherwise identically behaving inanimate objects.

Certainly by adulthood we have additional explanatory resources at our command, giving us recourse to theories unavailable to the infant (perhaps the doll that moves on its own is mechanical, perhaps the reach for the duck was based on a false belief), but the mature adult still operates on principles recognizable, in skeletal form, in the first year of life. After all, these are powerful explanatory principles that give us real insight into the workings of the world. That is to say, they largely serve

us well. However, to the extent that we rely on their guidance, we are also constrained by them.

The central tenet encoded in core knowledge of objects is *contact causality*, that objects only move or change when contacted by another object. This model is essentially one in which discrete entities are changed only when other discrete entities physically impinge on them. Core knowledge of agents is based around an assumption that goals are stable dispositional states belonging to individuals, by virtue of which we can predict action. As we discussed earlier, however, both of these core principles are routinely violated in psychological life, in which action at a distance and dynamically changing goals, beliefs, and attitudes are rule more than exception. Yet one of our primary means of understanding causality (core knowledge of objects and agents) systematically excludes such influence. The deck is stacked against our perceiving it accurately.

PUTTING THINGS BACK INTO CONTEXT

We have identified two sorts of factors that restrict our ability to grasp contextual influence. First, basic limitations in the scope of conscious attention constrain the causal pathways we can identify and then incorporate into intuitive theory. Second, innate schemas for causal reasoning provide templates that partially structure explanation in ways that restrict or even preclude a sophisticated understanding of subtle contextual influences. Given the central role that contextual factors must play in present and future theory, these considerations raise the possibility that, left to its own course, the gap between lay and scientific theory will only continue to widen.

It may be that nothing will close this gap, that as in a field like physics, the cutting edge of our science will only continue to arc further from our everyday intuitions. But it is equally possible that new revolutions in thinking will enable us to be smarter about context. Paul Churchland (1985) has argued that changes in theory and language can open windows into new perceptual experiences. Focusing on our ability to perceive subtle physiological states, Churchland points out that the global taste of red wine most of us perceive can, on an expert's tongue, be decomposed into more than a dozen distinct elements and their relative concentrations (ethanol, glycol, fructose, acid, tannin, etc.). This ability is greatly aided by, indeed may wholly rely on, the theory and language of wine tasting; that is, distinctions absent in ordinary language (and therefore largely imperceptible), but which in principle are within our discriminatory range, can be made perceptible if the relevant theory and terminology is mastered.

> Suppose we trained our native mechanisms to make a new and more detailed set of discriminations, a set that corresponded not to the primitive psychological taxonomy of ordinary language, but to some more penetrating taxonomy of states drawn from a completed neuroscience. (Churchland, 1985, p. 16)

Substitute an ecological social psychology for a completed neuroscience, and one has a concrete proposal for remaking intuitions in ways more accommodating to context. Our own experience provides some support for this possibility. In particular, we have found the theory of implicit social cognition and, in particular, implicit bias helpful in describing and understanding our own behavior no less than that of our experimental subjects. Alert to the possibility, and armed with the necessary vocabulary, we are considerably more prepared to identify and, if necessary, counteract at least some of the forms of influence we would prefer to do without. The question, then, is whether the theoretical vocabulary of a mature social psychology can stand in for our lay psychological vocabulary, and in so doing call attention to influences previously overlooked.

Testing this possibility requires adopting our theoretical language in our everyday lives, and places the development of a nuanced and precise theoretical vocabulary at center stage. If our considerations are right, if our resistance to contextual explanation is deeply rooted in our natural intuitions, we may need to consider such radical moves. In Wittgenstein's (1922/2006, p. 7) memorable words, "What we cannot speak about we must pass over in silence." All praise, then, for the birth of new words.

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