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Thinking, Faster and Slower: Toward a Dynamic View of Organizational Cognition

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Abstract: Our abilities as humans—that is, our *powers*—aren't always stable across contexts. In particular, sociocultural contexts can amplify or dampen manifestations of our powers. In particular, the same sociocultural intervention can *catalyze* a manifestation for one sort of individual and *inhibit* it for another. We develop these insights within the conceptual framework of causal powers realism: An ontological theory built on the idea that causal influences and processes should ultimately be understood as the manifestation of powers. Developing capacities' dynamism in this framework enables articulation of novel insights. First, that our psychological capacities are context-sensitive and dynamic all the way down. Second, that tools from ethnographies and agent-based modeling are among out best resources for describing and understanding human behavior.

1. Introduction

When we were kids, we played with fire more than was safe for any child. Vukov used to build fires next to a creek to make 'stews' for dinner. When things went awry, he kicked everything over the bank, dousing the set-up immediately. Lassiter once teamed up with his sisters to help their parents by starting dinner. After getting a pan red hot, Lassiter's older sister put in some cooking oil, resulting in a minor oil fire. Lassiter, thinking quickly, filled a cup with water and threw it at the flaming oil. As adults know, but this child didn't, water makes oil fires *worse* not better. As the flames from the pan threatened to light up the kitchen curtains, Lassiter's quick-thinking sisters grabbed the baking soda from the cabinet to extinguish the fire.

Why begin with our firebug flirtations? The lesson is in the opposite effects of the same substance on two different sorts of fire. Water typically inhibits combustion. Want to put out a match or a campfire? Douse it in water and you're good to go. But in the case of an oil fire, water is exactly the wrong thing to use because the evaporating water carries flaming oil particles into the air. Co-opting language from chemistry, water is an *inhibitor* for wood-fire combustion; but in the case of an oil fire, water is a *catalyst*.

Just as water can be a catalyst or an inhibitor for fires, organizations can be catalysts or inhibitors for cognition. Now, "organization" here can mean something formal like a company or sports team, but it can also include cultures, both widespread (e.g. North American, Japanese) and local (e.g. Pacific Northwest, Chicago's Southside). We follow Secchi and Cowley (2016, 2018) in thinking about organizational cognition as meso level socially-situated behaviors which are the

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[1] Author order was determined by who is more organized. Both contributed equally to this chapter.

product of interactions between the *macro* level (e.g. sociocultural descriptions) and the *micro* level (e.g. biological descriptions). For instance, Silicon Valley startups in the 2000s were typified by flat organizational structures to promote greater collaboration and creativity among its members. The US military, in stark contrast, is characterized by a rigid top-down hierarchy to promote greater unity in action. These different organizational structures, in turn, shape beliefs and expectations of its members. The military's strict hierarchy reinforces the necessity of rule-following, while a start-up's flat organization encourages members to each contribute to the organization's success. The macro descriptions capture the organizational structure: Flat for startups and hierarchical for the military. Micro descriptions would include characterizations of what's going on in individuals' bodies: Their hearts, brains, lungs, spleen.[2] Meso descriptions include the behaviors and attitudes of individuals as they recruit elements of the local social environment and history. The macro structures, in interacting with the micro and meso structures, *catalyze* certain kinds of patterns of thinking and behavior and *inhibit* other kinds.

In this chapter, we develop a framework for describing the meso outputs from interactions between macro sociocultural structures and norms and micro events, like agential cognition, in these terms -- as catalysts and inhibitors. Some norms and environments act as catalysts for cognition; others act as inhibitors. Moreover, the same environment — the same macro conditions and events — might be a catalyst for some and an inhibitor for others. Just as water can catalyze or inhibit combustion, so too can some socio-cultural organizational patterns catalyze or inhibit cognition and behavior. A Silicon Valley start-up trying to increase revenues by imposing a military-style hierarchy would end in disaster; and a flat decision-making structure would leave many soldiers confused.[3]

To develop this view, we extend the framework developed in Vukov and Lassiter (2020; cf. Lassiter and Vukov 2021) to describe how organizational cognition emerges from the catalytic and inhibitive capacities of individuals, situations, and cultures -- and more importantly, the interactions among them. We're calling our position a Dynamic View. Why? Primarily to contrast it with a family of views of sociocultural influence we call Static Views. Static Views are widespread and intuitive, even if they are not often endorsed explicitly by scholars. These views claim, roughly, that sociocultural powers (qua macro level events) always produce the same effect. As an analogy, in the 1980s there was a campaign in the US to get more people drinking milk: "Milk. It does a body good." But as many know, milk is terrible for the roughly ⅓ of people who are lactose intolerant. (Lactose tolerance is a relatively recent evolutionary development in humans.) Static Views, like the '80s Big Dairy lobby, sees influences as having the same effect across the board. Applied to organizational influences, Static Views claim that open layout offices or certain incentive structures

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[2] It's also possible to include some psychological descriptions, given individualistically, in here too. E.g. one might include, for example, the dynamics of attention or memory described in an individualistic way. For individualistic descriptions of mental phenomena, see Segal (2000)

[3] We're applying our catalyst-inhibitor framework to characterize how meso events are the outputs of micro and macro events. But it's worth observing that the same framework can be applied *within* any of these levels. Additionally, it might be that meso events catalyze or inhibit macro *or* micro events. Our current focus on meso events as catalyzed or inhibited by macro and micro events shouldn't be taken as implying that that's the *only* way in which events can accelerate or dampen other events.

or training modules will reliably have the same effect. Want to ensure your organization is committed to data protection? Require that your employees complete an online learning module. Want to inhibit racial or gender biases in hiring practices? An hour-long debiasing seminar should do the trick. That's the static way of thinking.

Static Views can take either global or limited forms. Globally, Static Views claim that sociocultural powers always produce the same effect, full stop. While global Static Views may be explicitly endorsed in the popular imagination (and we consider several examples below), they are rarely endorsed (except perhaps implicitly) by scholars. The closest to an endorsement of a global Static View may be certain computational theories of mind. For example, one often finds in modular theories of visual perception the view that the incoming sensory stream doesn't make much of a difference in how the information in the stream is processed or represented. That is, for visual perception globally, it doesn't matter whether you're perceiving a snake or a clown; both are treated in the same way as retinal stimulation to get converted into representations of the external world. On this view, sociocultural powers have the same effect on visual processes: Which is to say, none. It doesn't matter whether perception happens in the wild or in an fMRI: Perception is perception, wherever you go.

If global Static Views are rare, limited versions are widespread. Limited Static Views agree with global Static Views that sociocultural powers always produce the same effect. Limited Static Views simply limit the domain over which the claim ranges, claiming that sociocultural powers always produce the same effect *in a certain context or domain*. The degree to which a Static View is limited or global is thus a matter of degree—the narrower the domain, the more limited the view; the wider the domain, the more global the view. Consider, for instance, the response of American counseling and psychological organizations after a devastating tsunami hit Sri Lanka in 2004. Well-intended counselors and clinical psychologists were convinced that survivors were suffering from PTSD but in denial or suppressing it. Or that the effects would emerge later in their lives or in successive generations. The best way to deal with the trauma of the tsunami, these Americans believed, was through talk therapy. However, what these counselors failed to consider is that Sri Lankan culture had its own resources for dealing with tragedy, including (among other things) heavy appeals to religion. These counselors implicitly held a belief that the sociocultural powers of Western talk therapy would work just as well with Sri Lankans as it did with Americans. Spoiler alert: It didn't (Watters 2010). But the counselors did succeed in demonstrating a relatively limited Static View in action. While the counselors did not make (or even necessarily assume) a global theory of static influence, they did manifest a limited theory of static influence in the context of intercultural talk therapy.

Dynamic Views, by contrast, insist that both the global and limited Static Views miss the dynamism of socio-cultural influence. According to Dynamic Views, sociocultural influences are never monolithic, but rather vary with the environmental context and with the individual agents to which these influences are applied. Dynamic Views can also be more or less global or limited: On a more limited Dynamic View, socio-cultural influences are dynamic, but only when considered at a

certain level of analysis. For example, a limited Dynamic View may describe two static entities as interacting in a dynamic way: That, for example, a car and the road interact dynamically during an afternoon drive, but that the dynamic interaction is ultimately between two static entities: The car and the road[4]. The view is a Dynamic View because it describes the interaction between the car and the road as dynamic, but is a more limited Dynamic View because it identifies dynamism only at that level of analysis, not at the level of the car and the road themselves. Likewise, applied to organizational contexts, a limited Dynamic View may claim that organizations and agents dynamically interact *as static entities*, for example, that the effectiveness of (static) talk therapy varies with the (static) agents to whom it is applied. Limited Dynamic Views are already an improvement on Static Views; they can accommodate many of the problems with Static Views that we have introduced already as well as many of those we discuss below. We ultimately defend, however, a more global variety of a Dynamic View, one according to which interactions between cultures and agents are dynamic at any level of analysis--they are, we could say, dynamic *all the way down*. According to more global Dynamic Views, there are therefore no dynamic interactions between static entities, but only dynamic interactions between already-dynamic entities. In organizational contexts, that's true of both the organizations and the agents in them. But we are getting ahead of ourselves.

Below, we provide a framework to clarify the implications of Dynamic Views, as well as reasons for favoring a Dynamic View to a Static View of either global or limited varieties. We'll save the details for later, but here's a rough sketch: On our view, sociocultural influences are best understood as *powers*. And all powers, whether those of water or combustion or a particular organizational structure, can inhibit or catalyze behaviors depending on the other sorts of powers with which they're conjoined. Put differently: The precise meso manifestations of both micro level agential and macro level sociocultural powers depend on the powers with which they interact. The selfsame sociocultural and agential powers can thus have an amplifying or dampening effect—or sometimes, have no effect at all—depending on the powers with which they are conjoined. An empowered view of sociocultural influence, we argue, provides a framework that both supports a Dynamic View and explains the limitations of Static Views. It also steers us away from more limited Dynamic Views and towards a more global variety. What's the upshot of embracing a Dynamic View? We suggest two important methodological lessons for the behavioral sciences generally, and for organizational cognition more specifically. First, a guiding lesson: Because human action is the product of dynamic, interacting biological, psychological, and sociocultural powers, predicting how people will respond to sociocultural changes means knowing how specific sociocultural changes interact with specific types of agents in environments of a certain type. Dynamic Views, in short, suggest a path forward for understanding and predicting sociocultural influences, organizational influences included. Second, a cautionary lesson. Dynamic Views, especially in their more global varieties, suggest a limitation of these predictions: Because global Dynamic Views are committed to dynamism at multiple levels of analysis, these views entail that our predictive accuracy will be limited by the tools we've developed to understand the relevant dynamics. An example we'll return to

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[4] Thanks to an anonymous reviewer for suggesting this illustration.

throughout the paper: The merger between automobile manufacturers Daimler-Benz and Chrysler. The former company, hailing from Germany, had a tight corporate culture while the latter embraced its loose, American culture (Gelfand 2018). German executives expected norms of address and appearance to be strictly followed while the Americans were much more relaxed in these areas. Eventually, the cultural differences between the companies led to the dissolution of the merger. This example illustrates what happens with abrupt changes in local sociocultural norms — what Deal and Kennedy (2000) describe as "organizational culture." Both the Americans and the Germans, in tacitly embracing a limited Static View, did not predict such a large shift in the organizational culture and this led to friction. A Dynamic View, undergirded by a framework grounded in powers, predicts it. And yet: A Dynamic View, interpreted more globally, also modestly admits that it is not up to predicting the precise nature of the friction. On a more global Dynamic View, after all, dynamics exist on multiple levels of analysis, and a simple study of organizational culture and the context to which it is applied captures only one of these levels.

Here's how we will proceed: After using some examples to introduce and motivate Dynamic and Static Views, we will offer a brief description of causal powers realism as the background metaphysics. After that we develop a framework for understanding Dynamic Views, bringing in the differences between the limited and global varieties, but only when relevant. We close by suggesting how to think about the relationships between causal power realism and organizational cognition.

2. Illustrating the Dynamic and Static Views

Dynamic and Static Views--in both their more limited and global varieties--are not unique to organizational cognition, or even to sociocultural influence. They are rather general theories of influence that can be applied to any cases in which something has an effect on another. There can be a Dynamic and Static View of chemistry, of biology, of politics, and so on down the list. In each of these domains, moreover, we can adopt more limited or global versions of both Dynamic and Static Views. We'll begin our discussion of Dynamic and Static Views, then, by looking at a variety of cases in which an intervention is supposed to have some kind of effect. We'll offer glosses from Dynamic and Static perspectives, focusing in each case on a more limited version of the theories.

2.1 Case 1: Athletic training

Training regimens are commonplace. Many programs promise that following their advice will result in running a marathon in three months or completing 100 push-ups. The idea is that some set of protocols will result in the promised increase in athletic ability.

2.1.1 Static gloss

These regimens work the same way for everyone (or near enough). If they're good for one person, then they are in principle good for everyone.

2.1.2 Dynamic gloss

Anyone promising that one kind of food or exercise regimen will turn you into an elite athlete is either lying or pitching their advice at so abstract a level as to be useless—the nutritional equivalent of "buy low, sell high." The efficacy of a training regimen depends on the bodies to which it is applied.

2.2 Case 2: Self-help

Self-help books abound in North America. Among the top sellers are *How to Win Friends and Influence People*, *The 7 Habits of Highly Effective People*, *The Power of Positive Thinking*, and the perennial favorite *The Secret*. (Spoiler alert: "The Secret" is to visualize what you want every day until you get it.) The idea is that self-help advice can help anyone improve their lives in some way.

2.2.1 Static gloss

The advice in these books works the same for everybody. All anyone has to do is *follow the advice* to live their best lives.

2.2.2 Dynamic gloss

The efficacy of the advice in self-help books depends on the person taking the advice, and the context in which they apply it. There's no one-size-fits-all advice for improving one's life, no One True Way to become a good person.

2.3 Case 3: Political and economic norms

The history of the United States since the mid-20th century (at least) has been one of exporting American values of capitalism and democracy abroad. The Korean and Vietnam Wars were aimed at stopping communism. More recently, the Afghanistan War begun in 2001 was about removing terrorist groups from power and enabling the establishment of a democratic government.

2.3.1 Static gloss

Democracy and capitalism are the best ways to develop states and nations. Replacing other economies and governments with these will have the best outcomes for citizens.

2.3.2 Dynamic gloss

Whether or not democracy and capitalism will benefit a citizenry depends on a wide variety of individual and cultural factors. This is Max Weber's (1958/1930) insight: Successfully exporting political and economic values depends on native cultural values.

2.4 Lessons learned

In each of the cases above we see a similar pattern: Something is supposed to have an effect on the outcome of something else's functioning, and in each case we might interpret that interaction as being either static or dynamic. If understood as static, the intervention takes a one-size-fits-all approach: The intervention works or doesn't, but its efficacy doesn't depend much (if at all) on that to which it is applied. By the lights of a Static View, what matters is the intervention, the training program, the 'secret' self-help solution, the political norms. Details about that to which the intervention is applied take a backseat, or are ignored entirely. By contrast, Dynamic Views hold that the nature and efficacy of the intervention depends on the capacities to which the interventions are applied. The intervention matters, of course, but it matters in equal measure with what it is applied to.

This helps us spell out the commitments of Static and Dynamic Views in some greater detail. Here's a first pass. Static Views, as we've said, hold that the effect of an intervention is *independent* of the processes to which the intervention is applied. That's true of both global and limited versions of the Static View—recall that the difference between global and limited Static Views consist simply in —the domains over which they range. On any Static View, people who do *this* will experience *that*, or organizations that do *such and such* will then manifest *so and so*. Static Views, in other words, identify prescriptions and interventions and predict that the prescriptions and interventions will work in largely similar ways. At most, the systems to which an intervention is applied provide some individualized flavor.

Static Views, we are happy to admit, carry a great deal of intuitive weight. That's why it is so easy to locate instances of these views -- Static Views seem plausible in many contexts. Some variety of a Static View, moreover, also captures many generalities: Chilling water for long enough will cause it to freeze and heating it for long enough causes it to evaporate; if I drink a liter of whisky in an evening, my ability to drive will be impaired; careful planning of one's day leads to greater productivity. Applied to organizational cognition, Static Views hold that local macro level sociocultural norms have roughly similar effects on micro level agents to produce the same meso

level results. That's to say, agential differences don't matter much when it comes to the application of sociocultural norms, just as any differences between water from the Mississippi, the Nile, or the Amazon don't affect the fact that it all freezes if stored below 0°C. When it comes to painting in broad strokes, all this is true enough.

Yet Static Views do not stand up to more careful scrutiny: Salinated water won't freeze at 0°C, an alcoholic may drive fine after a fifth of a whiskey, and careful planning may sabotage an artist's day. In its more global varieties, Static Views can come close to articulating platitudes and truisms that, on reflection, do not hold up. But even in their more limited varieties--such as a Static View that limits itself to behavior of water-- these views are subject to problematic counter-examples. Indeed, regardless of the domain over which a Static View ranges, its foundation cracks with even a handful of exceptions to the monolithic influence a Static View commits itself to.

Dynamic Views step in where Static Views falter. These views--again, in both their more limited and more global varieties--hold that the results of an intervention depend on the entities or processes to which the intervention is applied. To motivate the commitments of a Dynamic View, we have already mentioned water as applied to an oil fire versus a wood fire -- same intervention; dramatically different results. Consider other cases. Adding salt to cookies makes the cookies a little sweeter tasting, but adding salt to a pot of chili makes it savory. Alcohol has a euphoric effect on some but a dysphoric effect on others (Peng et al, 2010). And best practices in therapy applied to Sri Lankan contexts fail to have the same effect as American contexts. Generally, Dynamic Views hold that the nature and efficacy of any intervention depends in dramatic ways on that to which an intervention is applied. Systems to which an intervention is applied don't merely add flavor--they alter the kind of thing that is getting cooked. Dynamic Views as applied to organizational cognition thus hold that local sociocultural norms will have differing effects on different sorts of agents. That's to say, agential differences matter for local sociocultural norms, just like it matters *what's* burning if you're going to put out a fire. In its more limited varieties, a Dynamic View says that's true for at least certain levels of analysis. In its more global varieties, a Dynamic View says that's true regardless of the level of analysis.

With these insights, we're in a position to state the core commitments of both Dynamic and Static Views for organizational cognition.[5]

Static View: Whatever meso level outcomes local macro level sociocultural norms have on one population, they have similar effects on similar populations.

Dynamic View: The meso level outcomes of local macro level sociocultural norms on a population change depending on the populations to which they are applied.[6]

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[5] These insights can be applied to other instances and a more general formulation given. But since we only have a finite amount of space, we here focus on the specific case rather than arguing for the more general one.

[6] Dynamic Views are rooted in a range of scientific programs with blurry property lines, including (but not limited to) complexity theory, chaos theory, and dynamic systems theory. Dynamic Views acknowledge

It might be useful to sharpen these up just a bit. For Static Views, a key assumption is that targeted populations are similar enough that recommendations from one can be applied to another. "Similar" here is usefully vague, but a good rule of thumb is that two populations count as similar if there is some sociocultural characterization that is true of both and essential to what makes those populations the populations they are. So two populations aren't similar in virtue of having hearts and lungs but they *are* similar if they're both employed by car manufacturers. Two populations differ, roughly speaking, if there is some sociocultural characterization that's true of one (and not the other) and is essential to making that population the population that it is; politicians and meat packers differ on this account, since the sociocultural characterizations that are true of politicians and not meat packers (and vice versa) are essential to the respective populations. There are many details that need working out, of course, but this rough and ready distinction will be good enough for now; the crucial bit is that different populations can share some important features and differ on others, and that these similarities and differences are important for thinking about meso level outcomes.

In contrast to Static Views, Dynamic Views do not take for granted that norms in one population can be transplanted to another population, even if those populations are similar in the ways we have described. Doing 100 pushups a day does not inevitably make an Olympian, nor does visualizing a promotion inevitably send us to middle management. While Static Views trade on generalizations, Dynamic Views take on board messy realities.[7] It is this ability to grapple with messy reality that allows Dynamic Views to avoid the problematic counterexamples to Static Views we have mentioned above. Static Views, in their insistence on readily transferable effects, may balk at the successful CEO who flouts industry norms. Dynamic Views, which emphasize to various degrees the importance of context, take on board such examples in stride.

But why precisely do Dynamic Views succeed where Static Views fail? In what follows, we provide an answer by way of presenting a framework for Dynamic Views. In particular, we present a view called 'causal powers realism,' which we argue explains both the success of Dynamic Views and the failing of Static Views. Causal powers realism also helps us develop the core commitments of Dynamic Views beyond the barebones sketch we have provided thus far.

3. From Causal Powers Realism to the Dynamic View

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sensitivity to initial conditions as an important part of understanding how the system works, a debt it owes to chaos theory. From complexity theory, Dynamic Views embrace themes about unpredictability and emergence from interactions and feedback loops (cf. Mitchell 2009). A feature Dynamic Views highlight from their namesake, dynamic systems theory, is that systems evolve over time, and that the temporal dimension is crucial in understanding the development of cognitive powers (Thelen and Smith 1994).

[7] If Static Views are so wrong, why are they often thought of as the default? Here are two thoughts. First, Static View thinking is less cognitively demanding; it abstracts away from how entities change over time or change in their interactions. More details are harder to think about. Second, the Western philosophical tradition has tended to focus on exploring unchanging essences rather than context-sensitivity. Just think of Plato exploring the Heavenly Realm of the Forms. Such a philosophical and cultural tradition shapes how we think about the nature of things (cf. Nisbett 2004).

Causal powers realism is an ontological theory built on the idea that causal influences and processes should ultimately be understood as the manifestation of powers. Take salt dissolving in water. According to causal powers realism, this should be understood as the manifestation of a power salt has: Its solubility. Likewise for other kinds of causal influences: When I flee a snake, I am manifesting a power of fear; when a company implements a new pay structure, it is manifesting one of its organizational powers; and so on. In short: According to causal powers realism, causal influences should be understood as manifestations of powers (see, e.g., Heil 2003, Molnar 2003, Martin 2007, Bird 2007, Mumford & Anjum 2011, Jaworski 2016).

On its own, we could chalk this observation up to semantics, or worse, metaphysical minutiae. But here's where things get interesting: Powers, according to causal powers realism, are never manifested on their own. They are rather only ever manifested in conjunction *with other powers*. They are, we'll say, manifested in conjunction with manifestation partners (cf. Martin 2007: Chapter 3).[8] When salt dissolves, the powers of the salt are manifested in conjunction with those of water; when I run from the snake, my powers of fear are manifested in conjunction with the snake's powers to produce fear in me, when a company implements a new pay structure, its organizational powers are manifested in conjunction with the psychological powers of its employees, and so on. Once powers enter the picture, we begin to see causation less as monolithic influence, and more as the subtle pairing of partners.

On reflection, however, even the idea of pairs of partners is misleading. Why? To quote John Heil: "if you vary an object's circumstances, you may affect the way an object's powers are manifested because *the manifestation of a power can be affected, often dramatically, by the presence or absence of other powers*" (Heil 2003: 93 [emphasis ours]). Put differently: The conditions in which powers are manifested are powers themselves, powers that contribute in their own way to manifestations. Something as simple as brewing a cup of coffee brings this out. Several powers are obviously crucial to the manifestation of a fully-brewed cup of coffee: The powers of the coffee grounds; of the water; and of the heat applied to the two. We can call these *proximate* contributors to the manifestation. However, there are also other, more *distal* contributors to the manifestation: One's elevation above sea level; the presence of certain minerals in the water; the length of time the coffee is allowed to brew: As any good barista will tell you, all these can affect the results. The manifestation, we could say, is affected by a wide range of both proximate and distal causal powers, including powers that may not have initially been obvious, such as those conferred by one's elevation above sea level. The same thing goes in organizational contexts: While the implementation of a new pay structure at a company may feature the cultural powers of the policy and psychological powers of the employees as its most proximate and obvious contributors, a host of other more distal powers may also play a role in flavoring the implementation. The cultural setting of the company; the morale among employees; the presence (or absence) of a gym or childcare on location: All these and other influences may help determine the precise nature of the policy implementation. The

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[8] Martin calls them 'reciprocal disposition partners.'

general point to draw from this is crucial for our purposes here: The precise nature of a power's manifestation depends on the powers with which it is conjoined.

With this in mind, turn back to the contrast we have established above between Static Views and Dynamic Views. Causal powers realism, in the first place, directly rules out any kind of Static View. Why? Because according to causal powers realism, the nature of any power's manifestation depends on the powers with which it is conjoined. The powers of salt manifest themselves differently in a recipe for cookies than they do in a recipe for pizza; our powers of memorization are manifested differently in conjunction with a tomato juice than a Tom Collins. Likewise, causal powers realism entails that the powers of any given training regimen or economic system or modified pay structure will manifest themselves differently in different contexts. In short, causal powers realism entails the rejection of the idea that any causal influence can be monolithic. It thus entails the rejection of Static Views.

Causal powers realism also entails some variety of a Dynamic View. Indeed, causal powers realism says precisely that the nature of any power's manifestation depends on the powers with which it is conjoined. *A fortiori,* the effects of any given training regimen or economic system or sociocultural norm vary with the populations to which they are applied. Causal powers realism thus provides a broad metaphysical view that not only rules out Static Views; it also entails a Dynamic View.

4. Developing the Dynamic View: Catalysts and Inhibitors

As we have seen, Dynamic Views can deftly avoid the counterexamples that create problems for Static Views. Causal powers realism's endorsement of a Dynamic View thus speaks in its favor. No doubt, however, there are other strategies for embracing a Dynamic View, ones that don't involve taking on board the metaphysical baggage of causal powers realism. Any theory advocating ontological quietism fits the bill—offering explanations and predictions but making no official stance on questions of foundational ontology. So it's fair to ask: Besides being an ally, what does causal powers realism offer Dynamic Views?

Our answer: Plenty. With causal powers realism in place, we can develop two important facets of Dynamic Views that would have been difficult to see without it: First, causal powers realism provides a framework for understanding the idea that powers—and *a fortiori*, sociocultural and organizational powers—can be catalysts or inhibitors; second, causal powers realism offers a framework for pushing us away from a more a limited Dynamic View and towards a more global variety. We tackle the first point here, and the second later.

Consider first then the idea that powers can act as catalysts and inhibitors. Catalyzing powers can act proximately, allowing for manifestations in the first place, or else distally: They can increase the rate of a manifestation, augment its manner, or expand the sets of conditions in which a type of manifestation occurs. Inhibitory powers have the opposite effect: They act proximately by

preventing a manifestation, or else distally by slowing the rate of a manifestation, decreasing its manner, or contracting the sets of conditions in which a type of manifestation occurs.

To unpack the concepts of catalysts and inhibitors further, consider some observations:

1. inhibition and catalysis are always *relative* to another set of powers;
2. whether or not a power is described as an inhibitor or catalyst is relative to a stable set of powers, that is, a state in which the potential inhibitor or catalyst is not present;
3. catalysts and inhibitors lay on a continuum, so that for any manifestation type, certain powers may be more catalyzing or more inhibiting.

Let's consider each of these more carefully.

Start with (1), the idea that inhibition and catalysis are always relative to other sets of powers. To put the same point differently: The selfsame causal powers often contribute differently to different manifestations: Sometimes as catalysts; sometimes as inhibitors. Consider our primary working example: Water's power to evaporate is an inhibitor relative to wood's power to combust but a catalyst relative to oil's power to combust. A different example: The powers of salt can catalyze pain in an open wound even while they inhibit the rotting of meat. Likewise, the powers of alcohol may catalyze Smith's otherwise latent powers of humor even while these same powers inhibit Jones's typically sharp wit.

Next, turn to (2): Whether or not a power is described as an inhibitor or catalyst is relative to a stable set of powers, that is, a state in which the potential inhibitor or catalyst is not present. This observation builds on (1). If powers are catalysts when paired with some sets of powers and inhibitors when paired with other sets of powers, it follows that powers are never intrinsically catalysts or inhibitors, but are rather catalysts or inhibitors relative to some stable set of powers that are catalyzed or inhibited. Put simply: Being a catalyst or inhibitor is an extrinsic property. So, to continue with our initial example, water is neither catalyzing nor inhibitory in itself: It is rather catalyzing relative to a grease fire and inhibitory relative to a wood fire. Likewise, a tight organizational culture may be motivating in certain cultural contexts, yet inhibiting in others, as the Daimler-Benz and Chrysler merger/fiasco demonstrated. The lesson: Labeling a power as inhibitive or catalyzing always involves a reference to a stable set of powers to which it is actually or potentially applied.

Finally, consider (3): Catalysts and inhibitors lay on a continuum, so that for any manifestation type, certain powers may be more catalyzing or more inhibiting. For example, consider the difference between the inhibitory effect of cellophane and thick Styrofoam on a vase's fragility. When I wrap the vase in cellophane, the set of conditions in which the vase shatters are contracted—the cellophane inhibits the vase's fragility. But this set is contracted even further when I package the vase in thick Styrofoam. We can therefore say that the powers of thick Styrofoam have a greater inhibitory effect than cellophane on the vase's fragility. Powers can also be more or less catalyzing than others. The dream of professional fame may catalyze our writing, but the fear of being denied promotion may catalyze our writing even more: While the former motivation may not

inspire us to polish a paragraph on a Saturday morning, the latter will. Some catalysts are so catalyzing that they function as proximate cause of a manifestation—the sight of a snake, for example, catalyzes fear in humans in nearly every situation. Likewise, some inhibitors are so effective that they prevent a manifestation entirely, at least within a delineated set of conditions. Freezing an embryo prevents many of the embryo's powers of growth and development from being manifested; the powers of alcohol can inhibit a human's powers of rationality, at least temporarily; and, given enough Styrofoam, it is possible to prevent a vase from shattering in everything but the most extreme circumstances. The literature on causal powers refers to these kinds of inhibitors— inhibitors that prevent a manifestation entirely or within a delineated set of circumstances—as *masks* (see, e.g., Johnston 1992; Bird 1998).

How does this apply to organizational cognition? We have already hinted at some applications, but before considering the topic more carefully, we must exercise caution. We follow many cultural psychologists in thinking that culture is an essential ingredient of cognition. As Henrich (2017) notes, we are smart because we have culture, not the other way around. As humans and cultures have co-evolved, some of our powers are a result of cultural adaptations. For instance, Chiao and Blizinsky (2009) show that depression is a product of both genetic and cultural factors. The gene associated with depression in Western Europeans and Americans is carried at twice the rate in East Asia, but East Asians experience depression at less than half the rate of their Western counterparts. So are we to think about culture as inhibiting experiences of depression in East Asians? In one sense, we might say "yes" if we're comparing experiences of depression and using Western Europeans as our baseline. On the other hand, we might say "no" insofar as experiences of depression are at least partly constituted by cultural powers. The ambiguity stems from the fact that culture can both inhibit depression *and* be constitutive of the power being inhibited. So how to understand culture's role?

The answer lies in the framework we have already articulated. As (2) stipulates, powers are always inhibitors or catalyzers relative to some set of stable powers. The complication we have identified is that stable powers can *themselves* be shaped by culture. Our response to the complication, however, follows directly from the framework we have introduced: Insofar as a stable power is shaped by culture, it is neither catalyst nor inhibitor, but rather part of the set of powers to be catalyzed or inhibited. Culture, then, plays a role as catalyst or inhibitor only when it catalyzes or inhibits some set of stable powers, and not insofar as it helps constitute that set of stable powers itself.

So turn back to organizational cognition, and here's what we can say: Given some set of temporally stable powers within an organization, novel sociocultural powers can be understood to catalyze or inhibit the set of powers to which they are applied. Consider, for example, the policy of unlimited paid time off (PTO) by the streaming service Netflix. In the company's early days, employees noted that they didn't keep track of their working hours but the company did keep track of their PTO. This didn't make sense, they complained. So the company's CEO decided that since their working hours were not tracked, their PTO wouldn't be tracked either. This worked well for

Netflix, increasing employee satisfaction. Some employees took more than others, but everyone completed their jobs to their superiors' satisfaction. Other companies tried the policy of unlimited PTO in order to attract talented employees. It often failed. But why? Netflix's CEO himself modelled taking plenty of time off and so the employees felt comfortable taking PTO. In other companies, like the social media management company Buffer, unlimited PTO was an option; but, few employees took advantage of it, often because higher level supervisors themselves never took much time off. Consequently, employees didn't feel comfortable taking time off. The result, paradoxically, was that employees ended up taking *less* time off than before the unlimited PTO policy.[9]

Two important points to make here. First, this case, as we have described it, fits naturally with the language of organizational cognition: PTO policies and company culture are our macro factors. Agents' beliefs, individualistically described, are our micro factors. The meso outcomes are agents' situated behaviors.[10] In the case, moreover, there is a feedback loop at work[11] that can be articulated in these terms. As individuals take more or less time off—i.e. as we see more of the meso aspects manifesting themselves—the catalyzing or inhibiting effect of the macro aspects become stronger. Micro level attitudes about taking time off become more entrenched, which amplify the catalyzing or inhibiting power of the macro level policies. The efficacy of the policies magnifies over time through these feedback loops, which change the conditions in which the policies are implemented in the first place. If there are no other mechanisms to keep meso level behaviors in check, we might imagine Netflix employees taking *way* too much time off and Buffer employees working 18-hour days.

In addition to fitting naturally with the language of organizational cognition, the case also grounds our discussion of catalyzation and inhibition in organizational contexts: Combining the lexicons of organizational cognition with the framework of catalyzation and inhibition, we can say that a macro level norm that catalyzed one kind of meso level behavior in one organization inhibited the same behavior in a different organization. Unlimited PTO for Netflix employees encouraged taking more time off; the same policy for Buffer encouraged taking less time off. But "more" and "less" here are relative to states in which there was no unlimited PTO. This is what makes the norm a catalyst or an inhibitor. Thus points (1) and (2) from above are satisfied in this example: The effects of unlimited PTO are relative to other sets of powers and the norm is a catalyst or inhibitor relative to stable sets of powers. And, though our example didn't illustrate it directly, it's clear that (3) would follow as well: The norm of unlimited PTO can be more or less catalyzing or inhibiting depending on the other powers with which it is conjoined. For example, we would expect that unlimited PTO applied by a company with norms even more restrictive than those of Buffer would have an even greater inhibiting effect.

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[9] Thanks to Brett Lewis for details on PTO policies in tech companies.

[10] Thanks to an anonymous reviewer for suggesting that we make this explicit.

[11] Lassiter is completely unashamed of this pun.

5. Some implications

The preceding arguments developed and defended a metaphysic for the relationship between sociocultural norms and agents. What implications does this view have for organizational cognition?

One thing we can point out: Since causal powers realism is a metaphysical theory, it does not offer any testable hypotheses. Even so, it offers an ontology that has a higher degree of fit with some research methods than with others. Just like an ontology of representations fits with computational views of cognition[12], an ontology of causal powers fits with methodologies that offer detailed characterization of the sociocultural norms, agential powers, and computational methods by which to explore changes to relevant parameters. Why? Powers are properties of objects that dispose them to manifest outcomes when conjoined with other powers. Explaining how a power works thus requires looking down, around, and up to other powers (Bechtel 2009). If we're trying to understand human behavior—and if human behavior is a manifestation of powers—then we will need at least a detailed characterization of the sociocultural environment in which the behavior takes place, since that environment contributes powers to the behavioral manifestations.

Causal powers realism—together with the ideas of catalyzation and inhibition—thus fit naturally with and provide an ontological framework for those methodologies that aim to characterize the powers that contribute to behavioral manifestations, and that seek to understand more precisely *how* interventions bring about changes. Agent-based models (ABMs) exemplify this kind of methodology, as they allow us to represent cultures and organizations computationally. With ABMs, modelers create agents and specify interactions among them. Some uses of ABMs require a more or less detailed understanding of the target being modeled (cf. Weisberg 2013). When detailed ethnographies are available, they can inform the development of a model. When they are not, models can be used to suggest parameters that may pay off in ethnographic studies. Consider, for example, the segregation model first proposed by James Sakoda (1971) and later associated with Thomas Schelling (1971).[13] In it, agents are located on a checkerboard and are one of two colors. Some spaces are occupied by agents and others are open. Agents move randomly to open spaces until the majority of their neighbors are the same color as they themselves are. The model uses neighbor preferences and satisfaction as adjustable parameters. This is a case in which researchers have a sense of what the ethnographic record might look like, and the model identifies parameters to learn more about—agent satisfaction and neighbor preferences.

We'll look at two examples to show how integrating ethnographic work and ABMs exemplify the causal powers realism framework—and its attendant implications for catalysts and inhibitors—we have developed in this paper. First, consider again the DaimlerChrysler fiasco: German norms were too rigid for the Americans and American norms were too loose for the

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[12] "Computational" in the "computations and representations" sense.

[13] This model was originally developed as a cellular automaton before being implemented as an ABM. Thanks to an anonymous reviewer for pointing this out to us.

Germans. The trouble was that members of each population weren't psychologically disposed to adapt to the expectations of the others. Culturally-primed expectations of behaviors weren't satisfied.

Causal powers realism diagnoses the problem in broad strokes: Catalyzation and inhibition are always relative to the systems to which they are applied. What works as a catalyst in one situation may well work as inhibitor in another. And that's precisely what happened in the Daimler-Benz and Chrysler merger—cultural norms, applied in a flatfooted way, inhibited precisely where they would have catalyzed on their home turf. Like water thrown on an oil fire.

But this description is very broad. For the details, causal powers realism suggests that we must turn to more empirically-oriented methods. For example, an ethnography of the Daimler-Benz and Chrysler companies would have revealed two different kinds of working environments, each reflecting their home nation's cultural norms. These two different sorts of norms are manifested in the beliefs, judgments, and tendencies of the agents working for each of those companies: Norms aren't free-floating but rather embodied in agent behaviors and cultural artifacts. Likewise, an ABM would suggest at least one other parameter representing flexibility in adapting to expectation-violating norms. While the model, of necessity, would leave out other potentially important parameters, it would at least provide a jumping off point for insights into whether foreign norms would catalyze or inhibit the activity of agents in DaimlerChrysler. Causal powers realism thus provides the general picture of causal influence and the language of catalyzation and inhibition. ABM provides the details about the precise nature of particular causal influences.

Consider another example: Before launching antidepressant medication in Japan, the pharmaceutical company GlaxoSmithKline brought in dozens of experts on Japanese views of depression, particularly exploring its cultural acceptability and modes of treatment (Watters 2010). Depression is a recognized illness in Japan, but it was classified alongside more serious illnesses like schizophrenia. Mild depression wasn't thought of as something needing fixing. It was just an occasional fact of life that one dealt with and there were other cultural remedies for the experience. While these academics lauded the company for its sensitivity to local cultural norms, GlaxoSmithKline executives set their sights on how to manufacture a market for their antidepressants. They pursued an aggressive ad campaign that pathologized less severe forms of depression. The pharmaceutical company attempted to change the cultural narrative around depression and provide a solution: The antidepressant paroxetine. It worked. Within a few years, paroxetine sales in Japan were in the hundreds of millions of dollars.

GlaxoSmithKline's strategy here exemplifies the sort of research methodology that fits with the ontology we've developed. Causal powers realism—and the further nuance of catalyzation and inhibition—entails that effectively intervening in sociocultural norms means gathering a lot of detailed information. Pitching antidepressants to 21st-century Americans catalyzes purchasing in some. Doing the same in a culture where melancholy isn't a problem will fail. GlaxoSmithKline's actions were morally depraved, but ontologically on point—in order to import or export norms, those norms cannot simply be applied and assumed to work as catalysts in the way they did at home.

Instead, there need to be detailed ethnographic studies of the populations involved. You need to study the nature of the fire before throwing water on it. Likewise, GlaxoSmithKline understood that sociocultural influence is no monolithic force, but instead dependent on that to which it is applied. Before peddling the drugs, they had to manufacture the problem.

And the lesson generalizes. There's no importing or exporting sociocultural norms without a detailed understanding of where those norms are coming from or going to. In general, ethnography has internalized this lesson. Indeed, ethnographic studies often focus on functional descriptions of people's activities within the contexts of the ways they live. That's to say that they focus on what people can and actually do. But this *just is* another way of talking about causal powers: Powers of individuals and how they interact with powers of the local physical and sociocultural environment. For instance, Kohn (2013) describes life among the Avilá Runa of Ecuador. He opens with advice on how not to get eaten by a jaguar: According to the locals, sleeping face up will stop a jaguar from eating you because the jaguar will recognize you as a sentient organism and not as meat. That's to say one's power to be recognized as a sentient organism partners with the jaguar's power to perceive sentient organisms to manifest behavior of seeking food elsewhere. While not often using the language of causal powers, ethnographic methodology has an ontological friend in causal powers realism.

Causal powers realism, then, provides ontological guardrails for theorizing in organizational cognition. It provides the explanation for why moving norms from one population to another is a potentially hazardous enterprise. Through the idea of catalyzation and inhibition, causal powers realism also cautions us from attempting to export cultural norms wholesale. What worked as a catalyst in one setting may work as an inhibitor in another. The lesson? One had better know both settings intimately before attempting such an import. Indeed, insofar as behavioral manifestations are the result of interacting powers, different sets of powers can mean different manifestations. *A fortiori*, cultural powers that may work with agents of one population aren't guaranteed to have the same outcomes with agents of a different population. One implication: When foreign norms are imported into a population, it's not an agential failing if undesirable outcomes manifest themselves. Rather, it's a function of the furniture of the universe as discovered by the sciences: Water makes oil fires worse, and German business norms demoralize American workers.[14]

6. Temptation and reply

So far, so good, you may think. Causal powers realism predicts a Dynamic View and provides a framework for developing predictive frameworks for organizational cognition. Make sure to countenance the dynamism of between relevant organizational and agential powers, and you're off and running.

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[14] A difference, of course, is that human and cultural powers evolve over time while chemical powers do not.

Not so fast. This kind of thinking, while certainly better than a Static View, reflects a strong temptation to hold on to some static elements. It represents a limited rather than global Dynamic View, one in which, even if powers interact in a dynamic way, powers themselves are static. Water may interact differently with flaming oil and flaming wood, but the powers of water, combusting oil, and combusting wood don't change. Likewise, as long as we understand that cultural powers and agential powers interact dynamically, we can treat those powers themselves as static. That's a Dynamic View, to be sure, but a limited one.

Causal powers realism resists this way of thinking, and pushes us instead to a more global Dynamic View. Indeed, this is the second main lesson causal powers realism can offer a Dynamic View: Dynamic Views should not stop at a limited articulation of dynamism, but should push towards a more global articulation, one that is committed not merely to dynamism between static entities, but rather to dynamism all the way down.

To see why causal powers realism pushes us towards this more global Dynamic View, consider: Causal powers realists understand manifestations of powers as powers themselves. Put differently: The manifestation of every power is itself empowering (Jaworski 2016: 54, Vukov & Lassiter 2020, Lassiter & Vukov 2021). A log that manifests its powers of flammability is in turn empowered to toast marshmallows. Likewise, a company whose employees are motivated by a new policy are in turn empowered to be more productive. According to causal powers realism, powers are therefore not static entities that interact dynamically and lead to some static result. Instead, powers are *themselves* dynamic. One direct implication: When powers interact to produce a manifestation, this manifestation is itself a power that can become part of a feedback loop. As a result, predictions about future manifestations become more and more difficult the further out from a given interaction one attempts to scry.

Before turning to what this means for organizational cognition, consider a different kind of example that highlights the commitments of a global Dynamic View: Weather forecasting. Currently, news channels offer 10- and 14-day forecasting in an attempt to outdo one another. But our best models are accurate to roughly 7 days; after that, accuracy quickly tapers off (cf. Silver 2012). A global Dynamic View predicts this. The reason is not that weather cannot in principle be forecast two weeks in advance. Rather, the reason weather is so hard to predict is that it's a complex, dynamic system, and that this dynamism is one among dynamic and not static entities. Extrapolating from current patterns to future ones involves predicting how numerous factors interact with one another *and* how those interactions affect the current state of the system. Weather is a system constituted by feedback loops, and we haven't developed the tools to model this complexity more than a few days out. Weather, in short, is difficult to predict because it is best captured by a global Dynamic View, one that is committed to dynamism not merely at some levels of analysis, but rather at all of them. Weather is dynamic all the way down.

Causal powers realism entails that the same thing is true of people. People dynamically interact with their organizations and cultures. These interactions, however, are never interactions between static entities, nor do they produce static results. Instead, manifestations of these powers'

interactions are themselves powers, which in turn affect agential and organizational powers. There's a feedback loop between agents and organizations. Agential behavior is a manifestation of agential and organizational powers; and this manifestation is also a power, which can in turn interact with agential and organizational powers in the future.

There are at least two upshots to these insights. The first is this: When we apply the kind of global Dynamic View entailed by causal powers realism to organizational cognition, it becomes clear that there are limits to what we can predict in organizational contexts. Seen from the perspective of causal powers realism, predicting the precise nature of organizational and agential interactions is akin to predicting the weather. We may be able to predict results in the short term and in broad strokes, but as we get further from the interaction or try to predict results more precisely, the degree of accuracy in our predictions is bound to falter. This insight isn't new. Complexity theorists have been keen to point this out for decades (cf. Mitchell 2009). Yet causal powers realism provides a distinctive gloss to the idea. For example, for causal powers realists, the reason it is not possible to load a bunch of parameters into an ABM and make accurate predictions about agent-organization interaction is because those interactions *themselves* affect both agential and organizational powers. Moreover, as soon as those are loaded into an ABM, there are then still more emergent powers to account for. Global Dynamic Views predict this variety of limitation, and causal powers realism provide a framework for it as well as a lexicon to describe it.

This brings us to the second upshot of the kind of global Dynamic View entailed by causal powers realism: As our science gets better, so will our predictions. Just as it's not in principle impossible to predict weather accurately 3 months out, so too it's not impossible in principle to model behaviors far off in the future, or in fine-grained detail. Global dynamism makes it more difficult to make predictions, but advances in the sciences and in technology allow us to go deeper into layers of dynamic interactions. Predictions can't be perfect of course, nor would we want them to; overfitted models are excellent on training data but terrible with new data. Just the same, our models of organizational cognition will allow us to make better predictions the more research and modeling we do.

7. Conclusions

Turn back to the contrast with which we opened our discussion: That between Static and the Dynamic Views. Static Views, on the one hand, say that whatever effect local sociocultural norms have on one population, they have similar effects on similar populations. Global and limited Static Views disagree about the domain to which this claim applies. Yet all Static Views have difficulties grappling with the fact that sociocultural norms do not always have similar effects on similar populations. Dynamic Views fare better in the face of these cases. On these views, the effects of local sociocultural norms on a population change depending on the populations to which they are applied. Static Views, we admit, may initially seem to be common sense, and are widely endorsed in

both popular and professional circles. Static Views, however, must ultimately move aside for the more careful descriptions provided by Dynamic Views.

What we have done in the pages above is to develop a framework—causal powers realism, and its attendant notions of catalyzation and inhibition—that can act as a structure and provide a lexicon for applying a Dynamic View to organizational cognition. Organizations have powers and so do agents. Behavioral manifestations are the product of agential and organizational powers. Some sociocultural norms can catalyze or inhibit behavioral manifestations, but whether they are catalyzing or inhibiting will depend on that to which they are applied. Causal powers realism, we believe, provides a guiding framework in which research into organizational cognition can take place.

Stepping back, we find that causal powers realism provides a ready-to-go ontology for organizational cognition in the way that representationalism provides an off-the-shelf ontology for computationalism in cognitive science. The payoff of this is that causal powers realism, and the global Dynamic View it entails, provides categories for descriptions and explanations of phenomena in organizational cognition. Further, as we have seen, it is an ontology that fits with extant research methods for organizational cognition. Take causal powers realism on board and gain a theoretical vocabulary for identifying and describing the explananda. Seen from the perspective of causal powers realism and a global Dynamic View, the failure of the DaimlerChrysler merger may not have been predictable; but it is readily explainable.

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