Overcoming Policy Resistance
to Diversity, Equity, and Inclusion Efforts

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ABSTRACT

This paper asks: How can system dynamics modeling generate and communicate knowledge for organizational policy-making that better achieves goals of Diversity, Equity, and Inclusion (DEI)? Research findings and societal statistics show common organizational policies in this field have fallen far short of their goals over many decades. We argue this policy resistance resides in inadequately recognized and addressed vicious cycles. Our analyses reveal a neglected leverage point: structuring productive intergroup interactions to achieve superior work unit performance. Drawing on large bodies of extant research, we present organizational-level models of system dynamics involving virtuous cycles that can be implemented practically by organizational leaders and managers to produce inclusion, equity, and work unit performance. The models identify the need to combine a comprehensive set of inclusive organizational practices and evolve them through policy persistence. In this endeavor, we invite input from individuals with system dynamics expertise to identify next steps for DEI research and dissemination.

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An exceedingly large body of research exists relevant to long-persisting societal problems involving diversity. The research is generated in many disparate academic fields, with poor knowledge transfer across the fields and into policy-making in organizations. The involvement of disparate fields reflects the problems residing in a complex dynamic system that spans many parts of society. Accordingly, we ask: To guide organizational policies, how can system dynamics modeling, concepts, and tools synthesize and communicate the knowledge from a large body of research on diversity, equity, and inclusion (DEI), providing insights into:

1. The dynamic phenomena causing problems of diversity, equity, and inclusion to be repeatedly reproduced over time, and
2. Organizational actions that are effective in eroding the reproduction of the problems and increasing inclusion, equity, and work unit performance from diversity?

To provide research-based insights into these questions, we analyze the multiple elements and dynamics represented in Figure 1, termed a Framework for Inclusive Interactions, Equity and Performance. The figure reflects the dynamic complexity of achieving goals of inclusion, equity, and performance, depicting vicious cycles of social practices and the potentially counter-vailing effects of virtuous cycles that can be initiated and sustained by organizational and work unit leaders. Emphasizing the sustained, dynamic, action-driven nature of DEI phenomena, the figure represents actions as habitual practices followed by organizational members. Our analyses break out the elements of the Framework in the form of dynamic models.

Fig. 1: Framework for Inclusive Interactions, Equity and Performance
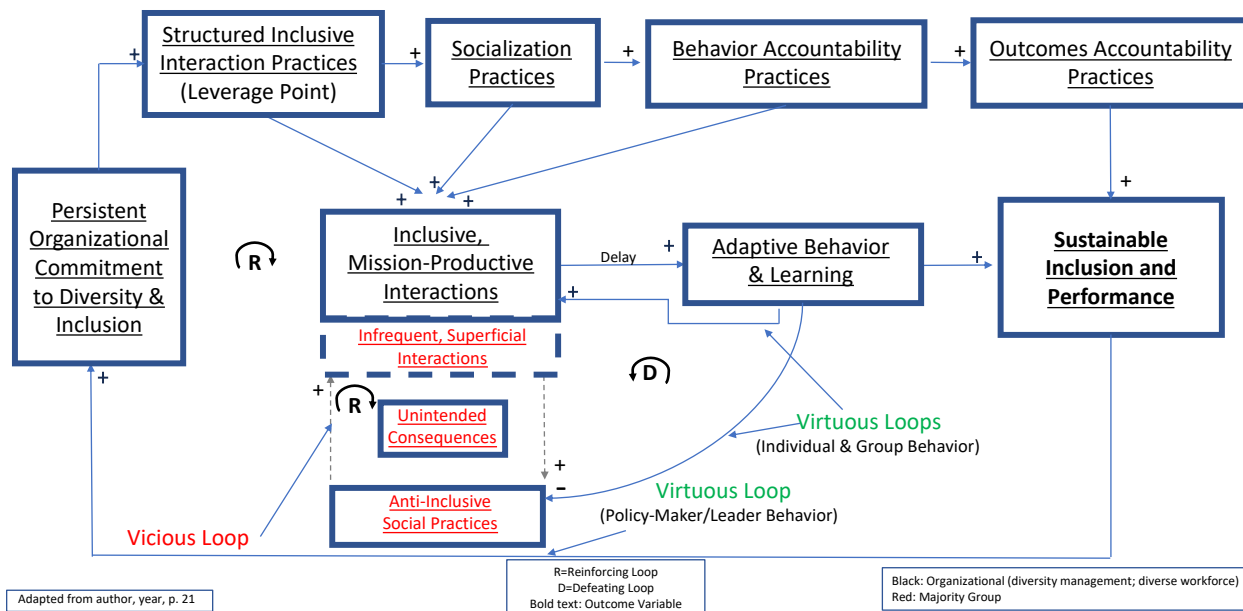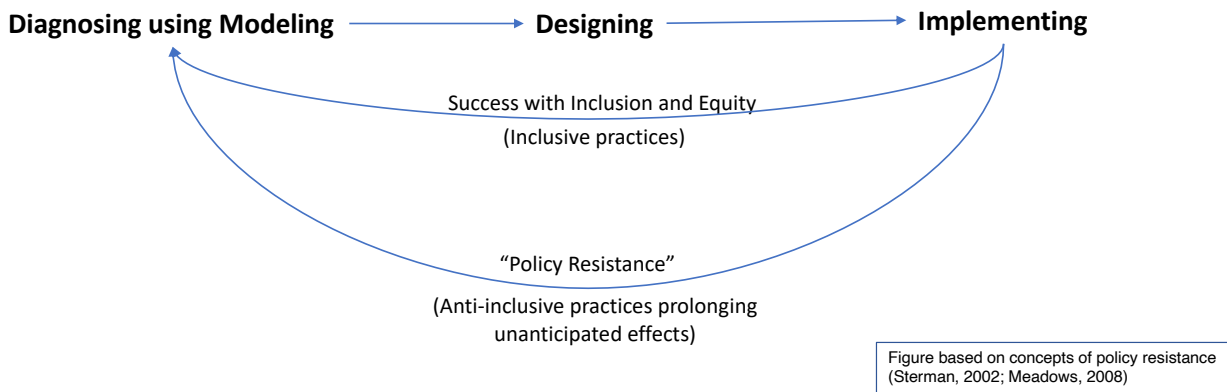
Sustained and Costly DEI Policy Shortfalls

Achieving DEI in organizations has proven to be a wicked problem (Churchman, 1967), complex and persistent. As represented in the lower center of Figure 1, a set of social dynamics sustains exclusion and inequities in employment, at great cost to individuals and societies. In the United States losses to Gross National Product due to deficient utilization of human capital – that is, discrimination – are estimated to be on the order of $1 trillion annually and growing (Buckman et al., 2021). Yet, progress on DEI has stalled. In the United States national statistics on wage gaps and employment at higher organizational levels show improvements in the decades immediately following passage of the Equal Employment Opportunity Act, but limited progress and regression subsequently. For example, reductions in occupational segregation occurred among Blacks, Hispanics, and women from 1966 to 1980, but from then into this century only for women (Tomaskovic-Devey et al., 2006), and labor economics analyses find stagnation since 1990 in reducing wage disparities (Daly et al., 2017). Meta-analysis of studies from 2005 to 2020 shows no evidence of a decline in hiring discrimination (Lippens et al., 2023). Audit studies continue to find bias in hiring in terms of call-backs from experimentally-manipulated job applications sent to employers (Bertrand and Duflo, 2017). Audit studies are likely to under-estimate discrimination since call-backs are largely determined by human resource management staff generally attuned to legal issues of discrimination, while biased decisions have been found to reside heavily in the discretion allowed managers on final personnel decisions (Castilla, 2008). The persistence of hiring discrimination belies common beliefs in meritocracy (Amis et al., 2020), with such beliefs shown to produce greater discrimination (Castilla and Benard, 2010). Contemporary research reveals widespread public beliefs in an unfounded narrative of diversity progress, with this narrative driving a resistance to DEI efforts (Kraus et al., 2022).

Organizations face these dual issues of economic performance and equity as workforce diversity increases. A systematic review of research shows that diversity has an equal potential to raise or lower team performance (Joshi and Roh, 2009). This finding indicates a need to shift the focus from mere *representation* of underrepresented groups to their *inclusion* (Nishii, 2013) in productive work relationships as a path to more effective human capital utilization. Meanwhile, longitudinal research on a large sample of major U.S. corporations reveals that several well-intended diversity management initiatives designed to improve equity, counter-intuitively, do the opposite (Dobbin et al., 2015; Kalev et al., 2006). Ineffective practices included mandatory diversity awareness training and several fair employment practices such as job tests for promotions. These findings call for improved policy-maker knowledge and organizational practices to counter backlash and achieve inclusion (Brannon et al, 2018).

To aid organizational leaders and researchers in addressing these realities and challenges with the aid of system dynamics, our effort here is two-fold: 1) diagnosing current policy shortfalls by modeling the complexities of dynamic system effects that complicate progress in employment outcomes and 2) identifying leverage points (Meadows, 2008) for organizational policies that successfully address these social complexities. System dynamics enables us to examine *policy resistance*, how and why "today's problems often arise as unintended consequences of yesterday's solutions … The complexity of the systems overwhelms our ability to understand them. Many seemingly obvious solutions fail or actually worsen the problem." (Sterman, 2002a, pp. 1 & 6). Underlying policy resistance are two broad issues (Sterman, 2002a;

Repenning and Sterman, 2002). First, complex systems are characterized by feedback loops, the interplay of multiple actors, time delays, and other processes that enable well-intentioned policy efforts to be undermined by the system's responses over time. Second, policy development is flawed by human interpretations and heuristics that are, among other difficulties, simplistic in terms of cause-effect relationships, the disciplinary boundaries that narrow focus, and the fundamental attribution error (Ross, 1977) of ascribing problems to individuals' dispositions rather than to system structure. For example, ineffective diversity training efforts (Dobbin et al., 2015) persist due to simplistic assumptions about the determinants of participants' behavior. And narratives of women's empowerment lead to an interpretation that DEI progress is the responsibility of women changing rather than system structures being changed (Kim et al., 2018). A systems-oriented policy persistence over time by organizational leaders, as depicted in Figure 2, deals with such policy resistance by repeatedly securing feedback on achieving DEI policy goals, diagnosing the problematic processes that are impeding better achievement, and designing new policy elements to address those processes.

Fig. 2: Policy Persistence using Systems Dynamics Modeling: leads to both Policy Resistance and some Success with Inclusion and Equity

Diagnosing using Modeling ⟶ Designing ⟶ Implementing

Success with Inclusion and Equity
(Inclusive practices)

"Policy Resistance"
(Anti-inclusive practices prolonging unanticipated effects)

Figure based on concepts of policy resistance (Sterman, 2002; Meadows, 2008)

In the following sections we present models of DEI system dynamics based on bodies of extant research. We first identify problematic dynamics driven by current DEI policies and by *anti-inclusive social practices* prevalent in society: self-segregating and interacting with discomfort, stereotyping and stigmatizing, and making decisions based on implicit bias. The models reveal how these common social practices limit interactions to those that are superficial and infrequent, and how they drive vicious cycles that produce exclusion and inequities. To combat these vicious cycles, we apply a system dynamics perspective to model the operation of organizational structures and processes over time at the work unit level. As represented in Figure 1, we identify a novel leverage point – *structuring* performance-enhancing practices for intergroup contact (interpersonal interactions) that reduce prejudices over time – and identify the value of combining these with practices for socialization, behavior accountability, and outcomes accountability to produce virtuous cycles. These sets of *inclusive practices* support mission-productive interactions in workgroups. Over time, with a delay, these interactions produce adaptive learning and sustainable inclusion with equity and enhanced work unit performance. We then model case studies that illustrate context-appropriate variations in the inclusive practices.

The large number of models reflects the complexity of diversity dynamics in contemporary organizations, a complexity that suits system dynamics analyses. We invite dialogue on next steps in using system dynamics tools to generate and communicate research-validated knowledge for DEI policy-making.

METHODS

Focusing on organizational structures and processes offers a proven, realistic way to produce insights on problematic phenomena using system dynamics. An operations research perspective on how organizational structures and processes sustain undesired outcomes has provided valuable insights on a range of organizational problems. Our research, then, attempts to examine the bounded problem of achieving inclusion, equity, and high performance from diverse personnel at an organization's work unit level.

One demonstrated approach to using system dynamics modeling for organizational improvement has been to involve a system's members in generating models representing the operation of their specific system (Bleijenbergh & Van Engen, 2015; Werner et al., 2021). Our approach differs and appears to be somewhat novel: modeling that draws upon and attempts to synthesize evidence from multiple bodies of extant research. An extremely large body of empirical research on DEI phenomena already exists, a major advantage for studying DEI problems using system dynamics. We draw upon years of research generated by many fields of academic study, synthesizing and modeling findings from a transdisciplinary search of empirical work in managerial and organizational studies, psychology, social psychology, sociology, labor economics, urban studies, and healthcare (Authors, Year). Here, due to space limitations, we limit literature citations to fewer than the hundreds used in that synthesis. Much of the research has been systematically reviewed by academics in these fields, often several times over the years, yielding well-validated findings. We favor findings from these systematic reviews and meta-analyses, as well as large-sample and longitudinal studies, and recently-emerging research on unintended effects of DEI policies. Additional findings were gained from our own empirical studies, including comparative case analyses.

We attempt to leverage these findings using the distinctive tools of system dynamics. To understand vicious cycles of policy resistance, we apply research that has revealed the unintended effects of common DEI policy actions, placing the findings in models portraying feedback loops that reinforce or defeat DEI-relevant outcomes. We do similarly with research findings that indicate virtuous cycles, leveraging two bodies of under-used research: intergroup contact theory and practice theory. We use the system dynamic models for communication and dissemination of knowledge, as opposed to the running of simulations. Our goal is to produce a series of models, and the overarching framework that combines the models, to communicate research-validated, policy-relevant insights to organizational leaders, other DEI policy-makers, and DEI researchers.

MODELING UNINTENDED DYNAMICS UNDERMINING DEI POLICIES

The interpretations that many members make of their organization's DEI efforts are drivers of policy resistance. A meta-analysis of 110 studies found strong Black-White

differences in supportive vs. unsupportive attitudes for DEI programs (Harrison et al., 2006). The more prescriptive the program, the greater the differences in attitudes, with the differences in lack of support being four times greater for the most vs. least prescriptive programs. The findings from this and similar research are modeled in a general fashion in Figure 3, with attitudes and interpersonal behavior triggered by DEI programs leading to unintended consequences that, among other negative impacts, reinforce a vicious cycle in workgroups. That cycle has anti-inclusive social practices (such as stigmatizing) and infrequent, superficial interactions feeding on each other, hampering inclusion, equity, and performance.

Fig. 3: Unintended Consequences of Anti-Inclusive Practices
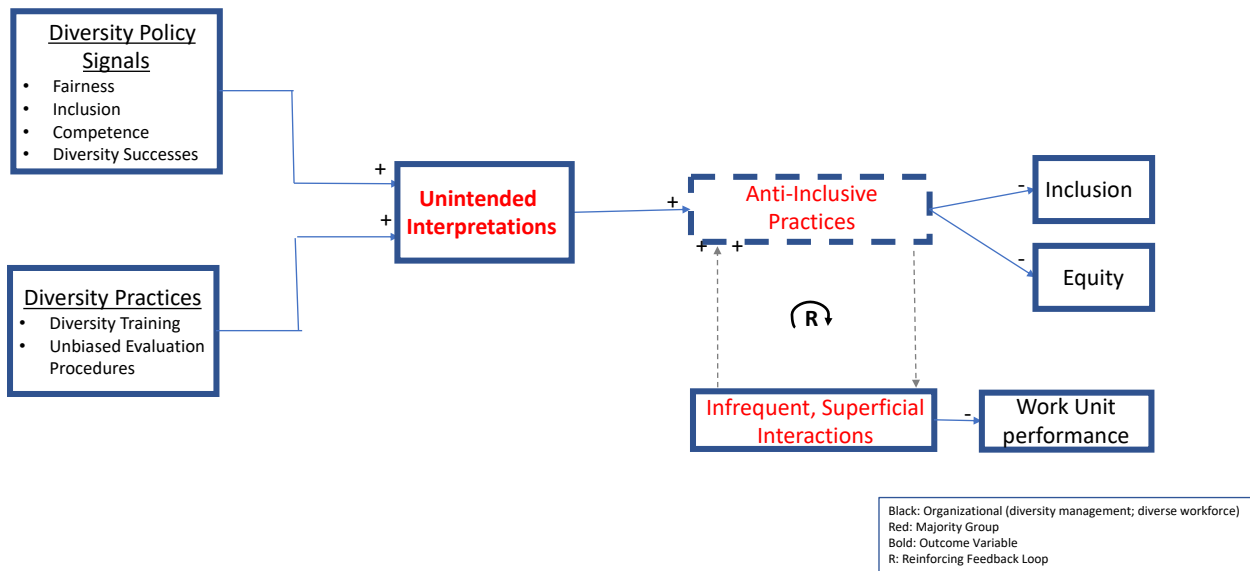
The left side of the figure represents counter-intuitive findings from two recent, highly informative analyses that unpack a range of unintended effects of contemporary DEI policies. A literature review of social psychology studies by Dover et al. (2020) identifies *de facto* signals that common diversity initiatives send to organizational members, signals concerning fairness, inclusion, and competence. Caleo and Heilman's (2019) wide-ranging review of studies identifies processes that undermine three common diversity efforts designed to counter gender bias. These efforts – diversity training, emphasizing successes with diversity, and unbiased evaluation procedures – produce follow-on effects that sustain stereotyping and biased behavior and decisions.

In modeling these and other phenomena in the figures presented below, color coding signifies three differing constructs: organizational elements (often, the nature of diversity policies); under-represented group members; and members of the organization's workforce in general. Solid lines in the figures represent the findings from the cited research studies, while dashed lines represent our attempted identification of feedback loops based on other bodies of empirical research, adding dynamics that depict reinforcing or defeating cycles operating over time.

To illustrate the types of dynamic phenomena creating resistance to DEI policies, Figure 4 models one set of findings from Caleo and Heilman's review: the effects of particular aspects of diversity training. These aspects produce a combination of intended and unintended effects through their influence on gender-based stereotyping. For instance (lower-left of Figure 4), training that emphasizes perspective-taking has been found to reduce gender stereotyping. However, training acknowledging group differences (upper-left of figure) reinforces attitudes that bias is normal and unconscious, reducing felt responsibility for having bias, thereby sustaining gender-based stereotyping. Several vicious loops proceed from the gender stereotyping (right side of Figure 4). One is that biased personnel decisions by managers constrain the number of women advanced to high level positions. When DEI policy highlights the success of those few women, members tend to interpret those high performers as atypical, sustaining their gender stereotypes of women generally not being as good as men at leadership. Further (right side of figure), if the organization spreads the few high-level women across the organization, they tend to be seen as tokens, increasing their anxieties and quit rates.

Fig. 4: Gender Stereotyping: Competing phenomena affect gender stereotyping and advancement to high positions over time

In similar models not presented here, we have identified a number of additional vicious loops based on Caleo and Heilman's and Dover et al.'s reviews. These dynamics, being based on findings from social psychological studies, cross-validate and explain the above-noted findings from longitudinal organizational studies – namely, that U.S. organizations have failed to improve equity through common diversity training and fair employment practices (Dobbin et al., 2015; Kalev et al., 2006).

The confounding overall finding from these two literature reviews is that explicitly-labelled DEI initiatives themselves reinforce attitudes that lead to discriminatory behavior, both overt and subtle, and to inequitable outcomes, such as lack of women advancing to executive

positions. These outcomes thwart common DEI efforts, yet many organizations continue with these efforts rather than diagnosing, revising, and augmenting their policies.

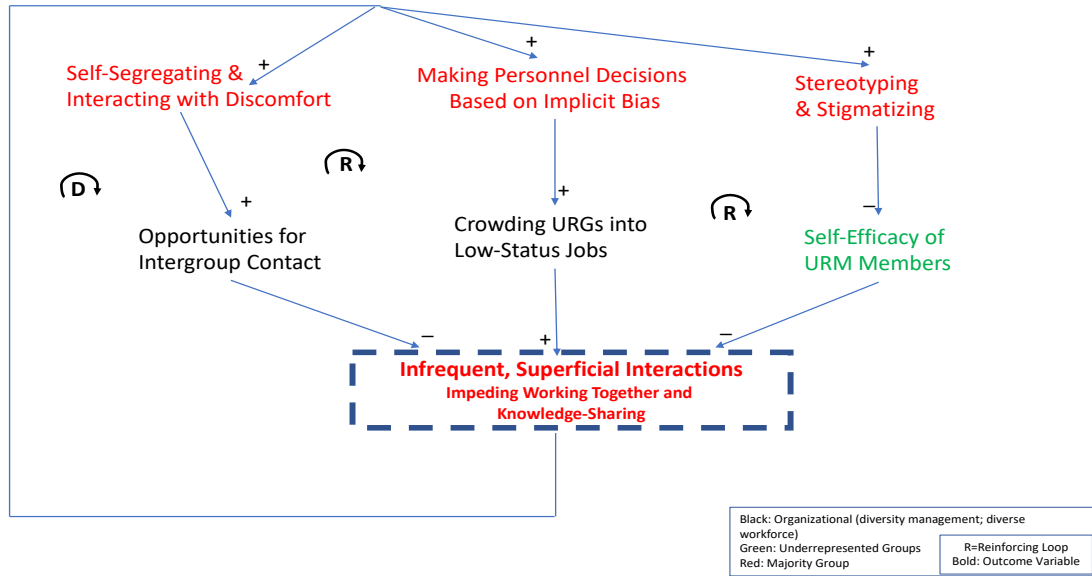<u>Modeling Organizational-Level Dynamics Driven by Three Common Social Practices</u>

The preceding models of unintended effects can communicate to organizational policy-makers and work unit managers how common DEI efforts produce unintended effects. To better understand and address these effects, policy-makers can draw on knowledge of problematic social practices that spill over into organizations from the broader society. A major insight is offered by labor economists finding that subtle discrimination produces greater inequities than does overt discrimination (Jones et al., 2016). This finding points to three inter-connected practices. First, with civil rights and legal compliance efforts over the past sixty years dampening overt acts of discrimination by motivating individuals to avoid acting racist and sexist, and avoid believing that they are biased, subtle discrimination explains much of the continuation of employment discrimination as residing in *implicit bias* (Kurdi et al., 2019). This largely unconscious bias can produce inequitable personnel decisions through *stereotyping and stigmatizing* of underrepresented groups by individuals of any gender and race/ethnicity who are not consciously aware of their bias and seeking to control its effects. A systematic meta-analysis of research finds that stigmatizing is highly consequential, not only lowering others' performance assessments of under-represented group members but also lowering the self-efficacy and self-assessed performance of those members (Leslie et al., 2014).

Second, the finding on the strong effects of subtle discrimination is consistent with widespread beliefs, common even among some members of underrepresented groups, in meritocracy and in a general absence of racism and sexism in society. Unbiased interpersonal behavior and conscious thought can mask implicit bias, enabling individuals to make inequitable decisions without realizing that they are doing so. This social process accords with the audit studies' findings (Bertrand & Duflo, 2016) that employment discrimination is a current reality. That inequities continue due to subconscious, subtle discriminating and stigmatizing (such as in the form of micro-aggressions) takes into account contemporary realities – namely, there appears to be societal progress on inhibiting the most overt behavioral manifestations of bias, such as sexual harassment, but discrimination continues because organizations fail to provide managerial accountability for managers' final personnel decisions driven by bias (Castilla, 2008; Castilla, 2015). Implicit, subconscious bias also suggests the limitations of relying on legal compliance that rests on decision-maker intentionality.

Third, the restrictions and personal distaste for overt discrimination reinforces the natural human process of *self-segregating*. Individuals favor interacting with others similar to themselves (McPherson et al., 2001). The tendency to avoid differing others is heightened by prescriptions on inappropriate intergroup behavior, with majority group members experiencing greater awkwardness and uncertainty in their interactions with underrepresented members, leading the former to interact superficially and infrequently. For underrepresented members, the desire to self-segregate is heightened by experiencing stigmatizing and discrimination in interactions with majority group members.

To emphasize the dynamic quality of the above phenomena, we use the active terminology of self-segregat*ing*, stereotyp*ing* and stigmatiz*ing*, and mak*ing* decisions based on implicit bias. In our modeling of research-based evidence, these three categories of anti-inclusive social practices complement each other as they combine to produce superficial and infrequent intergroup interactions (Bowman, 2013). As modeled in Figure 5, the lack of meaningful interactions feeds back to sustain the three anti-inclusive practices.

Fig. 5: Three Ubiquitous Anti-Inclusive Practices of Contemporary Intergroup Contact

The above modeling of vicious dynamics, based on decades of empirical research findings, explains how organizational and societal progress on DEI has leveled off in recent decades and, for some groups, regressed. Combining what is known about the unintended, follow-on effects of current diversity efforts with findings on self-segregating, stereotyping, stigmatizing, and making personnel decisions based on implicit bias strongly suggests that contemporary diversity management efforts will continue to socially *reproduce* (Bourdieu, 1977) a lack of inclusion and equity in organizations. The entire set of problematic phenomena is highly complex and continually evolving. Figure 6 represents an admittedly simplified, but still complex, modeling of unintended effects and anti-inclusive practices undermining DEI policies. Additional models examine these three categories of anti-inclusive social practices, but due to space limitations are not included here.

Fig. 6: Negative Impacts on the Organization and its Members: Reinforcing Negative Behavior
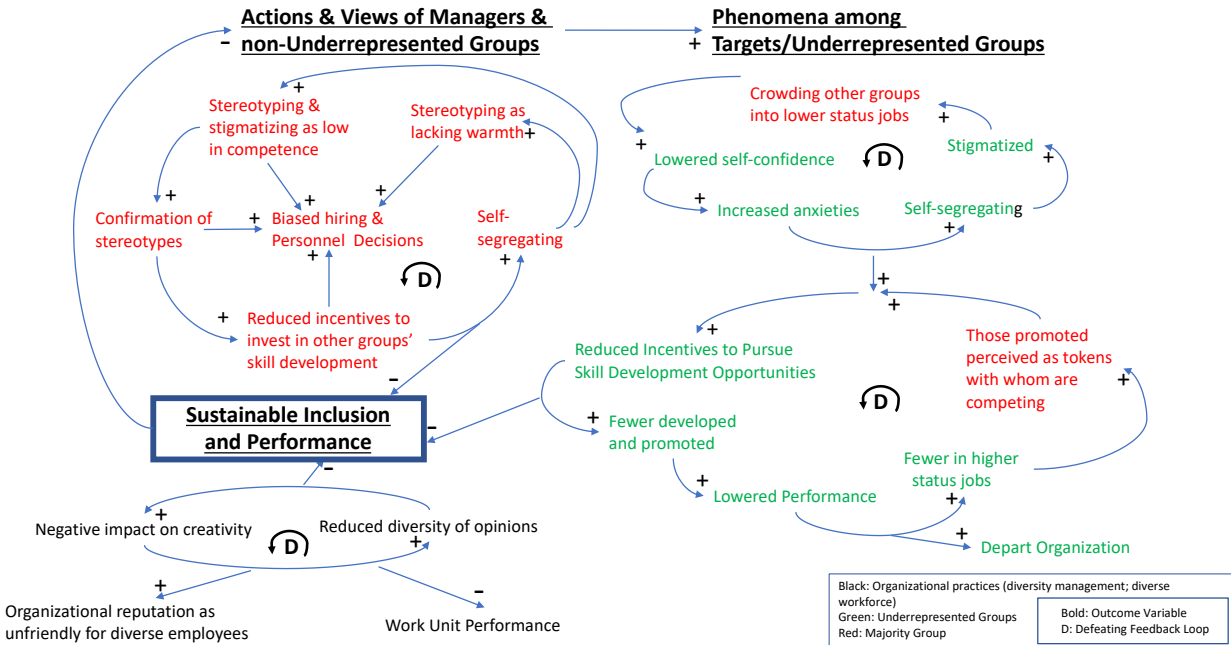
On the left-hand side of the figure, dynamics involving the behavior and attitudes of managers and majority group members stymie the achieving of a set of DEI goals labeled *sustainable inclusion* – principally, equity in developmental opportunities and rewards for individuals, and strong collective performance from a diverse workforce. The resulting lack of productive inclusion, characterized by infrequent, superficial intergroup interactions, constrains work unit performance by hampering knowledge-sharing and creativity. In addition, as modeled on the figure's right-hand side, the anti-inclusive practices affect the attitudes, performance, and decisions of underrepresented group members in ways that further lower inclusion and work unit performance.

MODELING DYNAMICS FOR DEI SUCCESS:
IDENTIFYING LEVERAGE POINTS BASED ON RESEARCH FINDINGS

Research findings point to pathways for success with inclusion, equity, and work unit performance through a leverage point of structuring intergroup contact, but these findings have not influenced contemporary DEI policies. Instead, the commonly-attempted but ineffective leverage point for DEI is to change individuals' attitudes, with many organizations relying on training sessions to make their members cognitively aware of bias and inappropriate behavior. The ineffective and even counter-effective impacts of mandatory diversity training on the advancement outcomes of underrepresented groups (Dobbin et al., 2015; Kalev et al., 2006) is explained by the research findings on unintended effects discussed above. Training is one among several DEI efforts that send signals that many organizational members interpret in ways that sustain vicious cycles. Further, training attempts to change attitudes directly, but individuals tend to resist such attempts.

In total, the various and complex social processes that sustain resistance to current policies can lead to a sense of futility and cynicism about the chances for effective change (Sterman, 2002b). Fortunately, a substantial, well-validated body of research points to a neglected leverage point, the direct interpersonal interactions of differing individuals, termed *diversity interactions* (Bowman, 2013). Since they represent opportunities to learn how to behave productively with differing others, the quantity and quality of diversity interactions are a key to achieving, or not, DEI goals. In contrast to the limitations of direct attitude change efforts, a long-standing body of social psychology research finds that changing individuals' behavior produces changes in attitudes. Through cognitive dissonance and over time, individuals tend to bring their attitudes in line with their actual behavior (Festinger, 1962).

Similar to cognitive dissonance, but more specific to diversity interactions, intergroup contact theory (Allport, 1954) posits that intergroup interactions produce reductions in prejudicial attitudes. Decades of research, analyzed in a continuing series of systematic literature reviews (Hewstone and Swart, 2011; Paluck, Green, and Green, 2019; Pettigrew and Tropp, 2006) support such prejudice reduction, even when the contact is experienced vicariously, as in reading a novel, or negatively, such as interacting with the homeless (Lee et al., 2004). However, the positive effects are stronger under particular social conditions surrounding the contact, such as engaging in collaborative activities. The strongest and most persistent effects stem from high frequencies of positively-experienced diversity interactions (Bowman, 2013). As discussed further below, we model such intergroup contact as leading to processes for a*daptive learning*, developing interpersonal comfort and reducing prejudices and stigmatizing, with these processes operating in virtuous cycles producing positive outcomes over time for underrepresented group members.

Compared to diversity training's demonstrated limitations, the reducing of prejudices through productive intergroup contact offers organizations a highly practical leverage point – namely, shaping interpersonal behavior through *structuring conditions* that cause interpersonal interactions among work unit members to be frequent and positive. As represented in Figure 1, we specify these conditions as being produced and sustained through *inclusive interaction practices*, social practices for inclusive interactions that work unit members follow habitually, bodily, and emotionally (Reckwitz, 2002). These workgroup practices apply to all members and all interpersonal interactions, not only to diversity interactions, thereby finessing the negative effects created by signals associated with explicit, prescriptive DEI policies.

Concentrating on this leverage point of organizational practices that favor frequent, positive intergroup contact, success in achieving inclusion, equity and performance from diversity can be framed as an ongoing contest pitting the inclusive interaction practices against the anti-inclusive practices of self-segregating, stereotyping, stigmatizing, and making decisions based on implicit bias, as depicted in Figure 7.

**Fig. 7: Competing Processes for Inclusion and Equity**
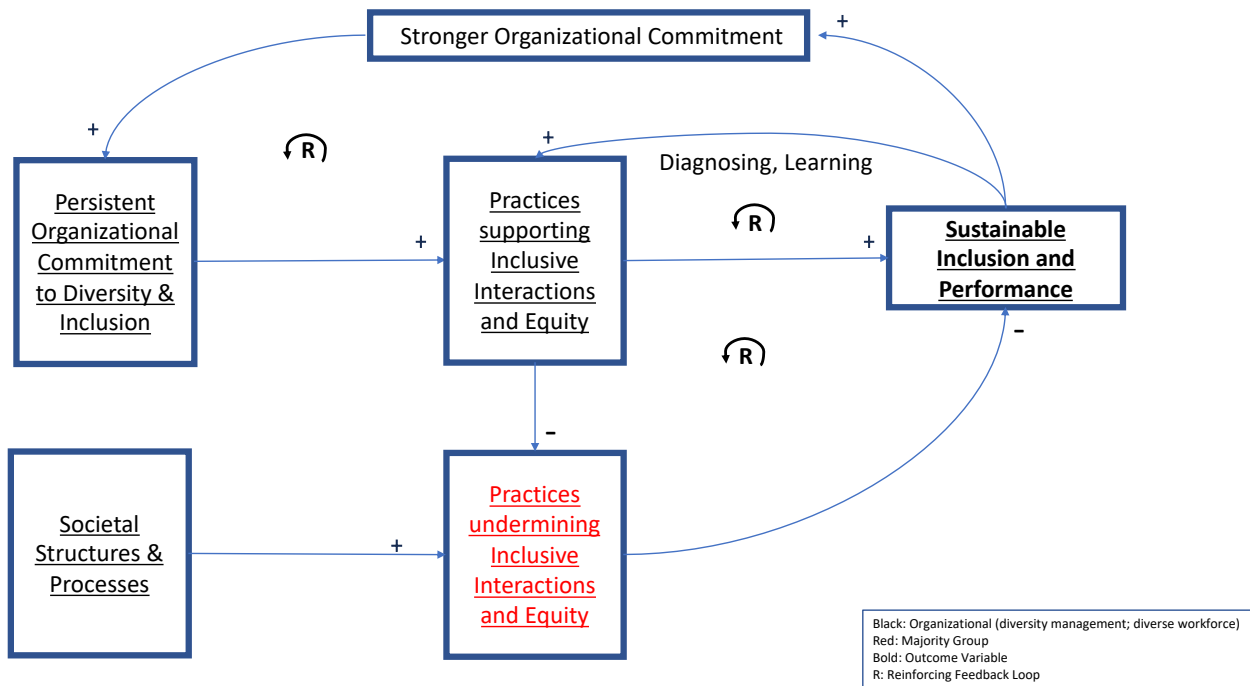
Adaptive learning occurs when inclusive interactions win the contest depicted in Figure 7. As modeled in the overall Framework (Figure 1) and discussed further below, the learning occurs with a delay and drives a reduction in prejudices (stereotyping and stigmatizing) that sustains work-productive inclusion and equity. Three additional sets of organizational practices, depicted at the top of the Framework figure, further shape organizational members' behavior to be inclusive and equitable, those for Socialization, Behavior Accountability, and Outcomes Accountability. We model these four sets of practices for inclusion and equity in turn.

Structured Inclusive Interaction Practices (Figure 8). The large body of research on intergroup contact and our own research (Authors, Year) point to intergroup contact being particularly effective in the presence of six habitual practices. These *inclusive interaction practices* – structured by organizational leaders and managers – are: 1) pursuing a shared task orientation or mission; 2) mixing members frequently and repeatedly; 3) collaborating with member interdependence; 4) handling conflict constructively; 5) exhibiting internal comfort and self-efficacy; 6) and ensuring equal insider status for all members. These six represent a set of mutually-reinforcing practices that sustain meaningful, productive interpersonal behavior. They can be promoted by managers as means to improve mission performance.

Combined with applying the inclusive interaction practices to all work unit members, promoting them for performance improvement rather than DEI reduces the negative, undesirable reactions of heightened prejudices and stereotype threat (Spencer e al., 2016) that follow from prescriptive DEI efforts. Instituting inclusive interaction practices that boost performance produces behavioral change toward members of underrepresented groups as stereotypes are challenged through repeated positive interactions and productive performance outcomes. As modeled on the right side of Figure 8, the resulting reduction in prejudices and stereotype threat

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to women and minority group members contributes to their performance being judged more positively by themselves and others, leading them to receive more equitable opportunities and rewards. With such prejudice-reducing, equity-improving, and performance-enhancing effects, the six practices for inclusive interactions reinforce one another in a virtuous cycle.

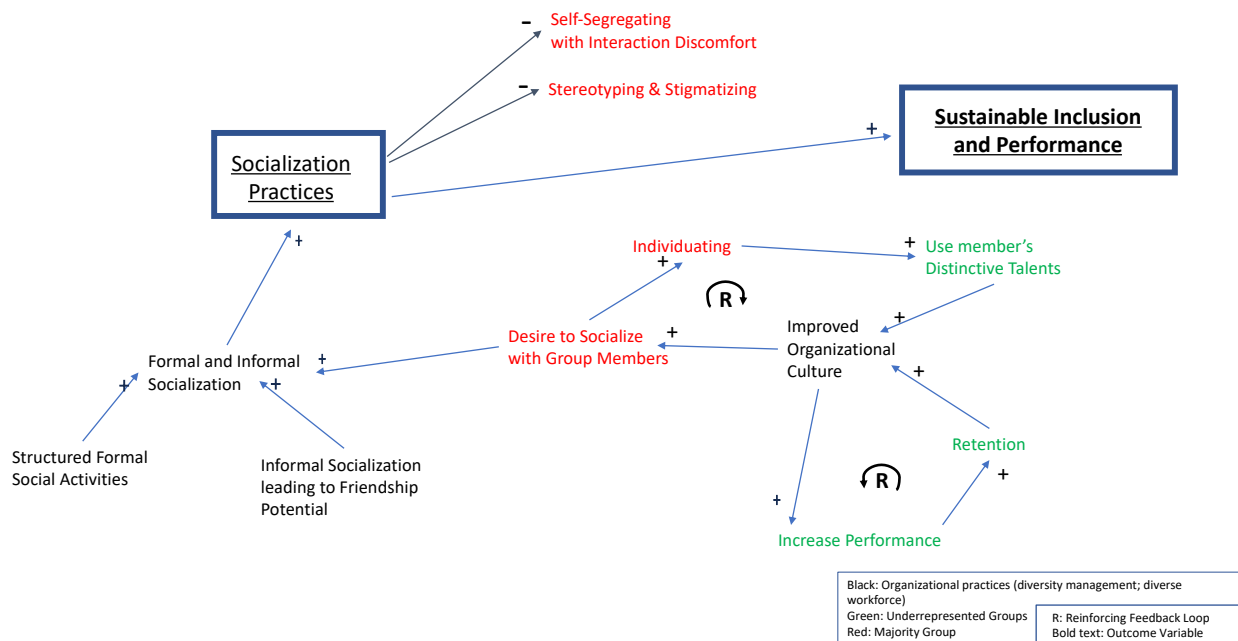**Fig. 8: Structuring Inclusive Interactions Practices**
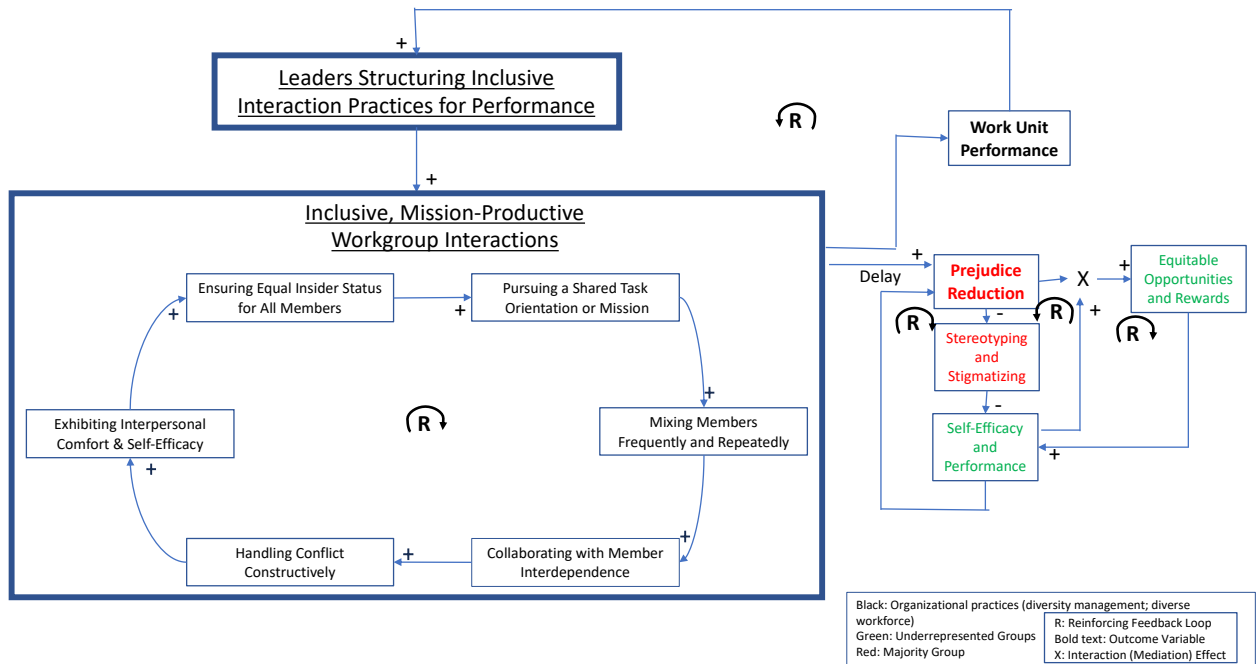
In interviews we conducted in a variety of settings across the business, nonprofit, and governmental sectors, interviewees noted, gratefully, that being in diverse workgroups "forced" them to interact with diverse others. In hindsight they were grateful to have experienced positive, behavior-altering, inclusive interactions over extended periods of time.

For the processes in Figure 8 to flourish as virtuous cycles, we find in our case studies that managers and workgroup leaders achieve inclusion and equity using forms of inclusive interaction practices that are customized to their context and, often, promoted by leaders without any reference to diversity. We model the effects of such well-aligned, customized practices later in a discussion of these cases.

Socialization Practices. Figure 9 depicts the value of workgroup members engaging socially with comfort. Formal and informal socialization of new members has been found to improve workgroup culture while increasing retention and performance (Bauer et al., 2007). Personal identity socialization is a particularly powerful practice (Cable et al., 2013). Asking each new member to specify the distinctive skills and knowledge they bring to the workgroup reinforces the identifying and valuing of _work-related_ differences. As members participate in such socialization practices, they build familiarity, mutual respect, and trust that enables them to overcome interaction discomfort and the desire to self-segregate, thereby reducing the stereotyping and stigmatizing of unfamiliar others.

Fig 9: Socialization Practices

Black: Organizational practices (diversity management; diverse workforce)
Green: Underrepresented Groups
Red: Majority Group
R: Reinforcing Feedback Loop
Bold text: Outcome Variable

Behavior Accountability Practices. These practices shaping interpersonal behavior (Figure 10) reflect the importance of behaving respectfully toward one another, avoiding stigmatizing. The practices complement those for inclusive interactions (above) and apply to all work unit interactions, not to diversity interactions only. Achieving accountable behavior may require developing a code of conduct to support practices for calling out those who do not comply and, as included in inclusive interaction practices above, for constructively resolving conflicts. Over time, as individuals become accustomed to the socially embedded behaviors of the workgroup, they interact more comfortably and willingly. As stereotyping and stigmatizing are reduced, the work unit culture and performance outcomes are enhanced.

Fig 10: Behavior Accountability Practices
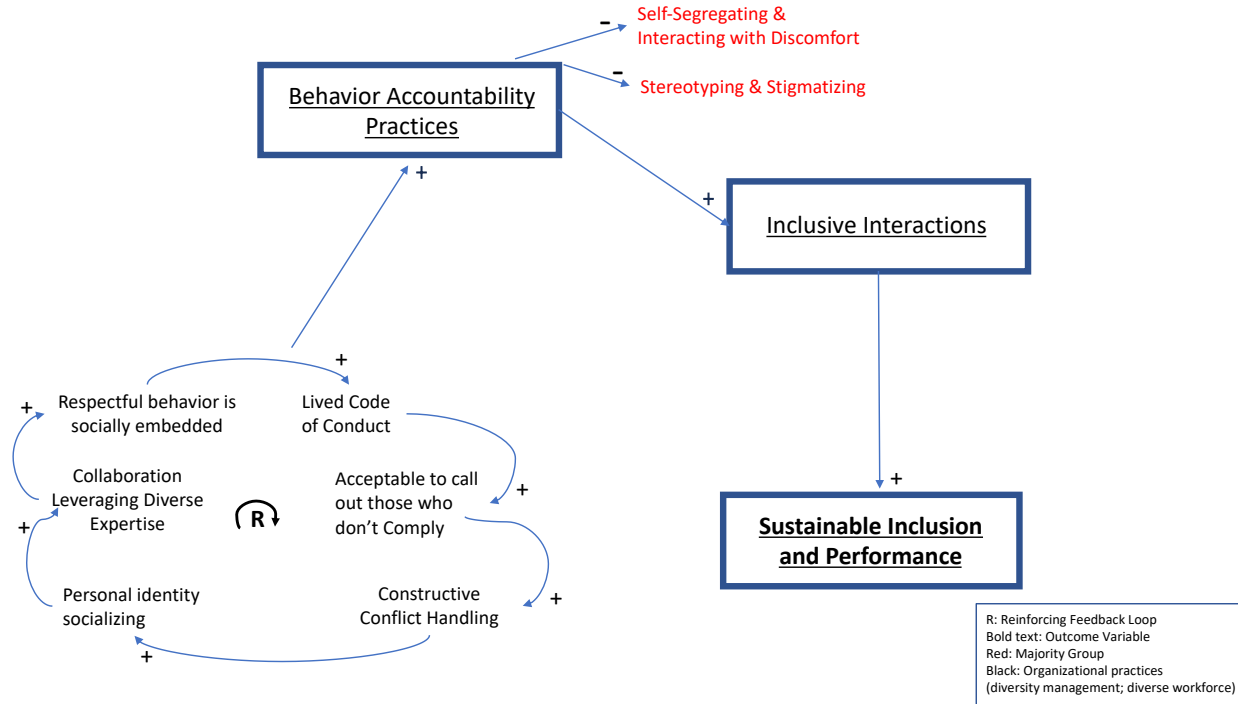
Outcomes Accountability Practices. These practices address improving equity for all organizational members. They include fair employment practices covering procedures for recruiting, hiring, compensation, development opportunities, and fair appraisals. However, managers typically have final discretion for making personnel decisions on pay, career development opportunities, and promotions, and typically, they lack accountability for those final decisions (Castilla, 2008). In the face of implicit bias, managerial accountability is required to ensure equity. The challenge is "a systemic tendency on the part of human beings to avoid accountability for their own decisions" (Meadows, 2008, p. 157), causing accountability system malfunctions, such as the unintended effects modeled earlier concerning reactions to explicit DEI policies.

To avoid such policy resistance, an evidence-based practice for outcomes accountability (Figure 11) is assigning a standing task force of operating managers to monitor the personnel outcomes resulting from decisions made by themselves and their colleagues (Dobbin and Kalev, 2016). Initiating such accountability for final decisions is found to reduce over time the pay gap for underrepresented group members (Castilla, 2015). Engaging task force members in behavior that pursues equity leads to reduced bias, as their attitudes are brought into line with this behavior to avoid cognitive dissonance. Subsequently, as we found in the case of a science research unit, the task force's members model inclusive behavior and attitudes that influence their peer managers.

Fig 11: Outcomes Accountability Practices to Counter Stereotyping, Stigmatizing, and Biased Personnel Decisions

Black: Organizational practices (diversity management; diverse workforce)
Green: Underrepresented Groups
Red: Majority Group
Bold text: Outcome Variable
X: Interaction (Mediation) Effect

Adaptive Learning

As modeled in the overview Framework (Figure 1), when anti-inclusive practices are overcome by inclusive practices, adaptive learning occurs. With a delay, work unit members gradually learn skills for interacting with differing others. The learned skills mitigate awkwardness and superficiality to produce greater respect and satisfaction in diversity interactions. As the workgroup members engage in meaningful inclusive interactions over time, a virtuous cycle develops. Members change their behaviors to comply with the various inclusive, productive practices. Their prejudices then gradually change as they bring their attitudes into line with their behavior. Members from all backgrounds are able to learn from one another as they collaborate and perform better as a group. Underrepresented group members, being included and respected rather than stigmatized, experience increased self-efficacy and trust in their colleagues. As the members learn from one another and become more comfortable interacting together, they are willing to interact more and continue to learn. This virtuous cycle of adaptive learning contrasts with the vicious cycle imported into the organization from the broader society wherein anti-inclusive practices produce infrequent, superficial interactions that further reduce inclusion and, ultimately, performance.

Adaptive learning, then, is the key change process occurring over time, central to reducing prejudices by group members learning about, and from, one another (Figure 12). The adaptive practices of spending time together, self-disclosure, and developing positive emotional ties build on one another, supporting further inclusive interactions and adaptive learning in a virtuous cycle. As a result, the anti-inclusive practices—self-segregating and interacting with discomfort, relying on implicit bias, and stereotyping and stigmatizing—are mitigated. Workgroup members' positive experiences in direct interactions reduce their interpersonal anxieties, leading to more personalized, meaningful, and prolonged interactions that are informal

as well as formal. Members are increasingly willing to interact with other members of the group whom they initially perceived as different. Socialization practices and informal interactions lead to friendships with selected others, with familiarity increased through self-disclosure. This likelihood increases as the workgroup collectively follows adaptive processes – learned behavioral skills – that produce more positive emotions of greater respect and satisfaction, even when those interactions involve critiques and problem-solving (Ahmad and Barner-Rasmussen, 2019; Weisinger and Salipante, 2000). At the workgroup level, as trust is built, members are unafraid to offer their perspectives. More information is elaborated (van Knippenberg et al., 2004) and knowledge shared, impacting work unit functioning for better performance.

Fig. 12: Adaptive Practices, Learning, and Unit performance
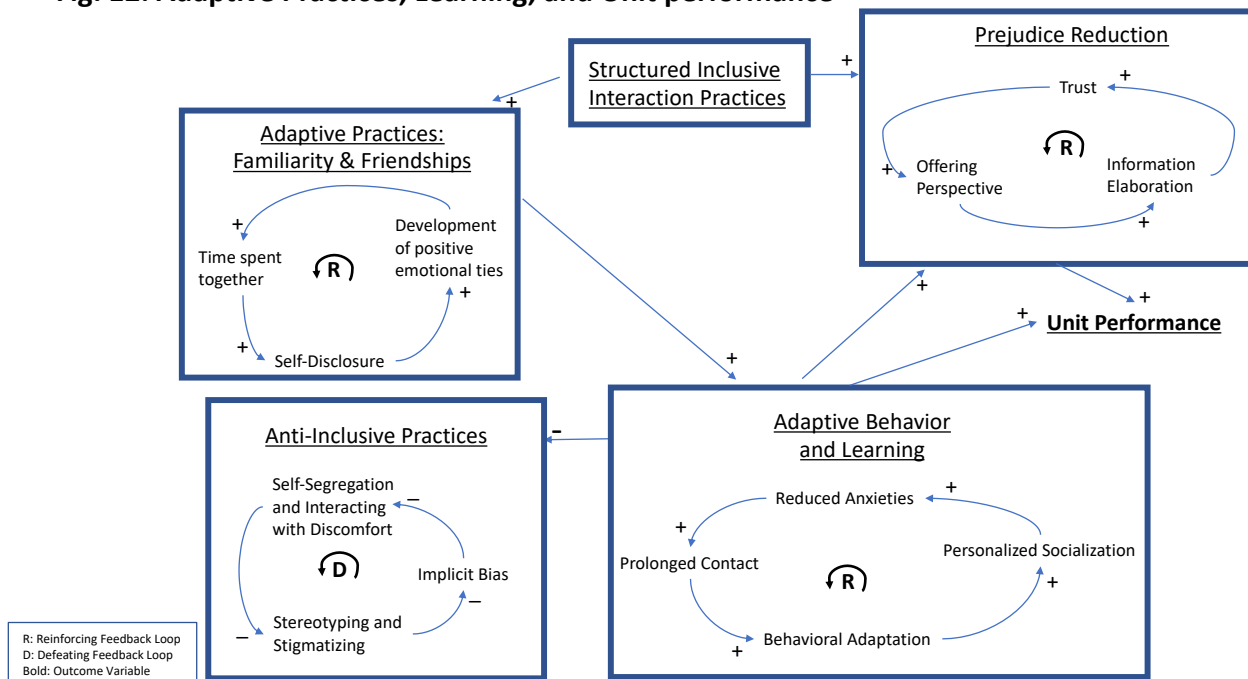
ILLUSTRATIVE CASES OF SUCCESSFUL INCLUSION, EQUITY, AND PERFORMANCE

Figure 13 models an organizational case – a research unit performing and publishing clinical research in an elite medical center – illustrating the practicality of instituting performance-enhancing practices that result in inclusion and equity. The practices detailed in the figures are members of the four sets of inclusive practices outlined above, and they are customized to the mission, task goals, and other characteristics of the organizational unit. Evolving and operating dynamically over extended periods of time, the practices achieved inclusion and equity. The director of the unit structured inclusive interaction practices in several, mutually-reinforcing forms. For example, a strong mutual goal focus was reinforced by the director regularly asking unit members to recite the mission, ensuring that the mission was embedded in all layers of the unit. Collaboration and socialization were facilitated by the director when he insisted that the unit's facility design had offices with glass doors and a kitchen with an eating space for lunches and meetings. These physical features supported frequent and repeated informal mixing of the unit members. The director further stressed an expectation of fair

treatment beginning with new-member on-boarding. Finally, within this unit, existing members, accustom to the expected behaviors, acculturate new members.

The medical research unit demonstrated self-organization (Meadows, 2008), the power of a manager and workgroup members to initiate, add, change and evolve interaction practices. They were able to create new structures and behaviors that did not need to conform to those common elsewhere in the organization. Such performance-enhancing self-organization involves changing any aspect of a system, including balancing or reinforcing loops and new social interaction rules. The ability to self-organize is the strongest form of resilience. In contrast, insistence on a single culture shuts down learning and inhibits resilience. For an organization's top leaders, the relevant leverage point here is encouraging variability and experimentation in productive, inclusive organizing.

Fig 13: Medical Research Unit Case
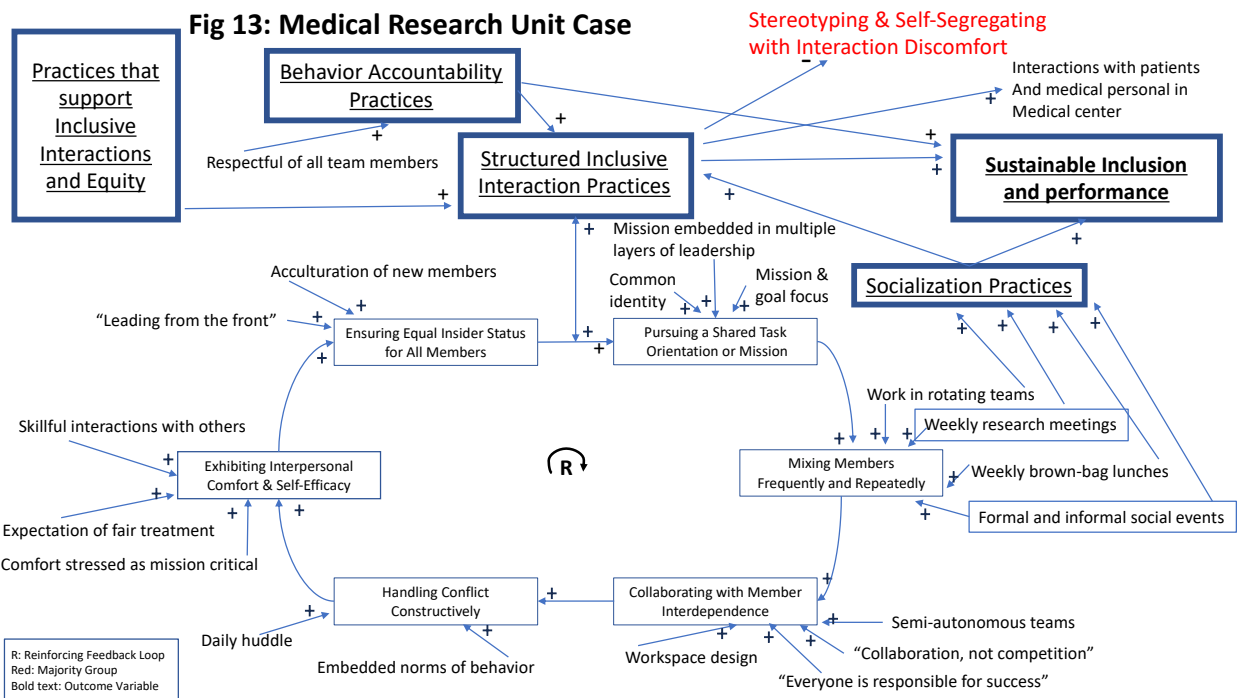
Figure 14 examines how a service fraternity operating on many US college campuses achieves inclusion and equity. The service fraternity emphasized three goals, service, leadership, and fellowship, but it is the mission of performing volunteer community service that created a common identity among the members. As new members joined, they were socialized and "forced" in a friendly way to interact with all other members frequently and repeatedly through structured fellowship activities, weekly organizational meetings where members sat in a circle to discourage clique formation, and the requirement for new members to interview all existing members. Mixing and collaboration occurred when members showed up to work on community service projects, not knowing who they would be partnered with, and when they worked on large annual service projects. Rotating leadership positions ensured equal status for all members, and the expectation of self-disclosure and respect for one another led to interpersonal comfort and self-efficacy.

The organization's inclusive interaction practices fit our general categorization but, as in the medical research unit, were customized to the organization's goals. Its inclusive practices explain why this service fraternity was singled out by campus administrators as a place where diverse individuals interacted well together, leading to cross-ethnic and cross-cultural friendships which were otherwise often limited on their campuses. The national organization was surprised to learn of this impact since the inclusive interaction practices of its chapters were not pursued for DEI purposes but, rather, for its mission of service and its core values of fellowship.

Fig 14: Service Fraternity Case
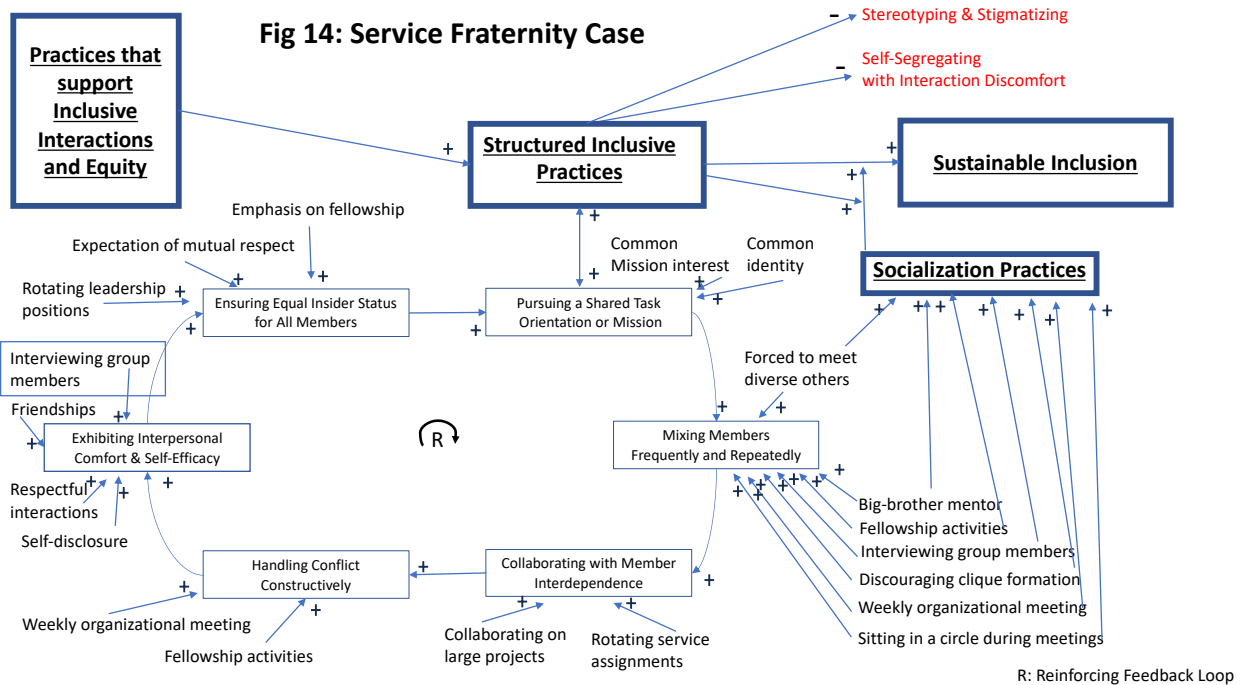
Many other cases, we examined and modeled, not included here, further illustrate successful implementation of structured inclusive interaction practices to drive inclusion, equity, and performance.

LESSONS FOR POLICY-MAKING FROM MODELING OF DEI'S SYSTEM DYNAMICS

Due to anti-inclusive practices carried into the organization from the broader society, limited attainment of inclusion, equity, and performance from diversity is the default that policy-makers can expect in the absence of counter-vailing organizational efforts. Successfully shaping members' social practices that support inclusion and equity rests on the diagnoses, decisions and actions of policy-makers and managers. Their diagnoses and actions benefit by being aware of the competing forces over time of inclusive and anti-inclusive practices and, consequently, the need for policy persistence (Figure 2).

The modeling presented in the various sections above communicates a variety of understandings for policy-makers concerned with the basic issue presented at the beginning of this paper: Why has progress on DEI stalled? Combining effects from the models above provides

fuller explanations for lack of progress. However, communicating the combined effects in two-dimensional models is difficult, due to the many connections.

The foregoing models of various DEI phenomena indicate how interpretations are sustained that accept inequalities as natural and acceptable. For example, one explanation of employment inequalities is that they are due to personal choices, such as women choosing to attend to family over career. System dynamics involving stereotyping and bias in personnel decisions serve to reproduce such personal choice explanations. Consider personal choice in the presence of inequities. If lower employment rewards are perceived by underrepresented group members as due to discrimination, there exists little economic incentive to make occupational and career investments whose payoffs depend on employers' decisions. Alternatively, if they perceive their lower rewards to be a meritocratic result of lower capabilities, they are similarly less likely to invest in career development. Consequently, observed group differences in qualifications can be interpreted by onlookers as personal choices that explain inequalities, but in reality, the group disparities have as one important underlying cause the operation of bias and inequitable rewards. In this way and others, stereotyping is not only imported into the organization from the broader society, it is also exported from the organization to the society. The societal and organizational dynamics are mutually reinforcing.

These discussions capture only some of the phenomena modeled earlier that reproduce stereotyping, associated inequities, and beliefs in meritocracy. Knowledge of the various phenomena involved in producing unintended effects can inform policy-makers operating in a particular organizational context, enabling them to be aware of the nuances of powerful system dynamics as they attempt to diagnose shortfalls in DEI efforts (Figure 2). They can then consider how best to initiate and evolve in their context the four sets of inclusive practices specified in our Framework, with particular attention to inclusive interactions at the work unit level, to interrupt the reproduction of stereotyping and inequities in rewards and advancement. The Framework recognizes, through a feedback loop, the need to pay constant attention to inclusive practices and nurturing the work environment. Otherwise, adaptive learning will be undermined by the self-reinforcing feedback loops involving the anti-inclusive practices constantly supported by external societal structures and processes.

A Leverage Point: Emphasizing Work Unit Performance Via Inclusive Interaction Practices

The preceding analyses lead to a leverage point and a path forward for achieving DEI that differs substantially from current DEI efforts. The core implication of research and modeling identifying the unintended effects of common DEI policies is that policy revision is needed that somehow avoids, greatly minimizes, or counters the self-fulfilling, policy-resistant interpretations that explicit DEI policies trigger among many workforce members. Those interpretations sustain self-segregating, stereotyping, stigmatizing, and making decisions based on implicit bias. As discussed above, bodies of research tell us that attempts within organizations to change negative attitudes directly, as through diversity training, have proven ineffective or counter-effective, a finding that is consistent with the ubiquitous operation of implicit, largely subconscious bias. Consequently, the challenge is to achieve the goals of diversity, equity, and inclusion through less direct methods, adopting methods that concentrate on effective means rather than on direct attacks against undesired ends.

Consistent with a history of system dynamics analyses leading to solutions residing in changed operational structures and processes, the above modeling of research findings points to the neglected leverage point of structuring work practices that lead to strong unit performance through frequent, productive member interactions. Here, we highlight a key aspect of this effective structuring – its *explicit emphasis on unit performance rather than on DEI goals*. As found in several of the cases reviewed above, sustaining productive diversity interactions results from structuring productive, respectful interactions among <u>all</u> members. In a Silicon Valley case, we found that organizational leaders in a large technology firm, over time, had learned that workgroup tensions impeded project success. Consequently, they emphasized behavior accountability among all members to achieve team performance. Such an emphasis on performance-favoring practices that involve all unit members has positive impacts on diversity interactions without singling out those interactions and triggering undermining interpretations, as do direct DEI efforts.

The inclusion-undermining interpretations that follow from explicit DEI policies threaten the effectiveness of some formal mentoring, championing, and support group practices for underrepresented groups. Support groups within organizations have been found to benefit the advancement of women but to harm that of Black men (Kalev et al., 2006). To avoid such backlash effects, one solution is for support groups to operate outside of the work organization, through informal networks or community-based organizations. And, networking and championing within the organization can be decoupled from explicit DEI efforts through the performance-motivated structuring of inclusive practices, such as collaboration and cross-job training. These practices create new networks of informal personal relationships across organizational levels, improving the advancement of underrepresented group members.

Support for this work structuring, performance-based approach comes not only from case studies but also from the above-cited longitudinal quantitative analyses of major U.S. companies finding that cross-job training and self-directed work teams lead to improved advancement of underrepresented groups (Kalev, 2009). An informative parallel is agile teams in software development (Dyba & Dingsoyr, 2008), adopted to provide superior performance. These teams utilize many structured interaction processes – such as the collaborative, mixing process of pair programming, with two members developing code together (Hummel et al., 2015) – that match the six inclusive interaction practices identified above. That is, inclusive practices that are promoted and adopted on the basis of improved unit performance are a means to improve inclusion and equity for members of underrepresented groups. The bottom-line requirement is that the practices apply to and provide inclusion for all members, including those from underrepresented groups.

Ongoing Policy Persistence and Revision

A major accountability failure is that contemporary DEI policy-making ignores the research-based evidence that many current DEI policies are ineffective, and have been for decades, with some policies hurting, rather than helping, the employment outcomes for underrepresented groups. What accounts for organizations persisting with DEI policies that produce limited and eroding success? An answer offered by some is that leaders simply "check

the box" of pursuing commonly accepted DEI policies, based on legal compliance and public relations concerns. System dynamics suggests additional answers. Individuals tend to rely on simplistic causal models that postulate a single effect of an action (Sterman, 2006). And, in approaching any complex system, individuals make decisions based on the information they have at the time, lacking perfect or complete information (Simon, 1996), often leading to poor decisions. The decisions are often based on recent experiences, "rather than long-term behavior," inhibiting behavioral changes that would occur if more complete, timelier, and better information were utilized (Meadows, 2008, pp. 107-108). This results in living with faultily-made choices and changing behavior only when forced to do so.

The Framework above highlights the significance of designing effective practices for inclusion and equity by identifying and attending to system dynamics, including information gained from feedback loops. However, when designing at any one point in time, "The information delivered by a feedback loop can only affect future behavior; it can't deliver a signal fast enough to correct behavior that drove the current feedback" (Meadows, 2008, p. 39). This means there will always be delays in responding. As noted earlier in Figures 2, diagnosing, designing, and implementing is a continuing process, with each learned redesign of practices likely to lead to both the desired intended effects and unwanted policy resistance, as in the multiple unanticipated, unintended effects modeled in Figure 4. Consequently, as in many areas of managerial concern, persistent commitment to diagnosing and redesigning is required to gradually produce and sustain desired results.

Interviews of workgroup members and consultants working with diversity revealed that approximately six months is needed for stereotypes to be challenged and attitudes to change (Authors, Year). This time delay is necessary for such a complex system's behavior. Leaders can keep in mind that "changing the length of a delay may utterly change the behavior" (Meadows, 2008, P. 104) of a system. Since member resistance and awkwardness can be expected with any changed workgroup practice, it is valuable for leaders, as in the medical research unit case, to periodically convey commitment and provide short-term, positive feedback to workgroup members on the developing success of the new practices (Repenning & Sterman, 2002), sustaining commitment to further improve inclusive, productive practices (Figure 15).

Fig. 15: Time Graph showing Decline of Anti-Inclusionary Forces as Adaptive Learning Increases

Impact of
Anti-Inclusionary
Forces

Adaptive Learning

About 6-Months
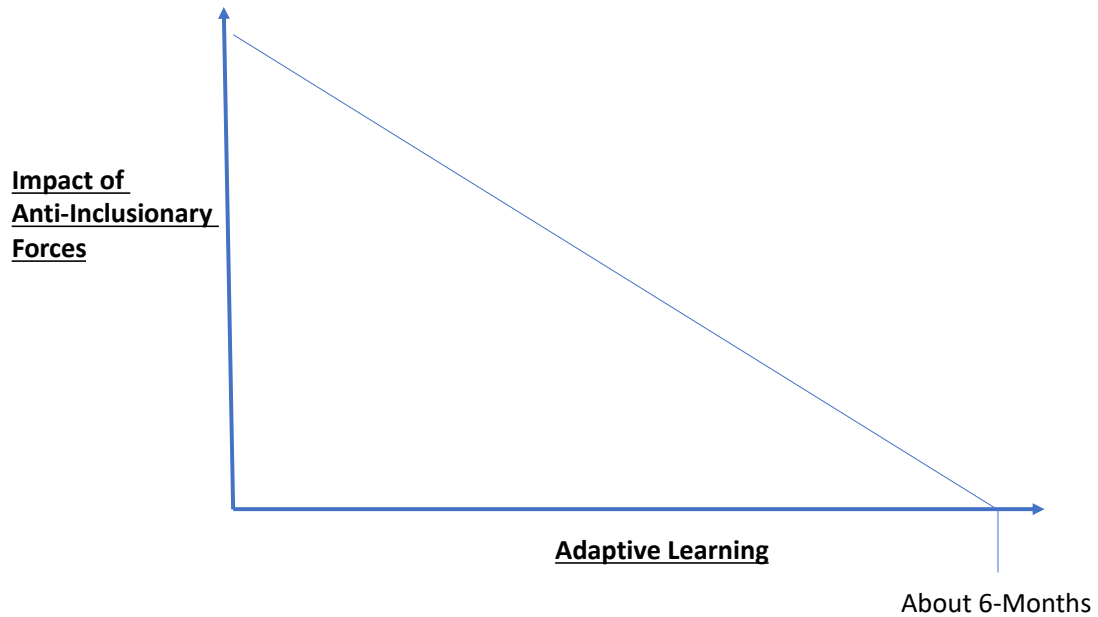
Delays in effects are central to system dynamics since they carry implications for the timing of policy actions. The concept of delays provides a way for policy to cope with a paradox: Outcomes accountability practices appear necessary to identify and deal with bias in final personnel decisions on pay, development, and promotions, yet monitoring outcomes for equity with diversity is an explicit DEI initiative that, as discussed and modeled (Figure 4) above, produces unintended effects that sustain stereotypes and implicit bias. We propose one way to address the paradox: initially, take advantage of the other three sets of inclusive practices, as depicted in Figure 16, and delay practices for outcomes accountability until the first three practices produce prejudice reduction. The three practices – those for inclusive interactions, socialization, and behavior accountability – can be promoted on performance goals rather than diversity goals and applied to interactions of all members. Per Figure 2, the three practices can be refined until meaningful reductions in prejudices are being achieved. At that point, with managers' personnel decisions becoming less biased, practices for outcomes accountability can be initiated and sustained through a standing task force of managers.

Fig. 16: Practices for Inclusive Interactions, Equity, and Performance

Bold: Outcome Variable
X: Interaction (Mediation) Effect
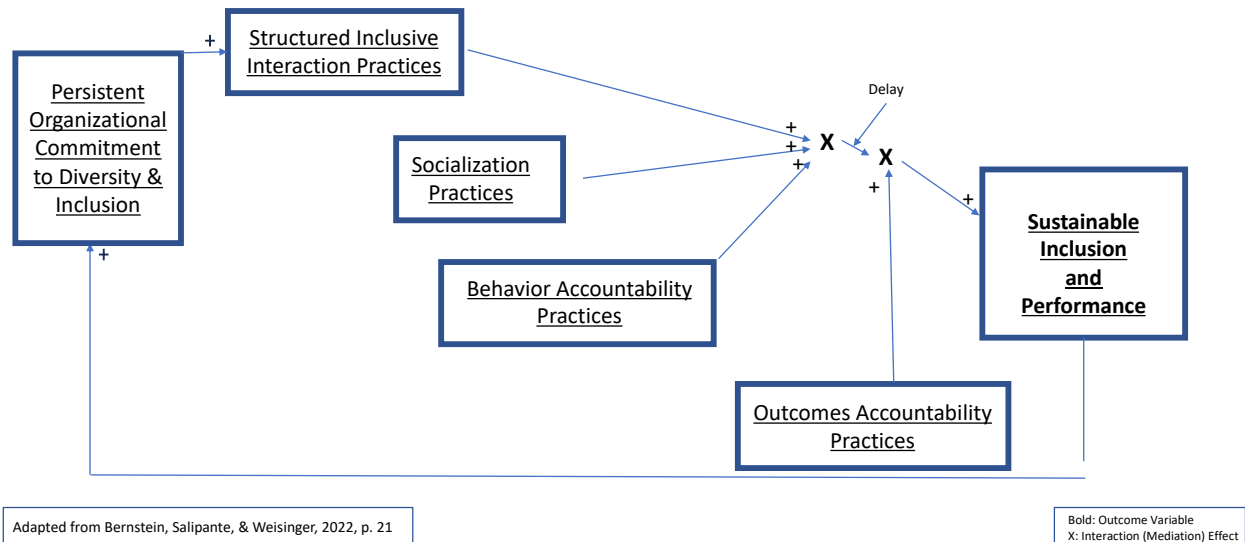
LEVERAGING MODELING FOR DEI AND PERFORMANCE: FUTURE PRACTICE AND RESEARCH

Our attempts to use systems dynamics modeling to better understand the persistence of DEI problems and identify leverage points for policy success have led us to several conclusions:

(1) A large body of research from many fields of study demonstrates the dynamic complexities of DEI phenomena, explaining policy resistance and the reproduction of problems over many decades.

(2) System dynamics models based on research evidence can match the complexity of DEI systems' wicked problems and suggest points of leverage. System dynamics modeling encourages the specification of dynamics typically lacking in DEI research.

(3) Looking across their various disciplines, scholars can use system dynamics modeling in their individual studies and in transdisciplinary syntheses of research to generate empirically-based knowledge that properly conveys DEI's dynamic complexities and identifies leverage points.

(4) Taking a systems dynamics perspective, policy-makers can acknowledge limitations in contemporary DEI approaches and apply research-based knowledge to diagnose DEI shortfalls and persist in addressing unintended effects.

(5) Forming the detailed dynamic complexities of DEI into a single system dynamics model proved beyond our capabilities and may be unnecessary for guiding effective

DEI policies. Rather, simplified overview models and break-out sub-models, as presented here, may provide adequate guidance for the persistent, customized policy revision necessary for any one organization. Modeling case studies provides insights on customizing options.

To the knowledge produced by a system dynamics perspective on DEI research, organizational policy-makers can add local knowledge of their organization and its members, periodically gathering feedback, diagnosing dynamics causing DEI policy resistance in their settings, and using the resulting insights to revise and implement their policies. In doing so, they may choose to augment scholarly-produced knowledge by utilizing participatory model-building exercises that draw on organizational members' knowledge of their immediate systems, as has been described and analyzed in systems dynamics literature (Vennix, 1999).

Across the many academic disciplines that study DEI phenomena, we could find little research that has taken a system perspective or investigated dynamics driving the reproduction of DEI problems over time. In our case, the Framework in Figure 1 was developed over several years, drawing on a program of research involving thematic analysis of interviews in qualitative studies, data analysis in quantitative studies, and synthesis of literature reviews from several academic disciplines (Authors, Year). It became apparent to the authors that applying systems dynamics modeling would enable a deeper look into the positive and negative components driving the attainment of sustainable inclusion, equity, and work unit performance over time. The research and systems modeling processes enabled us to identify the *reinforcing* feedback loops that positively or negatively amplify change over time, creating virtuous or vicious cycles. Our modeling of the virtuous dynamics of the four sets of practices for inclusion, while based on research evidence, is not a definitive claim of causality. Rather, it is a call to researchers and organizational leaders to incorporate and evaluate a combination of these promising practices in diversity initiatives. Much literature has identified the value of understanding system dynamics and virtuous and vicious feedback loops to diagnose the behavior of a system and, for policy action, identifying where to intervene to support positive change and limit negative change (Barlas, 2002: Hovmand et al., 2012; Rouwette et al., 2011; Sterman, 2006; Vennix, 1999).

In view of this literature, it is surprising that systems dynamics methods have been so little used to better understand and tackle the persistently wicked problem of achieving sustained inclusion, equity, and performance from diversity. Future research studies can continue the recent innovative efforts to probe the unintended, follow-on effects of a variety of DEI policies. Studies can also inquire into leverage points that mitigate dynamics reproducing exclusion, inequity, and diminished performance. Further, and perhaps of greatest value, system dynamics provides a tool for scholars to synthesize findings across the many academic disciplines, producing evidence-based models that communicate to leaders insights into dealing successfully with diversity's complexities.

Recent research on intended and unintended dynamic effects of contemporary policies offers hope that more inquiry and policy practice will deploy and benefit from a system dynamics perspective. We invite those who have applied system dynamics to complex problems in other fields to help guide its application to issues of diversity, equity, inclusion, and performance.

REFERENCES

Ahmad, F. and Barner-Rasmussen, W., 2019. False foe? When and how code switching practices can support knowledge sharing in multinational corporations. *Journal of International Management*, *25*(3), p.100671.

Allport, G. W., 1954. The nature of prejudice. Addison-Wesley.

Amis, J.M., Mair, J. and Munir, K.A., 2020. The organizational reproduction of inequality. *Academy of Management Annals*, *14*(1), pp.195-230.

Barlas Y., 2022. System dynamics: systemic feedback modeling for policy analysis. In: Knowledge for sustainable development - an insight into the encyclopedia of life support systems. Paris: UNESCO-Eolss Publishers, pp. 1131–75.

Bauer, T. N., Bodner, T., Erdogan, B., Truxillo, D. M., & Tucker, J. S. (2007). Newcomer adjustment during organizational socialization: a meta-analytic review of antecedents, outcomes, and methods. *Journal of applied psychology*, *92*(3), 707.

Bertrand, M. and Duflo, E., 2017. Field experiments on discrimination. *Handbook of economic field experiments*, *1*, pp.309-393.

Bleijenbergh, I., & Van Engen, M. (2015). Participatory modeling to support gender equality: The importance of including stakeholders. *Equality, Diversity and Inclusion: An International Journal*, *34*(5), 422-438.

Bourdieu, P., 1977. *Outline of a Theory of Practice*. No. 16. Cambridge university press.

Bowman, N.A., 2013. How much diversity is enough? The curvilinear relationship between college diversity interactions and first-year student outcomes. *Research in Higher Education*, *54*, pp.874-894.

Brannon, T. N., Carter, E. R., Murdock-Perriera, L. A., & Higginbotham, G. D. (2018). From backlash to inclusion for all: Instituting diversity efforts to maximize benefits across group lines. *Social issues and policy review*, *12*(1), 57-90.

Buckman, S.R., Choi, L.Y., Daly, M.C., & Seitelman, L.M. (2022). The economic gains from equity. *Brookings Papers on Economic Activity*, 2021(2), 71-139.

Cable, Daniel M., Francesca Gino, and Bradley R. Staats. "Breaking them in or eliciting their best? Reframing socialization around newcomers' authentic self-expression." *Administrative science quarterly* 58, no. 1 (2013): 1-36.

Caleo, S. and Heilman, M.E., 2019. What could go wrong? Some unintended consequences of gender bias interventions. *Archives of Scientific Psychology*, *7*(1), p.71.

Castilla, E.J., 2008. Gender, race, and meritocracy in organizational careers. *American journal of sociology*, *113*(6), pp.1479-1526.

Castilla, E.J., 2015. Accounting for the gap: A firm study manipulating organizational accountability and transparency in pay decisions. *Organization Science*, *26*(2), pp.311-333.

Castilla, E.J. and Benard, S., 2010. The paradox of meritocracy in organizations. *Administrative science quarterly*, *55*(4), pp.543-676.

Churchman, C., 1967. West (1967). wicked problems. *Management Science*, *14*(4), pp.141-2. doi:10.1287/mnsc.14.4.B141.

Daly, M., Hobijn, B., & Pedtke, J. H. (2017). Disappointing facts about the black-white wage gap. *FRBSF Economic Letter*, *26*, 1-5.

Dobbin, F., Schrage, D. and Kalev, A., 2015. Rage against the iron cage: The varied effects of bureaucratic personnel reforms on diversity. *American Sociological Review*, *80*(5), pp.1014-1044. https://doi.org/https://doi.org/10.1177/0003122415596416

Dover, T.L., Kaiser, C.R. and Major, B., 2020. Mixed signals: The unintended effects of diversity initiatives. *Social Issues and Policy Review*, *14*(1), pp.152-181

Dybå, T., & Dingsøyr, T. (2008). Empirical studies of agile software development: A systematic review. *Information and software technology*, *50*(9-10), 833-859.

Festinger, L., 1962. A theory of cognitive dissonance. Vol. 2. Stanford university press. Hewstone, Miles, and Hermann Swart. "Fifty-odd years of inter-group contact: From hypothesis to integrated theory." *British Journal of Social Psychology* 50, no. 3 (2011): 374-386.

Harrison, D.A., Kravitz, D.A., Mayer, D.M., Leslie, L.M. and Lev-Arey, D., 2006. Understanding attitudes toward affirmative action programs in employment: Summary and meta-analysis of 35 years of research. *Journal of Applied Psychology*, *91*(5), p.1013.

Hewstone, M., & Swart, H. (2011). Fifty-odd years of intergroup contact: From hypothesis to integrated theory. *British Journal of Social Psychology, 50*(3), 374-386.

Hovmand, P.S., Andersen, D.F., Rouwette, E., Richardson, G.P., Rux, K. and Calhoun, A., 2012. Group model-building 'scripts' as a collaborative planning tool. *Systems Research and Behavioral Science*, *29*(2), pp.179-193.

Hummel, M., Rosenkranz, C., & Holten, R. (2015). The role of social agile practices for direct and indirect communication in information systems development teams. *Communications of the Association for Information Systems*, *36*(1), 15.

Jones, K.P., Peddie, C.I., Gilrane, V.L., King, E.B. and Gray, A.L., 2016. Not so subtle: A meta-analytic investigation of the correlates of subtle and overt discrimination. *Journal of management*, *42*(6), pp.1588-1613.

Joshi, A. and Roh, H., 2009. The role of context in work team diversity research: A meta-analytic review. *Academy of management journal*, *52*(3), pp.599-627.

Kalev, A. (2009). Cracking the glass cages? Restructuring and ascriptive inequality at work. *american Journal of sociology*, *114*(6), 1591-1643.

Kalev, A., Dobbin, F. and Kelly, E., 2006. Best practices or best guesses? Assessing the efficacy of corporate affirmative action and diversity policies. *American sociological review*, *71*(4), pp.589-617. https://doi.org/10.1177/000312240607100404

Kim, J. Y., Fitzsimons, G. M., & Kay, A. C. (2018). Lean in messages increase attributions of women's responsibility for gender inequality. *Journal of personality and social psychology*, *115*(6), 974.

Kraus, M. W., Torrez, B., & Hollie, L. (2022). How narratives of racial progress create barriers to diversity, equity, and inclusion in organizations. *Current opinion in psychology*, *43*, 108-113.

Kurdi, B., Seitchik, A.E., Axt, J.R., Carroll, T.J., Karapetyan, A., Kaushik, N., Tomezsko, D., Greenwald, A.G. and Banaji, M.R., 2019. Relationship between the Implicit Association Test and intergroup behavior: A meta-analysis. *American psychologist*, *74*(5), p.569.

Lee, B.A., Farrell, C.R. and Link, B.G., 2004. Revisiting the contact hypothesis: The case of public exposure to homelessness. *American Sociological Review*, *69*(1), pp.40-63.

Leslie, L.M., Mayer, D.M. and Kravitz, D.A., 2014. The stigma of affirmative action: A stereotyping-based theory and meta-analytic test of the consequences for performance. *Academy of Management Journal*, *57*(4), pp.964-989.

Lippens, L., Vermeiren, S. and Baert, S., 2023. The state of hiring discrimination: A meta-analysis of (almost) all recent correspondence experiments. *European Economic Review*, *151*, p.104315.

McPherson, M., Smith-Lovin, L. and Cook, J.M., 2001. Birds of a feather: Homophily in social networks. *Annual review of sociology*, *27*(1), pp.415-444.

Meadows, D. H. (2008). *Thinking in systems: A primer*. Chelsea Green Publishing.

Mowday, R.T., 1996. Equity theory predictions of behavior in organizations. In R. M. Steers, L.W. Porter, & G.A. Bigley (Eds.), *Motivation and Leadership at Work*. New York: McGraw-Hill, 53-71.

Nishii, L. H. (2013). The benefits of climate for inclusion for gender-diverse groups. *Academy of Management Journal*, *56*(6), 1754-1774.

Paluck, E.L., Green, S.A. and Green, D.P., 2019. The contact hypothesis re-evaluated. *Behavioural Public Policy*, *3*(2), pp.129-158.

Pettigrew, T.F. and Tropp, L.R., 2006. A meta-analytic test of intergroup contact theory. *Journal of personality and social psychology*, *90*(5), p.751.

Reckwitz, A., 2002. Toward a theory of social practices: A development in culturalist theorizing. *European journal of social theory*, *5*(2), pp.243-263.

Repenning, N.P. and Sterman, J.D., 2002. Capability traps and self-confirming attribution errors in the dynamics of process improvement. *Administrative Science Quarterly*, *47*(2), pp.265-295.

Ross, L., 1977. The intuitive psychologist and his shortcomings, in *Advances in Experimental Social Psychology*, *10*, ed. L. Berkowitz. Academic Press.

Rouwette, E.A., Korzilius, H., Vennix, J.A. and Jacobs, E., 2011. Modeling as persuasion: the impact of group model building on attitudes and behavior. *System Dynamics Review*, *27*(1), pp.1-21.

Spencer, S.J., Logel, C. and Davies, P.G., 2016. Stereotype threat. *Annual review of psychology*, *67*, pp.415-437.

Simon, H.A., 1996. *The sciences of the artificial*. MIT press.

Sterman, J. D., 2002a. Systems Dynamics: systems thinking and modeling for a complex world. M.I.T. Engineering Systems Division, Working Paper Series, ESD-WP-2003-01.13-ESD Internal Symposium.

Sterman, J. D. (2002b). All models are wrong: reflections on becoming a systems scientist. *Systems Dynamics Review: The Journal of the System Dynamics Society, 18*(4), 501-531.

Sterman, J.D., 2006. Learning from evidence in a complex world. *American journal of public health*, *96*(3), pp.505-514.

Tomaskovic-Devey, D., Zimmer, C., Stainback, K., Robinson, C., Taylor, T., & McTague, T. (2006). Documenting desegregation: Segregation in American workplaces by race, ethnicity, and sex, 1966–2003. *American sociological review*, *71*(4), 565-588.

Van Knippenberg, F., De Dreu, C.K., & Homan, A.C. (2004). Work group diversity and group performance: An integrative model and research agenda. *Journal of applied psychology, 89*(6), 1008-1022.

Vennix, J.A., 1999. Group model-building: tackling messy problems. *System Dynamics Review: The Journal of the System Dynamics Society*, *15*(4), pp.379-401.

Weisinger, J.Y. and Salipante, P.F., 2000. Cultural knowing as practicing: Extending our conceptions of culture. *Journal of management inquiry*, *9*(4), pp.376-390.

Werner, K., St. Arnold, G., & Crea, T. M. (2021). Using a community-based system dynamics approach for understanding inclusion and wellbeing: a case study of special needs education in an eastern African refugee camp. *Conflict and health*, *15*, 1-9.