

CONSCIOUS MULTILEVEL CULTURAL EVOLUTION: THEORY, PRACTICE, AND TWO CASE STUDIES

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ABSTRACT: Darwin's theory of evolution is increasingly being used to guide positive change efforts. We briefly summarize the theory and practice of conscious multilevel cultural evolution and provide two case studies at the scale of whole institutions, in which continuous improvement is exceptionally well documented.

INTRODUCTION

Darwin's theory of evolution is increasingly being used to guide positive cultural change efforts in real-world settings (reviewed in Wilson et al., 2023). The application of Darwinian theory is relatively new because, for most of the twentieth century, the study of evolution was confined to genetic evolution, relegating the study of human cultural change to other disciplines. The serious study of human cultural evolution didn't begin until the 1960s and only now has matured to the point of informing any positive change effort, no matter what the context (e.g., business, education, environment, government, health, therapy) or scale (e.g., individuals, small groups, institutions, multi-institution cultural ecosystems, and ultimately the planet).

Another complicating factor is the early history of evolutionary thinking in relation to human affairs, which is often labeled Social Darwinism and associated with the moral justification of social inequality. In fact, many early thinkers were socially progressive (e.g., Darwin himself, Thomas Huxley, Peter Kropotkin, William James, John Dewey, Pierre Teilhard de Chardin, Julian Huxley), but it is undeniably true that others argued for eugenics, the withholding of welfare for the poor, unbridled competition in business, and so on (for more on Social Darwinism, see Hodgson, 2004; Richards, 2013; Wilson and Johnson, 2016).

The modern study of cultural evolution recognizes cooperation as the signature human adaptation and policy objective

across all contexts and scales. It reveals, more strongly than any other theoretical perspective, that cooperation can either succeed or fail as a social strategy in competition with non-cooperative strategies. Positive change efforts require the construction of social environments that allow cooperation to succeed at multiple levels and multiple contexts in a Darwinian world.

In this article, we briefly summarize the theoretical framework and its relevance to real-world change efforts. Then we provide two case studies involving Australian government agencies striving to clarify their strategic missions and improve their operations. The examples are notable, not only for the success of the evolution-informed efforts at the scale of whole institutions but also for the degree to which the success was documented over an eight-year period in comparison to other Australian government agencies.

SUMMARY OF THEORY

The relevant theory can be summarized by expanding upon the words of our title in reverse order. Please consult Atkins et al., 2019; Wilson, 2019; Wilson, 2024; Wilson et al., 2023; and Wilson and Snower, 2024 for more comprehensive treatments.

Evolution: As a word in the English language, evolution refers broadly to any kind of change. The great achievement of Charles Darwin (and Alfred Russell Wallace) was to identify the active ingredients of evolutionary change in nature: variation (organisms differ in almost everything that can be measured about them), selection (their differences make a difference in

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terms of survival and reproduction), and replication (offspring tend to resemble their parents). When these three ingredients are combined, the properties of organisms change over time as they become adapted to their environments. Thus, *Darwinian* evolution has a very precise meaning, not to be confused with the broader use of the word ‘evolution.’

Darwin and his contemporaries knew nothing about genes. For them, replication meant any mechanism that results in a resemblance between parents and offspring. This allowed them to speculate freely about the length and breadth of humanity in addition to the natural world. Examples, beyond Darwin, include the philosophical tradition of Pragmatism (beautifully described by Louis Menand (2001) in his book *The Metaphysical Club*) and the economist Thorstein Veblen’s 1898 essay titled “Why is Economics not an Evolutionary Science?”

Unfortunately, the advent of genetics led to a constriction of evolutionary thinking. What became known as the Modern Synthesis in the mid-20th century was narrowly based on Mendelian inheritance mechanisms. Textbooks even described natural selection as “a change in gene frequency,” as if the only way that offspring can resemble parents is by sharing the same genes.

Starting in the 1960s, a few bold thinkers went back to basics by defining Darwinian evolution as Darwin did—any process that combines the ingredients of variation, selection, and replication, no matter what the proximate mechanisms. This is known as *generalized Darwinism* (Hodgson, 2013). Mechanisms of replication, in addition to genetic mechanisms, include epigenetics (changes in gene expression rather than gene frequency), behavioral learning through reinforcement, and symbolic transmission (mainly through language) (Jablonka and Lamb, 2006). Also, artificial intelligence and other computer algorithms make use of variation/selection/replication processes at lightning speed.

Cultural: Cultural evolution is the transmission of learned behaviors between individuals, not only across generations but also peer-to-peer within generations (Richerson and Boyd, 2005; Henrich, 2015; Laland, 2017; Muthukrishna, 2023). It occurs in many species but is especially elaborated in our species due to our capacity for symbolic thought. Symbolic thought is based upon processes of mental relating (Hayes et al., 2001) that do not necessarily correspond directly to elements of the environment, any more than our genes do. Instead, both our symbols and our genes result in traits (including behaviors) that

are enacted in the environment and are, therefore, subject to the winnowing action of selection.

Thinking of our symbols as the cultural equivalent of our genes is called Dual Inheritance Theory (Richerson and Boyd, 2005; Richerson, 2017). The cultural inheritance system evolved by genetic evolution and has been co-evolving with it ever since. It can adapt human populations to their environments much faster than genetic evolution alone. This is why our ancestors were able to spread over the globe, adapting to all climatic zones and filling dozens of ecological niches in only a few hundred thousand years. As the faster process, cultural evolution often plays the lead role in evolutionary change. First, we adapt by individual learning and cultural transmission. Then, genetic evolution follows at a slower pace. The formal study of human cultural evolution can inform virtually any positive change effort, including a government agency’s effort to improve its strategic mission and operations, as we shall see below.

Multilevel: If natural selection favors individuals that survive and reproduce better than other individuals, then how can it explain the evolution of behaviors that benefit others at one’s own expense? Darwin was the first person to confront this problem and propose a solution: Groups whose members behave altruistically toward each other will robustly outcompete groups of selfish individuals who can’t cohere. A modern summary of Darwin’s insight is “Selfishness beats altruism within groups. Altruistic groups beat selfish groups. Everything else is commentary” (Wilson and Wilson, 2007; see Wilson 2015 for a book-length account).

Notice that for altruism to evolve, between-group selection must be strong enough to oppose within-group selection favoring more self-serving behaviors. Also, the highly cooperative groups that evolve by between-group selection can compete harmfully with each other. Between-group selection doesn’t eliminate conflict so much as elevate it to the level of between-group interactions, where it can take place with even more destructive force than before.

This logic can be expanded to multiple levels of a multi-tier hierarchy, such as from genes to ecosystems in biological systems and small groups to global governance in human social systems. In human terms, self-preservation—a good thing—easily becomes self-dealing. Helping kith and kin—a good thing—easily becomes cronyism and nepotism. My nation first—a good thing—leads to international conflict. Growing a strong economy—a good thing—results in overheating the earth. It is sober-

ing that nearly every anti-social behavior at large scales can be traced to forms of prosocial behaviors operating at smaller scales.

Conscious: It should be clear from the foregoing that evolution—whether genetic or cultural—doesn’t make everything nice. It often results in outcomes that benefit individuals at the expense of other individuals, groups at the expense of other groups, and that yield short-term benefits at the expense of the long view. Also, in a changing world, adaptations to past environments can become mismatched to current environments and maladaptive in every sense of the word.

It follows that multilevel cultural evolution must have a strong intentional component if we wish to avoid these potential pitfalls. All three ingredients of cultural evolution—our targets of selection, variation in how we attempt to achieve the targets, and the replication of better practices, must be carefully managed. Otherwise, cultural evolution will still take place but will create problems rather than solutions.

It is important to emphasize that managing cultural evolution does not imply the kind of top-down “command and control” decision-making often associated with the word management. The world is too complex to be understood and implemented by any group of experts. Instead, a more humble, experimental approach is required. An experiment is inherently a carefully managed process of cultural evolution, which compares alternatives with explicit objectives in mind and repeats itself again

and again. As we will show, all members of an organization need to be involved in experimentation, not just an elite class of managers. Equity and inclusion, which many regard as virtues in their own right, also turn out to be the most effective forms of management in most contexts.

FROM THEORY TO PRACTICE

For more than a decade, we have been working with many others to develop a practical framework for conscious multilevel cultural evolution; first as a project within the Evolution Institute and then as an amicable spinoff to form ProSocial World.¹ From the outset, we focused on two common denominators required for any form of positive change: *governance* and *adaptability* (Atkins et al., 2019). This framework continues to evolve.

For a positive change in governance and adaptability to be sustained at scale, three broad processes need to be enhanced (Figure 1). The first focuses on developing self-awareness and responsiveness, the second on deepening shared purpose and vision at multiple levels within multi-stakeholder (polycentric²) systems, and the third on enhancing the group’s capacity for collective action and co-evolution within relevant spheres of influence. Facilitating these processes has effectively shaped and sustained the cultural norms and practices that have led to significant positive change. We elaborate on these below.

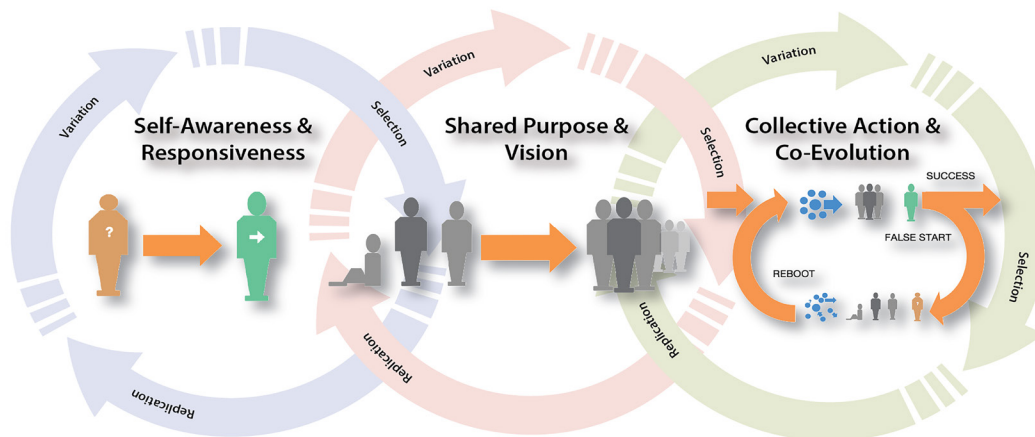


FIGURE 1. THREE PROCESSES OF POSITIVE CONSCIOUS CULTURAL EVOLUTION

- 1 Both are 501 (c) organizations: <https://evolution-institute.org/> and <https://www.prosocial.world/>. ProSocial World was founded in 2020.
- 2 The concept of polycentric governance notes that: 1) life consists of many spheres of activity; 2) each sphere has an optimal scale; and 3) good governance requires identifying the optimal scale for each sphere and effectively coordinating among the spheres. For more, see McGinness (1999) and Ostrom (2010).

CULTIVATING SELF-AWARENESS AND RESPONSIVENESS

The first cycle is focused on evolving personal *awareness and responsiveness*. Inspired by Contextual Behavioral Science³ (Wilson and Hayes, 2018), our target during this phase is to enhance individual and collective psychological flexibility. Psychological flexibility has been formally defined as “contacting the present moment as a conscious human being, fully and without needless defense—as it is and not as what it ‘says’ it is—and, depending on what the situation affords, persisting with or changing a behavior in the service of chosen values” (Hayes et al. 2012, p. 96). There are six aspects to psychological flexibility which, together, constitute a model of an effectively functioning human psychology. As described in the “Extended evolutionary meta-model” these six elements describe: 1) a person’s relationship to their identity, 2) where they direct their attention, 3) their relationship to their emotions, 4) their relationship to their thoughts, 5) their overt actions and 6) their values and motivation.

Moran and Ming (2023) provide a very useful summary of these six elements in the form of a personal mantra that sums up the psychologically flexible stance.

- I am ... (self)
- Here now ... (attention)
- Accepting the way I feel ... (emotion)
- Noticing my thoughts ... (cognition/thought)
- While doing ... (overt behavior)
- What I care most about (motivation/values)

This stance is enormously helpful in the context of strengthening relationships. For example, conflictual situations are often worsened when people:

- Protect a rigid identity such as being right, being the expert or being the boss (self)
- Direct their attention to past wrongs or future fears without noticing what is actually happening in the present moment (attention)
- Act automatically in reaction to strong emotions such as anger, shame or fear (emotion)

- Are rigidly fused with assumptions and beliefs that are inaccurate or unhelpful (cognition/thought)
- Act in ways that are unskilled (overt behavior), or
- Act in ways that are inconsistent with their deeper or longer-term needs and values (motivation/values)

In our experience, training in psychological flexibility individually and collectively enhances relationships, thriving and the potential for collaboration. This is about **adaptability**, the capacity for change in response to the context, either in response to environmental change or to achieve aspirational goals. The desired outcome is for participants to take a broader perspective on their experience such that they can respond consciously rather than reactively to their environment.

Change in valued directions can be difficult, even when it is earnestly wanted. Every year, most of us make our New Year resolutions—and then fail to keep them! Likewise, groups spend time and energy on strategic plans that end up unread in a drawer.

The reason for these difficulties is not so much that we lack flexibility, but that we are flexibly pulled in many directions. We want a great relationship with our partner—but we also want to control them. We want to lose weight—but we also can’t resist the next potato chip. We want to be team players at the office—but we also want to be the one that is promoted. We want to be responsible corporate citizens—but we also must maximize short-term profits for our shareholders. We want world peace—but easily succumb to international conflicts. We want to prevent global warming—but also like to drive around in our cars and regulate the temperatures of our homes.

These short-term survival strategies, which pull us away from our more expansive goals, are not senseless. Instead, they are *adaptive* in the limited sense of benefitting me but not you, us but not them, or our short-term gain rather than the long view. From a multilevel evolutionary perspective, this should sound familiar. We have already stressed that genetic and cultural evolution doesn’t make everything nice and that special conditions are required for higher-level selection to prevail over lower-level selection. Now we can begin to understand our capacity for change in the same light.

3 Contextual behavioral science can be defined as the study of behavior in the context of everyday life, with the goal of prediction and influence in addition to understanding. It is inherently an applied science, represented by disciplines such as clinical psychology, public health, and prevention science, but it is also deeply relevant to the basic scientific academic disciplines.

There is a suite of very effective methods for enhancing psychological flexibility, each suited to different contexts. Acceptance and Commitment Therapy/Training (ACT), founded by Steven C. Hayes (Hayes & Smith, 2005; Hayes, 2019), the Matrix developed by Kevin Polk and colleagues (Polk et al., 2014), DNA-V developed by Louise Hayes, Joseph Ciarrochi, and Ann Bailey (Hayes et al., 2022), for example. Each of these is rooted in Contextual Behavioral Science (Wilson and Hayes, 2018) and has been developed to enhance an individual or group's capacity to *observe and discriminate* their world, to *make sense of and describe* it in more useful ways, and *act in relation to it more effectively*, i.e., track what they are doing in relation to what is valued.

The effectiveness of these methods is well-known within their disciplinary domains, but little known beyond their borders. If you are unfamiliar with the literature on ACT, for example, you might be surprised to learn that it is validated by over 1,000 randomized control trials and supported by an international society of over 10,000 practitioners and academic scientists.⁴

From an evolutionary perspective, ACT is clearly a method that enhances conscious multilevel cultural evolution, with a target of selection (valued living), an exploration of behavioral options (variation), and replication (or retention) of the options that do the best job of reaching the target. While the methods were developed primarily in the context of individual coaching, therapy, and training, they work just as well at the level of groups—perhaps even better, because group members can help each other in all phases of the variation/selection/replication process.

All of what we have discussed in this section is consistent with dual inheritance theory, but we contend that a new term, “symbotype,” is warranted to help describe the dynamics of human cultural evolution. For humans, both their genotype (their genetic makeup) and their symbotype (their mental world) shape expressed behavior (the phenotype) (Wilson et al., 2014). Colloquially, we can understand the term symbotype as synonymous with the terms “worldview” or “meaning system.” However, we are currently in collaboration with others within the Contextual Behavioral Science community to imbue the term with a much more precise, evidence-based definition.

Relational Frame Theory (Hayes et al., 2001) is a behavioral

model of language and cognition that is focused upon a single uniquely human ability that it sees as the basis of all thought and language, technically known as “arbitrary applicable derived relational responding.” Put simply, humans are astoundingly good at manipulating and inferring arbitrary symbols to describe and alter relationships between events and objects. For example, if you persistently have the thought or utter the phrase “I am/you are always behaving stupidly,” phenotypically, it will not function to elicit a healthy response or evolutionary trajectory. If, on the other hand, you reauthored the phrase so the symbol “I/you” is put into a relation of equivalence “am/are” with the event “always learning,” it will function phenotypically to reinforce a healthy evolutionary trajectory. Taken together, a person's learned network of relational behavior (their mental world, if you like) can be seen as their symbotype.

Just as for a phenotype, a symbotype should not be mistaken for a *thing* inside a person but rather should be seen as a process of active, symbolic responding to the context. Just as genotypes can produce phenotypes that are more or less well suited to a particular environment, so too can symbotypes. Some patterns of relational responding (e.g. “I must be right,” “They are evil,” “I deserve to be in charge”) are less adaptive for producing human thriving than others (e.g. “Even though I disagree, that person shares my humanity and deserves my respect and compassion”). ProSocial strives to promote symbotypic patterns that are supportive of collaborative behaviors.

These methods for developing psychological flexibility reveal the need for *inner* change to accomplish *outer* change. As mentioned, it is essential that we learn to observe and discriminate our world, to make sense of and describe it in more useful ways, which will, in turn, enable us to act in relation to it more effectively. Any given symbotype provides a degree of behavioral flexibility in how individuals and groups respond to their environments (Atkins & Styles, 2016; Styles & Atkins, 2018). Often maladaptive repertoires of behavior are maintained by rigidly held symbotypes. To move beyond this repertoire, however, requires a change in the structure and frequency of expressed symbotypes, from discourse aimed at controlling and avoiding unwanted experiences to repertoires aimed at living a valued and vital life. This begins to explain why the neoclassical economic paradigm, which has been so influential in business

4 The society is the Association for Contextual Behavioral Sciences (<https://contextualscience.org/>) and the randomized control trials are listed here: https://contextualscience.org/act_randomized_controlled_trials_1986_to_present

management circles, is largely blind to what is required for good business and governance practices (Wilson and Snower, 2024).

Another insight is that evolving one's symbotype and consequent behavioral repertoires can be a rapid process, although also a lifetime endeavor. The ACT literature includes studies of interventions as short as fifteen minutes resulting in measurable behavioral change (e.g., Gloster et al., 2020). In one study, the intervention was to read a book on ACT and work through its exercises without seeing any therapist or trainer (Jeffcoat and Hayes, 2012). Not only was there an increase in mental health between the pre- and post- measurement periods, but there was further improvement between the post- and follow-up measurement periods. In other words, the participants had internalized healthy patterns of relational responding and were actively practicing and improving upon them on their own. As we will see, this continuous improvement process can also take place at the level of institutions.

DEVELOPING A SENSE OF SHARED PURPOSE AND VISION

The second cycle is at the level of the whole group and aims to build a flexible, context-sensitive, deeply held sense of shared vision based on values and needs. This is about constructing a symbolic niche and catalyzing streams of co-evolutionary sense-making. Just as non-verbal animals construct safe and habitable niches or places to live within their environment, as a verbally enabled species, we construct symbolic representations of healthy and safe habitats and strive to build them. For example, we can imagine and design villages with circular economies. In this way, constructing a symbolic niche is an active enquiry into and consideration of what a preferred and probable future could look like for group members. A typical exercise in

this cycle might involve individually and collectively journeying to the future to imagine what a preferred and probable future might look and feel like. Participants are also typically invited to consider the factors—(social, technological, environmental, economic, political, legal, ethical, etc)—that will determine whether such a healthy, harmonious, and prosperous world might materialize. The output of this enquiry is a much clearer understanding of the systemic trends and drivers shaping the behavior of the people within and outside the group, and the consequences of organized and coordinated efforts in the service of its cause. This enables group members to identify and benchmark opportunities and innovations that could become the seeds of positive, system-wide, trans-generational transformational change.

What is being selected for here are robust descriptions (symbotypes) of a healthy future world, of shared value and vision that reflects the head and the heart of everyone in the group. The desired outcome of this cycle is a deeply held sense of shared vision, values, and purpose, i.e. alignment between everyone in the group.

This is the necessary first step in designing the **governance** arrangements needed for any group to coordinate its activities to accomplish its collective goals. This approach has been inspired by Elinor Ostrom, a political scientist who shared the Nobel prize in economics in 2009 for her research on the governance of groups that collectively manage common-pool resources (Ostrom 1990; 2010). She showed that self-governance is possible, avoiding the “tragedy of commons” (Hardin 1968) if groups implement eight core design principles (CDPs) shown in the first column of Table 1. The second column of Table 1 provides generalized wording for the CDPs, and the third column shows how they map onto the parameters of multilevel selection theory.

Ostrom's Principles	Generalized Version	Function
1. Clearly defined boundaries	1. Shared identity and purpose	Defines group
2. Proportional equivalence of benefits and costs	2. Equitable distribution of costs and benefits	Ensures effectiveness within groups by balancing individual and collective interests
3. Collective choice arrangements	3. Fair and inclusive decision-making	
4. Monitoring	4. Monitoring agreed-upon behaviors	
5. Graduated sanctions	5. Graduated responding to helpful and unhelpful behaviors	
6. Conflict resolution mechanisms	6. Fast and fair conflict resolution	Appropriate relations with other groups, reflecting the same CDPs
7. Minimal recognition of rights to organize	7. Authority to self-govern (according to principles 1-6)	
8. Polycentric governance	8. Collaborative relations with other groups	

TABLE 1. GENERALIZING ELINOR OSTROM'S CORE DESIGN PRINCIPLES (CDPs) FOR THE EFFICACY OF GROUPS

Developing a sense of shared purpose and vision is the first of the eight principles (CDP1). Defining who is in the group and folding their respective needs and values into a shared vision provides the context for implementing the remainder of the CDPs.

ENGAGING IN COLLECTIVE ACTION AND CO-EVOLUTION

The third and final cycle is at the level of the group embedded in a broad system. Even if all members are fully aligned with their group's goals (CDP1), they still need to cooperate (literally, to co-operate) in the right way. In addition, there must be protections against activities that benefit some members at the expense of others and the group as a whole (CDP4, 5 & 6). In Darwinian terms, governance is needed to suppress disruptive selection within a group so that the group becomes the primary unit of selection. Governance arrangements need to be forged through the practice of collective action and co-evolution.

This is about creating social niches and catalyzing streams of co-evolutionary action that are supportive of the health of both the human and 'more-than-human' worlds. This involves implementing Ostrom's set of principles (CDPs) for helpful collaborative behavior. These principles have been shown to underpin the formal and cultural normative practices that sustain effective inter-related teamwork over extended periods and distances required for a successful enterprise. Here, group members are invited to reflect on how to best guide and support their group or organization in employing these principles and cultivating more effective, trusting, and collaborative working relationships. Furthermore, they are invited to consider how their community or organization could more successfully interface and interact with the broader society, of which it is an integral part. Equipped with this framework, it enables the co-design and prototype of collective best practices at every level of the system. At its heart, this cycle calls for innovation as it invites the richness of our cultural and disciplinary heritages to be woven together prosocially in a variety of ways as we respond to the existential challenges of our time.

What is being selected for here are well-coordinated normative practices and learning through action. The desired outcome of this cycle is a genuinely co-developed (CDP2 & 3) and implemented plan for action that is tracked (CDP4), evaluated (CDP4-5), and evolved over time. In this way, emergent best practices can be selected and replicated in the service of valued

long-term outcomes (CDP1-2).

Despite the fame of being a Nobel laureate, appreciation of Ostrom's work remains highly circumscribed. One of our contributions, starting with a direct collaboration with Ostrom (Wilson, Ostrom, and Cox 2013), is to show that the CDPs can be generalized, applying to nearly all forms of cooperation, not just the management of common-pool resources. Put another way, cooperation is itself a common-pool resource vulnerable to exploitation, much like natural common-pool resources such as forests, lakes, and pastures.

The generality of the CDPs is a hypothesis that can be empirically tested. In one of our studies (Wilson et al. 2020), we asked participants to provide information on two groups they knew well: a workplace group and any other group they chose. The information included how well the group implemented the CDPs and how well they functioned as a group with respect to trust, satisfaction, needs, cooperation, and commitment. The results were: 1) A strong correlation between implementation of the CDPs and group performance outcomes for all kinds of groups; and 2) an average deficit in all eight CDPs for workplace groups. In other words, businesses *need* the CDPs as much as other types of groups but *are lacking*, on average, in all of them. This is likely due in part to the influence of neoclassical economic thinking on business and management practices. Despite the average deficit in the implementation of the CDPs within business groups, some do implement the CDPs and have high-performance outcomes as a result (Hayes, Atkins, and Wilson, 2021).

CDP 7 and 8 apply the same principles that govern interactions *within* groups to interactions *between* groups. This means that the CDPs are *scale independent*; as insightful for governing the affairs of a single group, a multigroup organization such as a government agency, a multi-organization cultural ecosystem such as the nation of Australia, and the entire earth as a global village of nations and other leviathan organizations. This is a tremendous conceptual simplification.

No matter what the scale and context, every group with collective goals can benefit from learning about and implementing the CDPs. That said, they cannot be implemented in a cookie-cutter fashion. Ostrom made an important distinction between a functional design principle and its implementation. All groups might require monitoring (CDP4), for example, but how they monitor can be highly contextual. Also, in addition to the CDPs required by nearly all groups, there are auxiliary design princi-

ples (ADPs) required by some groups but not others to achieve their specific goals. The ADPs are as important as the CDPs for the groups that need them. Given these complications, groups must continuously evolve their arrangements in cycles of variation, selection, and replication, as we will illustrate with our two case studies below.

To summarize, taken together, generalized versions of Ostrom's core design principles and methods for developing psychological flexibility can provide what all groups need: to be *well-governed* and to be *adaptable*. To our knowledge, these two bodies of knowledge have never been combined into practical change methods before. Why? In part because they were not formulated in general terms and, therefore, were trapped within their separate disciplinary boundaries. One of the great advantages of the evolutionary perspective is that it dissolves disciplinary boundaries so that ideas that have proven themselves within limited contexts can be applied across all contexts and scales. This can be regarded as a form of cultural recombination and can include insights from other disciplines, such as systems engineering, in addition to political science and clinical psychology.

TWO CASE STUDIES

As outlined, our current schematic for working with organizations is focused on enhancing three broad processes—developing *self-awareness and responsiveness*, deepening *shared purpose and vision* at multiple levels within multi-stakeholder systems, and enhancing the group's capacity for *collective action and co-evolution* within relevant spheres of influence.

This involves variation/selection/replication cycles at multiple scales, including individuals, the most important subgroups within the organization, and the whole organization. The mission of the whole organization is the main target of selection (CDP1), through the coordinated actions of the lower-level units (CDPs 1 through 8). The organization is nested within a larger cultural ecosystem, however, which in turn is nested within the biological and physical environment. Therefore, it is important for the mission of the organization to include an awareness that it is part of something larger than itself.

This current framework was pioneered by our work with two government organizations in Australia: the first was with an Australian Government Agency, one of their National Cultural Institutions, and the second was with a Division of an Australia-

lian Government Department. Robert Styles was the facilitator in both cases. Two detailed case reports are available online (Atkins and Styles, 2020; Wilson and Styles, 2020). Robert was an experienced organizational consultant before he added ProSocial methods to his toolkit. He was approached by the leaders of the two organizations because of difficulties that they were experiencing with their strategic missions and operations. In the case of the Agency, the new CEO wanted the organization to be more visionary and entrepreneurial, which was threatening the status quo for some staff members and units within the organization. Also, some of the units were competing with each other for resources rather than cooperating with a larger shared purpose in mind (CDP1). The facilitation took place during 2014-15.

Work with the Department Division, which manages all the properties (real and virtual) owned by the Australian Government, involved two subdivisions that played very different roles: One managed the properties, and the other was charged with evaluating and selling off some of the properties to cut costs and generate revenue for the government. As might be imagined, these two subdivisions did not always see eye to eye. The facilitation took place during 2016-17 and benefitted from Styles' earlier experience with the Agency.

While some of the details are unique to the two organizations, we hope readers will recognize problems common to most organizations of this size: A forward-looking mission pushing against the status quo. Subunits within the organization compete against each other in ways that are not helpful to the whole organization. Staff members who have become disenchanted with their jobs and are not playing the active, creative role that might be hoped for.

The main "tools" of the ProSocial "toolkit," the CDPs and the development of psychological flexibility, cannot be applied in a cookie-cutter fashion. Instead, a facilitator must assess the situation and adapt his or her approach to the organization's particular context. This is itself a variation/selection/replication process. Also, using the tools of ProSocial does not mean abandoning tools from other organizations consulting methods derived from disciplines such as positive psychology or systems engineering. Remember that the ProSocial tools are *generalizations* of ideas and best practices that originated and spread on the basis of their success, only to come up against the boundaries of specific disciplines, beyond which they remained

unknown. Generalized Darwinism can perform this boundary-dissolving service for other useful tools, in addition to the CDPs and ACT.

In the case of the Agency, Robert began with a series of facilitated workshops in which ACT and the CDPs were introduced to top-level executives and mid-level managers. These leaders engaged in discussion about the meaning and relevance of the practices and principles and how well things were working in that regard. Between the workshops, group and one-on-one coaching sessions were provided to a number of the individual teams and leaders with the aim of supporting them as they attempted to translate what they had explored in the workshops into action.

Following the first cycle of workshops, additional workshops were held for specific teams responsible for coordinating education tours through the Agency and designing and hosting the various exhibitions. This illustrates the scale-independence of the ProSocial tools within the organization. The same tools are used at the level of the whole organization, the major divisions within the organization, and small teams within the major divisions. Also, the tools are learned and practiced in the context of the workflow of the organization, as opposed to being learned in an isolated retreat or leadership training course. At every level, there is an expectation that groups will not get things right the first time around, requiring additional cycles of variation, selection, and replication. This casts failure in a new and more positive light as the leading edge of positive multilevel cultural evolution.

In the case of the Department Division, Robert had learned from his experience with the Agency and other projects that translating ProSocial principles and practices into the living and breathing normative environment of an organization happened more effectively if he entrusted members of the organization with more of the work (CDP7). This meant coaching the most senior leaders in the division and supporting them behind the scenes as they did the facilitation and coaching/mentoring work with their team leaders and staff (CDP7-8). Debriefing sessions were held after a round of leader-led workshops, and key learnings and insights (CDP4) were used to draft the agenda for division-wide forums (CDP1, 2 & 3). This variation/selection/

replication cycle was repeated for five rounds.

In the next section, we will present quantitative data on the success of the two facilitations. For the rest of this section, we will describe some vignettes to give a feel for how the facilitations were experienced by staff members at various levels of the organization.

Meetings organized to develop psychological flexibility create a safe and secure social environment for discussing the thoughts, feelings, and actions that take staff members away from their own valued goals and the goals of the organization (maladaptive behaviors). In one session, an executive staff member disclosed that she wanted to get better at speaking openly and honestly about what she *didn't know* in situations where she was expected to speak from a position of authority. She explained how she quite habitually would try to fake expertise to avoid appearing stupid and unqualified. After pretending to be someone she wasn't, she felt exhausted and inauthentic. This is a fine example of a behavior that is an adaptive response to a stressful situation in a highly limited sense, but which takes both the individual and the organization away from their valued goals in a broader sense (CDF1). In the safe and secure social environment of the session, this person received an upwelling of empathy and support, and a step was taken toward a culture where ignorance can be openly acknowledged and discussed (CDP3-5).

Discussions of the CDPs had the effect of distributing leadership more evenly throughout the organization. Before, individuals were accustomed to being seen as doing the right thing by following orders from those above them and giving orders to those below them. After, all members of the organization likely to be affected by a given decision were involved in the decision-making process (CDP3). Not only did this result in better decisions, but it also made staff members feel more valued within their organization (CDP2), increasing their sense of belonging.⁵

Best of all, improvements in the organizations were not limited to the year of the intervention. They continued to evolve and build upon each other in subsequent years without the need for a facilitator. In other words, the organizations had evolved the ability to further evolve prosocially on their own.

5 Parenthetically, a United States naval officer captaining a nuclear submarine converged upon the same model, which he calls the "leader-leader" model in contrast to the "leader-follower" model (Marquet, 2013). This illustrates the generality of the core design principles and their repeated independent derivation, which can be regarded as examples of convergent cultural evolution.

ASSESSMENT

These two facilitations are remarkable not only for their success but also for the degree to which they can be assessed, thanks to an annual survey that is given to all Australian public service employees. This enabled us to perform a pre- and post-assessment for the two agencies and also to compare them to all other agencies during the same period. It also enabled us to document the capacity for continuing improvement highlighted above.

Australian Government Agency Census Data. Australian Public Service Employee Census data include items that measure Employee Engagement, Communication, Innovation & Change, Senior Leadership, Immediate Supervisor, Current Job & Workplace Performance, Code of Conduct, and Agency Specific Performance (Commission 2014; 2015; 2019; 2022). Please consult the appendix for the list of specific items.

The blue bars in Figure 2 show the difference between pre (2014) and post (2015) measures for the agency, which are all in a positive direction, some as much as 25%. The red bars show equivalent results for the Australian public service, which are centered around zero and, if anything, are in a negative direction.

Figure 3 shows the agency’s average results for the major categories listed above over an eight-year period,⁶ showing sustained post-facilitation improvement.

These outcomes were also corroborated through testimony and a 2015 Annual Report prepared for the Australian Senate. The Agency’s senior executives confirmed that the impact of the facilitation exceeded set targets as measured by their pre-determined strategic objectives and key performance indicators.

Australian Government Department Division Census Data. Comparable pre- and post-data for the division in comparison with the entire Australian Public Service are shown in Figure 4, with a comparison of single items over a three year period shown in Figure 5. As with the agency, there was a marked improvement during the first year, followed by further improvements for most items. This is strong evidence that the facilitation changed the culture of the organization, endowing it with the ability to further evolve on its own.

The Division’s senior executives confirmed that the impact of the intervention exceeded set targets as measured by their pre-determined strategic objectives and key performance indicators.

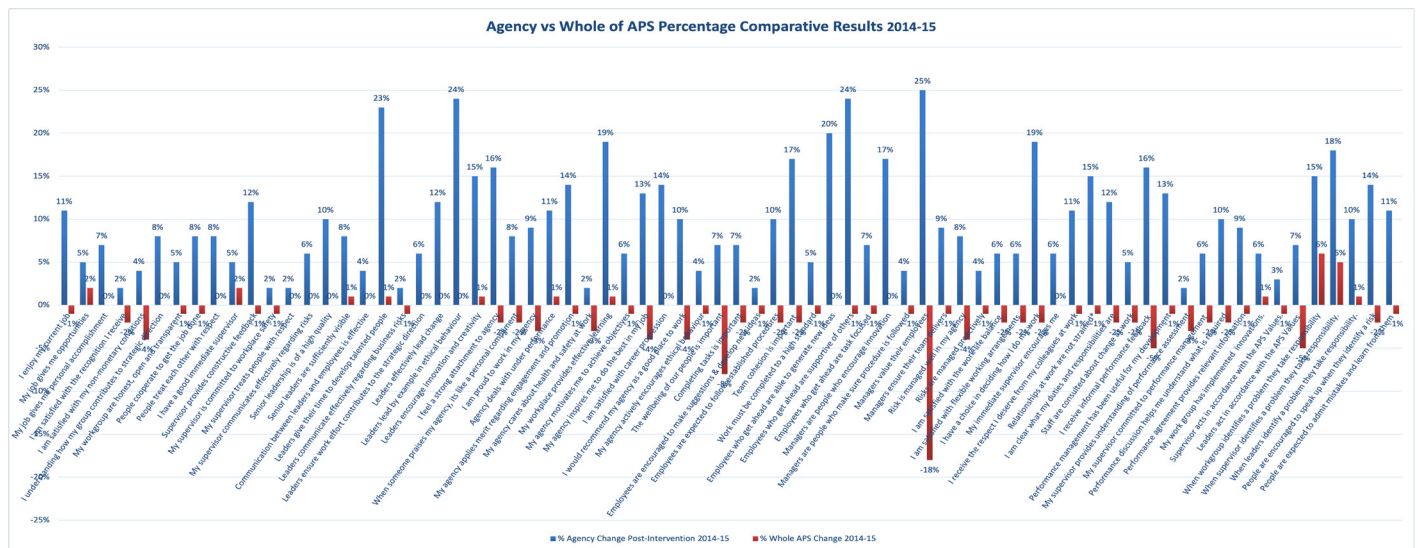


FIGURE 2. MEASURES IDENTIFIED IN THE AUSTRALIAN GOVERNMENT AGENCY APSC 2014-15 EMPLOYEE CENSUS REPORT (COMMISSION 2014, 2015) AS HAVING SIGNIFICANTLY IMPROVED COMPARED TO THE AGENCY’S MEASURES FROM THE PREVIOUS YEAR (BLUE) COMPARED WITH MEASURES FROM THE ENTIRE AUSTRALIAN PUBLIC SERVICE (RED).

6 Averages for the major categories are provided because some of the specific items within the categories changed over the years.

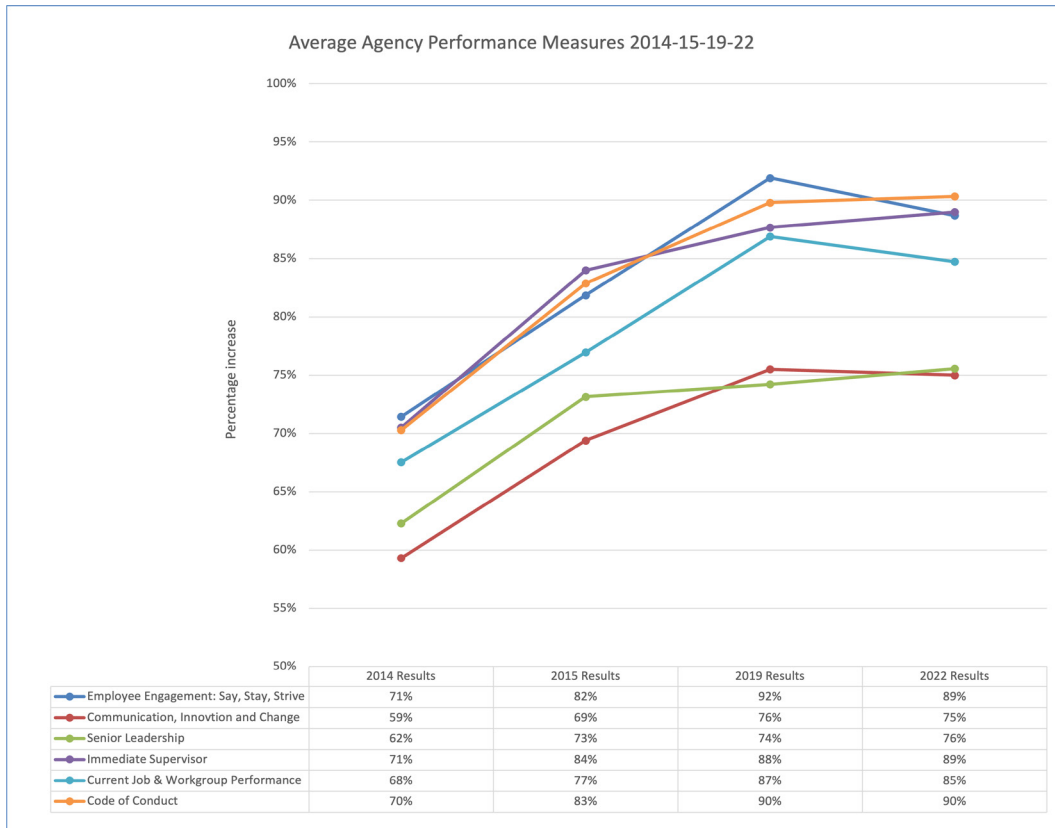


FIGURE 3. AUSTRALIAN GOVERNMENT AGENCY CENSUS DATA SHOWING AVERAGE PERCENTAGE IMPROVEMENTS (COMMISSION 2014, 2015, 2019, 2022) IN EMPLOYEE ENGAGEMENT, COMMUNICATION, INNOVATION & CHANGE, SENIOR LEADERSHIP, IMMEDIATE SUPERVISOR, CURRENT JOB & WORKPLACE PERFORMANCE, AND CODE OF CONDUCT. (RED).

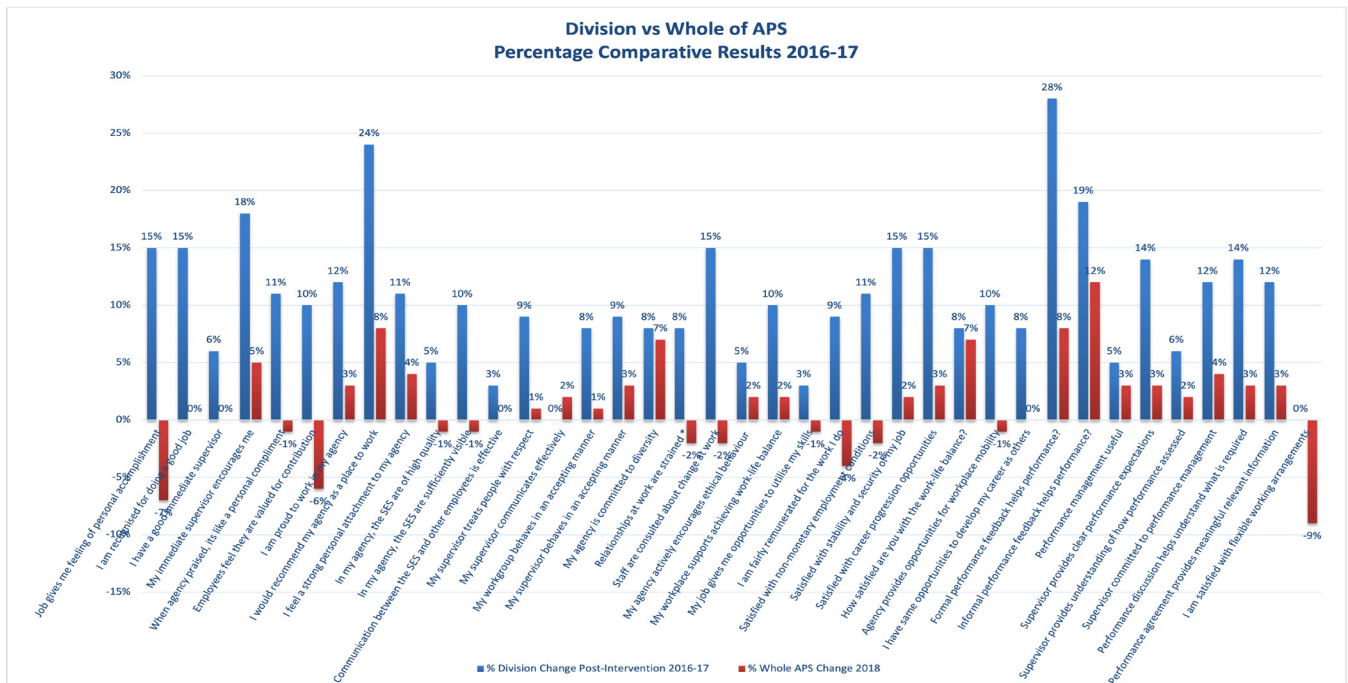


FIGURE 4. MEASURES IDENTIFIED IN THE AUSTRALIAN GOVERNMENT DEPARTMENT DIVISION 2017 EMPLOYEE CENSUS REPORT (COMMISSION 2017) AS HAVING SIGNIFICANTLY IMPROVED COMPARED TO THE MEASURES FROM THE PREVIOUS YEAR (BLUE) COMPARED WITH MEASURES FROM THE ENTIRE AUSTRALIAN PUBLIC SERVICE (RED).

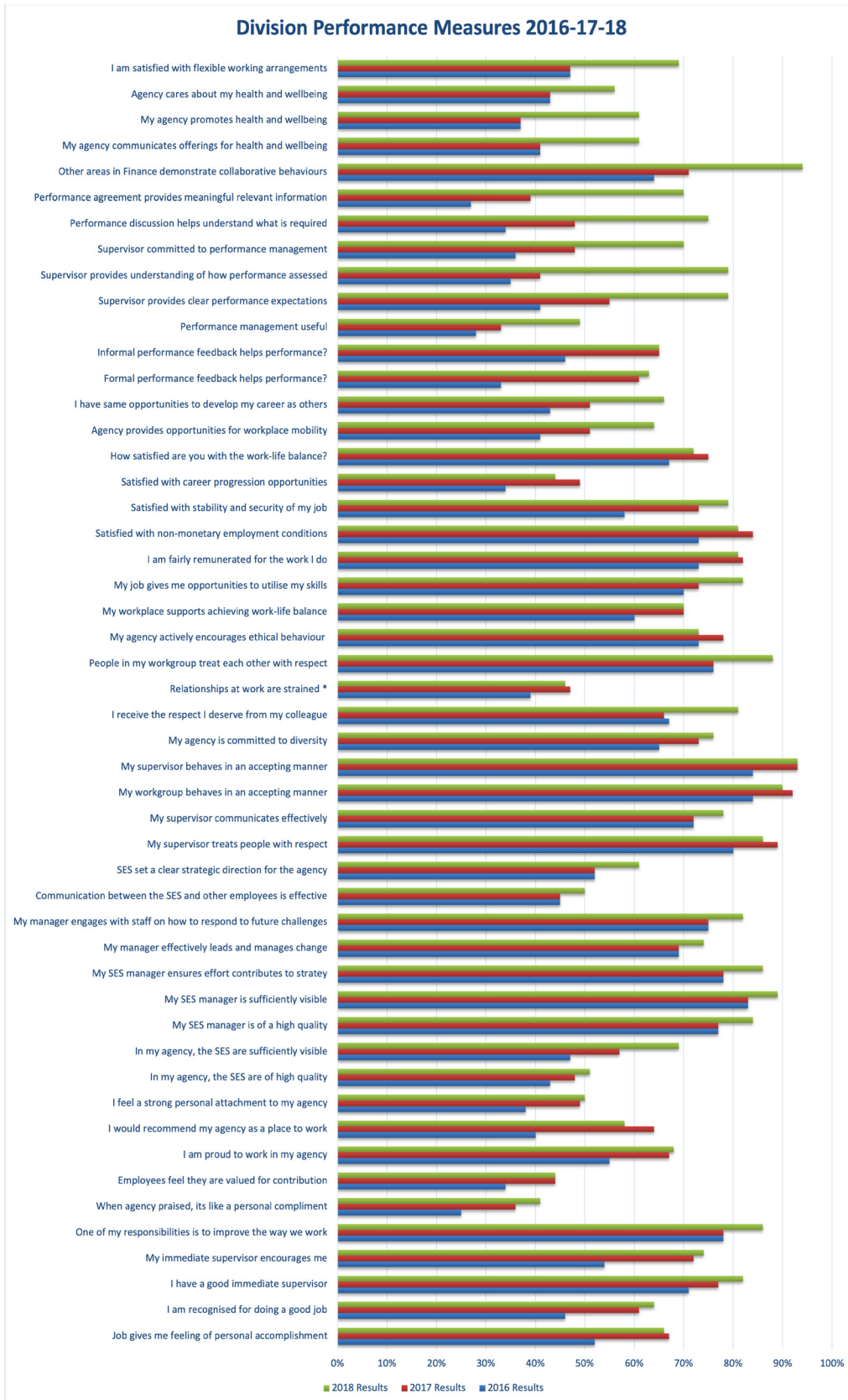


FIGURE 5. REPORTED PERCENTAGE IMPROVEMENTS (COMMISSION 2017, 2018) IN THE AUSTRALIAN GOVERNMENT DEPARTMENT DIVISION 2016 PERFORMANCE MEASURES (BLUE) COMPARED WITH 2017 PERFORMANCE MEASURES (RED) AND 2018 PERFORMANCE MEASURES (GREEN) SHOWING SUSTAINED CHANGE.

CONCLUSIONS

An often-quoted pearl of wisdom is: “theory without practice is empty but practice without theory is blind.”⁷ Of course, theories come in many flavors. Most can be called middle-range theories, confined to particular disciplines without attempting to have a broader explanatory scope. The limited horizons of middle-range theories trap practical applications within disciplinary boundaries.

Evolutionary theory is different. Its explanatory scope already spans the length and breadth of the living world and is now expanding to include *Homo sapiens* as one species in the great tapestry of life.

Using evolutionary theory as a container for bringing together different disciplinary perspectives on cooperation also serves another critical purpose: it connects human activity with every other natural process on the planet. We see human collaboration as the product of millions of years of evolution. Just as every organ within our body naturally cooperates to sustain the life of the organism, humanity has evolved to its position of planetary influence by being better at cooperation than any other species. Of course, humans also fail at cooperation, and just as bodily organs can be plagued by ‘selfish’ cancer cells, human collaborative activities can be undermined by an excessive focus on individualistic self-interest. Cooperation is natural, but, as we have illustrated in this article, we could also cooperate ourselves to collective death unless we bring more awareness to the processes of multilevel cultural evolution.

We conclude this article with a brief discussion of limitations, ethical considerations, integration of cultural diversity, and future directions.

Limitations: While our practical methods stand on a very solid theoretical foundation and evidential base for its two main pillars, Ostrom’s work (for governance) and contextual behavioral science (for adaptability), direct evidence for the efficacy of our methods is only beginning to accumulate. A successful implementation requires a highly knowledgeable facilitator. A solid grounding in ProSocials’ three undergirding philosophies of science—contextual behavioral science, the science of the commons, and multilevel selection theory—is the starting point. They also need to learn enough about the context of the organization to implement the governance and adaptability tools at

multiple levels. This is an art in addition to a science. The process is inherently iterative, with failures as part of the variation/selection/replication process that ultimately leads to success. It requires an idiomorphic (single case) approach to research (Hayes et al., 2022) rather than multi-group methods such as randomized control trials, where interventions are implemented in a cookie-cutter fashion (although RCTs are possible in some settings; see Wilson et al., 2011). Finally, it requires a commitment to a continuous improvement process on the part of the organization, as opposed to leadership training and one-off consultations that are the norm in the business and management fields.

Ethical considerations: The ethical implications of the two case studies reported in this article were overwhelmingly positive. In essence, those involved were invited to ask themselves, “*What if we embraced human and planetary needs as our primary organizing principle?*” This orientation naturally had them articulating the moral principles that governed each person’s behavior while conducting group-level activity. Socio-ecological systems that nurtured life emerged. Not only did staff members thrive within their workplace, but the organization performed better as a result. This is in contrast to the neoclassical economic paradigm, where what seems like best practices (e.g., the shareholder value model, “rank and yank” hiring and firing practices) result in both inequities within the organization and negative externalities outside the organization (Wilson and Snower, 2024).

Multilevel selection is finely attuned to the disruptive potential of self-seeking in individuals and group-seeking at lower levels of a multi-tier hierarchy of groups, such as cronyism, nepotism, competition among departments within an organization, and elites gaining at the expense of the whole organization. The CDPs can be seen as a set of measures that protect against this kind of disruption within a given group, but that leaves open the effect of the group on other groups, or more generally the larger cultural ecosystem within which any group is embedded. Fortunately, the seventh and eighth CDPs address this issue by establishing that interactions within and between groups need to be governed by the same principles (scale independence). A truly prosocial group takes responsibility for its externalities in addition to its internalities. This is not just wishful thinking and positive examples can be found, such as the B-Corp and

7 This quote is variously attributed to Emmanuel Kant, Karl Marx, and Vincent Ostrom.

Conscious Capitalism movements (e.g., Marquis, 2020; Mackay and Sisodia, 2014; Chapman and Sisodia, 2015) which have converged upon good governance and adaptability practices and extended them to between-group interactions in their own ways.⁸ One benefit of the multilevel evolutionary perspective, as we have stressed throughout this article, is to identify the common denominators so that the relevance of positive examples such as these can be appreciated beyond their current disciplinary boundaries.

We do not mean to imply that the ethical discourse that takes place within the multilevel perspective is always simple. The most important ethical problems are inherently complex from any perspective. Nevertheless, we believe that conscious multilevel cultural evolution provides an excellent way to navigate ethical problems, which is far better than some of its major alternatives such as the neoclassical economic paradigm (Wilson and Snower, 2024).

Integration of cultural diversity: In the final passage of *On the Origin of Species*, Darwin wrote “endless forms most beautiful and most wonderful have been, and are being, evolved.” Dual inheritance theory encourages us to think about human cultural diversity in the same way. The fact that every enduring cultural form, like every enduring species, is impressively adapted to its environment inspires a kind of respect and awe that biologists feel toward the species that they study—even when the species exist in a conflictual relationship with each other. Thinking of human cultural forms as like biological species also attunes us to the phenomenon of evolutionary mismatch—cultures that are impressively adapted to their past but not necessarily their current environments—revealing the need for conscious multilevel cultural evolution in the present.

The acronym WEIRD refers to cultures that are Western, Educated, Industrial, Rich, and Democratic (Henrich et al. 2010; Henrich 2020; Apicella et al. 2020). Because the vast majority of science and scholarship has taken place in WEIRD cultures, there has been a huge bias toward confusing a partic-

ular cultural form with human nature writ large. Not only does generalized Darwinism help to overcome this bias, but it provides a solid theoretical framework for understanding cultural diversity, rather than “anything goes.” For example, in his book *Sand Talk: How Indigenous Thinking Can Change the World*, Tyson Yunkaporta (2020, p. 26) describes the assertion of lower-level interests over higher-level interests as “the most destructive idea in existence” and states that “Aboriginal society was designed over thousands of years to deal with this problem.”⁹ The checks and balances that operate in Aboriginal societies are much like the CDPs described in this article. Yunkaporta also shows how Aboriginal societies are far more holistic than atomistic WEIRD societies, easily regarding themselves as part of a larger whole. This means that WEIRD societies have much to learn from aboriginal and other indigenous societies, in a way that is consistent with generalized Darwinism.

Future directions: Darwin’s theory of evolution did not replace previous knowledge of the natural world. Instead, it organized previous knowledge and the search for new knowledge, like many pieces of a jigsaw puzzle snapping together. A comparable synthesis is now taking place for human cultural evolution, generalizing rather than replacing knowledge relevant to positive change efforts across all topic areas and scales. The case studies reviewed in this article provide a solid proof of concept at the scale of two Australian government agencies, with exceptional documentation provided by the Australian Public Service Employee Census data. We know that many other successful positive change efforts have taken place, which do not have the recognition they deserve because they are trapped inside disciplinary boundaries. Once the common denominators of these efforts are understood, we look forward to a surge of coordinated activity to consciously evolve a world that works for all.

8 Also see the *This View of Life* podcasts “Conscious Capitalism, Viewed Through the Lens of a New Paradigm, with Raj Sisodia and Bob Chapman,” <https://www.prosocial.world/posts/conscious-capitalism-viewed-through-the-lens-of-a-new-paradigm-with-raj-sisodia-and-bob-chapman> and “The B-Corp Movement, Viewed Through the Lens of a New Paradigm,” <https://www.prosocial.world/posts/the-b-corp-movement-viewed-through-the-lens-of-a-new-paradigm>

9 Go here for a video interview with Yunkaporta hosted by Wilson: <https://www.humanenergy.io/science-of-the-noosphere-series/indigenous-views-of-society>

APPENDIX

Australian Government Agency Survey Questions*Employee Engagement: Say, Stay, Strive*

- I enjoy the work in my current job
- I am proud to work in my agency
- I would recommend my agency as a good place to work
- I feel a strong personal attachment to my agency
- I feel committed to my agency's goals
- My agency inspires me to do the best in my job
- I am happy to go the 'extra mile' at work when required
- I work beyond what is required in my job to help my agency achieve its objectives
- I believe strongly in the purpose and objectives of my agency
- I believe strongly in the purpose and objectives of the APS
- When someone praises the accomplishments of my agency, it feels like a personal compliment to me

Communication and Change

- My supervisor communicates effectively
- My SES manager communicates effectively
- In my agency, communication between senior leaders and other employees is effective
- When changes occur, the impacts are communicated well within my workgroup
- Staff are consulted about changes at work
- Change is managed well in my agency
- In general, risk is managed well in my agency
- Innovation-Finding new solutions to problems is important
- My agency prioritizes: Developing new ideas-Employees are encouraged to make suggestions
- Employees who get ahead in my agency are: Able to generate new ideas
- Most managers in my agency are people who: Encourage innovation
- My agency recognizes and supports the notion that failure is a part of innovation
- I suggest ideas to improve our way of doing things
- In my agency, senior leaders give their time to identify and develop talented people
- In the last 12 months, has your workgroup implemented any innovations? YES

Senior Leadership

- In my agency, senior leaders effectively lead and manage organizational change
- My SES manager presents convincing arguments and persuades others toward an outcome
- My SES manager promotes cooperation within and between agencies
- In my agency, senior leaders encourage innovation and creativity
- My SES manager creates an environment that enables us to deliver our best
- In my agency, senior leaders ensure that work effort contributes to the strategic direction of the agency and the APS
- In my agency, the senior leadership is of a high quality
- In my agency, the SES clearly articulates the direction and priorities of our agency
- In my agency, communication between SES and other employees is effective
- In my agency, the most senior leaders are sufficiently visible (e.g. can be seen in action)
- Senior leaders in my agency lead by example in ethical behavior

Immediate Supervisor

- My supervisor communicates effectively regarding the business risks that impact my workgroup
- In general, employees in my agency feel they are valued for their contribution
- Most managers in my agency are people who: Ensure their team delivers
- My immediate supervisor encourages me
- I have a good immediate supervisor
- My supervisor provides me with regular and constructive feedback

Current Job & Workgroup Performance

- My job gives me opportunities to utilize my skills
- I have a choice in deciding how I do my work
- Where appropriate, I am able to take part in decisions that affect my job
- I am clear what my duties and responsibilities are
- I am satisfied with the recognition I receive for doing a good job

- I am fairly remunerated (e.g. salary, superannuation) for the work that I do
- I am satisfied with my non-monetary employment conditions (e.g. leave, flexible work arrangements, and other benefits)
- I am satisfied with the stability and security of my job
- I am confident that if I requested a flexible work arrangement, my request would be given reasonable consideration
- I understand how my role contributes to achieving an outcome for the Australian public
- My agency routinely applies merit in decisions regarding engagement and promotion
- My job gives me a feeling of personal accomplishment
- To what extent do you agree that your most recent formal performance feedback will help you improve your performance?
- My overall experience of performance management in my agency has been useful for my development
- My performance discussion helps me understand what is required of me and how this can be achieved
- My performance agreement provides me with meaningful and relevant information that enables me to perform my role
- My workplace provides access to effective learning and development
- My workgroup has the tools and resources we need to perform well
- The people in my workgroup use time and resources efficiently
- I have a clear understanding of how my work group's role contributes to my agency's strategic directions
- The people in my workgroup cooperate to get the job done
- My agency prioritizes: People-Team cohesion is important
- The agency deals with underperformance effectively
- My agency emphasizes: Delivery-Completing tasks is important
- My agency prioritizes: Achieving Goals-Work must be completed to a high standard
- When my immediate supervisor identifies a problem he or she takes responsibility for it
- When senior leaders in my agency identify a problem they take responsibility for it
- People in my agency are encouraged to speak up when they identify a serious policy or delivery risk
- In my agency, people are expected to admit mistakes and learn from them
- The people in my workgroup are honest, open, and transparent in their dealings
- My agency actively encourages ethical behavior by all of its employees
- During the last 12 months and in the course of your employment, have you experienced discrimination on the basis of your background or a personal characteristic? NO
- During the last 12 months, have you been subjected to harassment or bullying in your current workplace? NO
- Excluding behavior reported to you as part of your duties, in the last 12 months have you witnessed another APS employee in your agency engaging in behavior that you consider may be serious enough to be viewed as corruption? NO

Australian Government Department Division Survey

Questions

- My job gives me a feeling of personal accomplishment
- I am recognized for doing a good job
- I have a good immediate supervisor
- My immediate supervisor encourages me
- One of my responsibilities is to improve the way we work
- When the agency is praised, it's like a personal compliment
- Employees feel they are valued for their contribution
- I am proud to work in my agency
- I would recommend my agency as a place to work
- I feel a strong personal attachment to my agency
- In my agency, the SES are of high quality
- In my agency, the SES are sufficiently visible
- My SES manager is of a high quality
- My SES manager is sufficiently visible
- My SES manager ensures effort contributes to strategy
- My manager effectively leads and manages change
- My manager engages with staff on how to respond to future challenges

Code of Conduct

- When someone in my immediate workgroup identifies a problem they take responsibility for it

- Communication between the SES and other employees is effective
- SES set a clear strategic direction for the agency
- My supervisor treats people with respect
- My supervisor communicates effectively
- My workgroup behaves in an accepting manner
- My supervisor behaves in an accepting manner
- My agency is committed to diversity
- I receive the respect I deserve from my colleague
- Relationships at work are not strained
- People in my workgroup treat each other with respect
- My agency actively encourages ethical behavior
- My workplace supports achieving work-life balance
- My job gives me opportunities to utilize my skills
- I am fairly remunerated for the work I do
- I am satisfied with non-monetary employment conditions
- I am satisfied with the stability and security of my job
- I am satisfied with career progression opportunities
- I am satisfied with my work-life balance
- My agency provides opportunities for workplace mobility
- I have the same opportunities to develop my career as others
- Formal performance feedback helps performance
- Informal performance feedback helps performance
- Performance management is useful
- My supervisor provides clear performance expectations
- My supervisor provides an understanding of how performance is assessed
- My supervisor committed to performance management
- My performance discussions help me understand what is required
- My performance agreement provides meaningful relevant information
- Other areas in Finance demonstrate collaborative behaviors
- My agency communicates offerings for health and wellbeing
- My agency promotes health and wellbeing
- My agency cares about my health and wellbeing
- I am satisfied with the flexible working arrangements

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