

# Regulatory Scope and Its Mental and Social Supports

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## Abstract

Adaptive functioning requires the ability to both immerse oneself in the here and now as well as to move beyond current experience. We leverage and expand construal-level theory to understand how individuals and groups regulate thoughts, feelings, and behavior to address both proximal and distal ends. To connect to distant versus proximal events in a way that meaningfully informs and guides responses in the immediate here and now, people must expand versus contract their regulatory scope. We propose that humans have evolved a number of mental and social tools that enable the modulation of regulatory scope and address the epistemic, emotive, and executive demands of regulation. Critically, across these tools, it is possible to distinguish a hierarchy that varies in abstractness. Whereas low-level tools enable contractive scope, high-level tools enable expansion. We review empirical results that support these assertions and highlight the novel insights that a regulatory-scope framework provides for understanding diverse phenomena.

## Keywords

prediction, planning, regulation, change, construal level

People spend much of their lives in the pursuit of desired ends, from very basic needs such as food to more complex needs such as maintaining positive social relationships. Both individuals and groups are continually involved in a host of processes that are required to address the epistemic (e.g., “What is it?” and “What do I expect?”), emotive (e.g., “What do I want?”), and executive (e.g., “What do I do?”) demands of regulation. That is, people simulate events, evaluate and set goals, and take action to achieve desired outcomes. Moreover, desired ends can vary in their proximity. Food may be spatially close or distant; a person might plan to meet someone tomorrow or 2 months from now; the target of a persuasive appeal might be someone very socially proximal (e.g., a member of a social in-group) or someone socially distant (e.g., an out-group member); a group might strive toward an achievement that seems like a near certainty or a distant chance.

Construal-level theory (CLT) has defined psychological distance as the extent to which such objects and events are removed from the self, here and now (Trope & Liberman, 2010). An object can vary in proximity along any of the four dimensions of psychological distance:

time, space, social distance, and likelihood. In this article we build on this conceptualization of psychological distance, as well as other basic principles developed in the context of CLT, to address how people (as individuals or collectives) address the epistemic, emotive, and executive demands of regulation when desired ends vary in their proximity. By leveraging core concepts from CLT to explicitly address the question of how people regulate toward desired ends, we develop a theory of regulatory scope that introduces novel insights and generates innovative new research questions. At the heart of this theory is the proposition that individuals and groups pursue goals using an array of mental and social tools that can be organized by a common concept of level. Moreover, we argue that higher level tools (vs. lower level tools) enable both individuals and groups to expand (vs. contract) the range of desired ends they consider, evaluate, and act on.

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## Expanding CLT to Directly Address Regulation

CLT has traditionally proposed that psychological distance influences the level of abstraction at which an object or event is mentally represented, such that increasingly distant objects are construed in increasingly abstract terms (Liberman & Trope, 2008; Trope & Liberman, 2010). For example, when imagining a future leisure activity, a person might think of it as “having fun” in the distant future (focusing on its central characteristic and omitting incidental details) and as “playing a pickup game at the local basketball court” as the activity grows closer (focusing more on specific, incidental details that distinguish one leisure activity from another). To date, much of the emphasis of CLT has been on how distance changes the level at which people construe (i.e., mentally represent, understand, and predict) events and how this in turn affects judgment, decision making, and behavior. In this article, we consider not only this epistemic challenge of representing and predicting distant objects or events but also the emotive and executive challenges associated with distance.

Functional regulation requires not only representing events of varying psychological distance but also connecting to them and relating them to direct experience. That is, effective regulation requires addressing the question “What should I do *right now?*” in a way that is meaningfully informed and guided by distal considerations. Thus, whereas traditional CLT has focused on distance, we introduce the concept of *regulatory scope* to capture the regulational necessity of connecting what is remote to one’s current experience. The distinction between distance and scope can be briefly summarized as the following (we elaborate more later): Whereas psychological distance traditionally refers to how remote an object or event is from egocentric direct experience (how far away it is), scope refers to the span of psychological distance over which one is capable of regulating (how far I can reach). To illustrate this distinction, imagine a job applicant who considers the outcome of being offered an enormous salary at a new job. The distance of this outcome reflects how far it is from the applicant’s direct experience—is it a near-future and likely outcome or a distant-future and improbable outcome? Regardless of the outcome’s distance, however, the applicant’s regulatory scope includes the outcome only if it expands to *connect* the applicant to the outcome—does the applicant simply fantasize about it or use that information to try to attain it? The notion of considering a psychologically distant event encompasses the former, whereas the notion of including it in one’s scope requires the latter. To regulate toward distant and proximal outcomes,

individuals must expand and contract their regulatory scope to encompass and connect to those outcomes.

Connecting to distal versus proximal ends poses important challenges for the regulating entity. When people broaden their scope to connect to more distant ends, they must find a way to address the differences between those ends and “me in the here and now,” as well as points in between. The variability of those points increases as the scope broadens: Distant ends are more likely than proximal ends to differ from current experience and to involve greater variability on the road from here to there (e.g., planning for a day next year requires addressing greater variability than planning for tomorrow). Effective regulation toward a distal end requires finding a single course of action that can accommodate and navigate this increasing variability—an efficient policy that is sensitive to the diverse span of possibilities while also providing consistency and stability of direction and purpose.

In contrast, when people contract their scope to connect to more proximal ends, they must find a way to capitalize on local opportunities. In other words, as the scope contracts, the central challenge for effective regulation becomes focusing on the narrow range of surrounding circumstances and exploiting their contextual affordances: People must be highly attuned to contextual deviations and maximize their responsiveness to local contingencies and perturbations. Effective regulation toward a proximal end requires fine-tuning and flexibly tailoring behavioral responses to the conditions at hand.

To address these two regulatory challenges of expanding and contracting scope, we propose that people have evolved a number of psychological and social tools. CLT has traditionally highlighted one tool that people use to address the challenges of psychological distance: the level of mental representation, or *construal level*. The level of mental representation of an object becomes more abstract (vs. concrete) to the extent that it focuses on the primary features of the object while treating different secondary features as interchangeable. For example, an apple or orange can be mentally construed at a higher level by thinking about them as *fruit*, which treats the secondary, differentiating features of apples and oranges as interchangeable. The regulatory framework that we propose relaxes the traditional assumption of CLT that the concept of level applies specifically to mental construal. Instead, we suggest that the concept of level may be applied to a variety of things outside the mind as well as within the mind.

We define this broader conceptualization of level in the following way (see also Gilead et al., 2020): Suppose

that Y and Z are two distinct entities (e.g., apples and oranges); X is higher in level than both Y and Z to the extent that X treats Y and Z as functionally equivalent and thus interchangeable for that function. This broader definition can be applied to things outside (as well as inside) the mind: For example, a system of exchange based on money (I will pay you 50 cents for this apple or orange) is higher in level than a system of exchange based on barter (I will trade you this apple only if you have a specific object that I want) because money treats specific objects as functionally interchangeable.

Thus, the current theoretical approach proposes that mental construal is only one of many mental and social tools people have to modulate their regulatory scope when determining what they expect, what they want, and what they will do and that these tools differ in the extent to which they can be characterized as “high-level” tools or “low-level” tools. High-level tools enable a unified response to variability, which we have argued is necessary for effective expansive regulation. Low-level tools enable a finely tuned response to the particular situation at hand, which we have argued is necessary for effective contractive regulation. We suggest that these mental and social tools share a common structure (they can be arranged from higher level to lower level) and a common function (they enable people to expand and contract their regulatory scope, respectively), although they need not be used together.

Regulatory-scope theory further expands on CLT by proposing that the concept of high-level and low-level tools applies to regulation not only by individuals (the traditional unit of analysis for core CLT predictions) but also by groups. For example, a group may use a variety of higher level tools (e.g., communicating via verbal rather than visual media, investing in basic science rather than technology) to coordinate the thoughts, feelings, and behaviors of constituent members toward attaining more distant collective goals. Thus, we propose that the principles of level and scope apply to regulation broadly, not only to the individual but also to any collective entity that strives to achieve desired ends.

## Regulatory Scope

We turn now to discuss in more detail the concept of regulatory scope, which is central for addressing our core question of what enables humans to regulate toward desired ends that vary in their proximity. We define regulatory scope as the range of ends or possibilities that people account for in their goal-directed thoughts, feelings, and behavior. As scope contracts, people focus on a smaller subset of concerns—opportunities that are afforded by local contexts. By contrast, as scope expands, people orient to an increasingly broader range

of ends across time, places, people, and counterfactual alternatives. Scope thus defines the span of possibilities that one attempts to address in goal-directed behavior.

Note that the regulatory perspective we adopt suggests that contracting or expanding regulatory scope requires balancing important trade-offs. Contractive scope allows individuals to exploit opportunities in the immediate context by fine-tuning sensitivities to a narrow range of local contingencies: The decision about what to do now can be fully informed by the immediate context. This expertise in a specific context, however, may render individuals unable to respond if the context changes. Expansive scope, on the other hand, allows individuals to explore and connect to contexts that differ from the here and now by accounting for change and variability: The decision about what to do now can integrate and apply across the current self, the desired end state, and the diversity of experiences that could arise between the two. This ability to accommodate diversity, however, may render individuals less responsive to the contingencies of any particular environment. Optimal regulation thus requires continually finding the right balance between these trade-offs.

To exemplify these trade-offs, consider a person planning a long car trip to visit different parts of the country. Considering what they might do and where they might go requires making decisions in the here and now about activities and locations that are removed from direct experience. To do so, they must expand their regulatory scope. Yet, along their journey, they will inevitably have to stop to eat, refill their gas tank, and rest. They may also wish to exploit some of the local opportunities that present themselves, such as going to a celebrated restaurant for lunch. To identify and capitalize on such local affordances, they must contract their regulatory scope. Thus, successful regulation benefits from both expansive and contractive scope and requires maintaining an effective balance between their respective trade-offs.

## *Distinguishing distance and scope*

The conceptual shift that we make here from psychological distance to regulatory scope is important. First, whereas CLT focuses on a single point at some distance from the self, regulatory scope refers to a range of points extending from self to the psychologically farthest point one might regulate toward. Consider, for example, planning for work meetings. Regulatory scope contracts temporally, spatially, socially, and probabilistically when one is planning only for meetings in the next hour, in one’s office, only with one’s team members, and only when the meetings are certain to take place. By contrast, regulatory scope expands temporally,

spatially, socially, and probabilistically when one's plans also include meetings during the rest of the day, the entire week, or month; in offices in other buildings, cities, or states; with unfamiliar members of other teams or organizations; and that are possible but unlikely to materialize. Thus, because contractive scope is included in expansive scope, as scope expands along any or all of the psychological-distance dimensions, the diversity of the ends one regulates toward increases.

Second, as foreshadowed earlier, whereas CLT focuses on objects that exist at a certain distance from the self (e.g., a talk tomorrow rather than next month), regulatory-scope theory focuses on the distance of and connection to desired end states (e.g., what do I want to achieve in the talk tomorrow/next month, and what should I do now to achieve it?). The self must think, evaluate, and act in relation to these ends to achieve them. The self considers the distance between the self—in the here and now—and the desired end state and works to bridge that distance. In other words, the construct of regulatory scope emphasizes the connection that must exist between a desired end state and the individual or group currently engaging in regulation toward that desired end state.

To further clarify the distinction between distance and scope, it may be useful to consider distance-related phenomena that do not necessarily entail changes in regulatory scope. One such example may be fantasizing. Fantasies are psychologically distant in the sense that they are hypothetical and frequently entail events that are temporally and spatially remote. Research suggests that when people fantasize without attempting to use those experiences to shape thoughts, feelings, and behavior in the here and now, they have little, if any, benefits for regulation. In contrast, when people do connect those fantasies with responses in direct experience (i.e., in our terms, when people expand their regulatory scope to include those fantasized events), they promote the attainment of desired ends (e.g., Oettingen & Mayer, 2002). Likewise, some instances of episodic future-directed thinking (e.g., Atance & O'Neill, 2001; Schacter, Addis, & Buckner, 2007) may represent instances of distance traversal but not a modulation of regulatory scope to the extent that people do not use these event simulations as guides for current responding.

Likewise, intergroup contact between socially distant groups may be more effective when group members expand their regulatory scope to include the distant others in their regulatory efforts (e.g., when cooperating and working toward a common goal; Pettigrew & Tropp, 2006). When intergroup contact occurs without the members of the groups engaging in common activities (which require one group's members to expand their scope to include thoughts, goals, and feelings of the other group's members), scope would not expand,

even if some construal of the socially distal target did occur (e.g., in the form of stereotyping). For example, a one-time interaction with an out-group member does not necessarily require expanding scope, whereas an ongoing friendship often requires the expansion of scope to cooperate and work toward common goals. Interestingly, research suggests that whereas one-time intergroup interactions tend to produce negative outcomes for intergroup relations (e.g., increased anxiety), ongoing intergroup friendships tend to produce positive outcomes (e.g., decreased prejudice; see MacInnis & Page-Gould, 2015), underscoring the importance of distinguishing between connecting to distal others versus simply construing them.

### ***The importance of considering expansive scope***

Research across many areas of psychology notably focuses on contexts in which people seem predisposed toward contractive regulatory scope—toward considering what is psychologically proximal. For example, considerable research has investigated how people behave in situations that involve a trade-off between proximal concerns on the one hand and distal concerns on the other. Research on intertemporal choice has shown that individuals often prefer a near-future reward to a distant-future reward, even when the distant-future reward is larger (e.g., Ainslie & Haslam, 1992; Metcalfe & Mischel, 1999; Read & Loewenstein, 2000). Likewise, the literature on social dilemmas reveals that individuals tend to prioritize their own interests over those of the collective. For instance, in public-goods dilemmas, in which individuals must decide whether to make a personal sacrifice to create a public good that will benefit everyone, people often free ride, preserving their private assets to the detriment of the group (e.g., Fehr & Camerer, 2007; Ledyard, 1995).

The same theme of prioritizing proximal over distal concerns is evident across the entire field of social psychology. Classic social-psychological experiments on social influence (Asch, 1956; Milgram, 1965) vividly illustrate the power of the immediate situation and how readily individuals get caught up in the influence of the psychologically proximal. Research on group processes has shown that as social interactions progress, group members increasingly gravitate toward communication that is confined to those who share their own opinions (Festinger, 1950; Kruglanski, Pierro, Mannetti, & De Grada, 2006). Social-comparison research has demonstrated that people preferentially compare their abilities, opinions, and outcomes to those of a narrow set of similar others (Festinger, 1954; Mussweiler, 2003; Schachter, 1959), which in turn plays a major role in shaping their self-esteem and satisfaction with their attainments and

possessions (Taylor, Wayment, & Carrillo, 1996; Tesser, 1988; Wood, 1989). People prefer the psychologically proximal in-group to the more distant out-groups (Brewer, 2007; Hogg & Abrams, 1988; Tajfel & Turner, 1979); they are more likely to form relationships with those who are spatially close, familiar, and similar to themselves (Byrne, 1971; Festinger, 1954; Newcomb, 1961); and they are more influenced by spatially and socially proximal sources (Echterhoff, Higgins, & Groll, 2005; Latané, 1981). Research on the automatic effects of context on attitudes, goals, and behaviors suggests that individuals tend to adjust their behavior to the specific requirements and affordances of the immediate social situation (e.g., Bargh, 1997; Chartrand & van Baaren, 2009; Gawronski & Cesario, 2013; Ledgerwood & Chaiken, 2007; Payne, Brown-Iannuzzi, & Loersch, 2016). All of these phenomena illustrate regulation that is narrowly focused on the proximal: By modulating responses to meet the demands of the current context, people can effectively relate to and pursue desired ends in their immediate environment.

Yet evidence also suggests that humans, perhaps more than any other species, can expand their mental horizons *beyond* the here and now. Human evolution and history evince the increasing ability of humans to think of themselves in the past and future, in spatially remote places, in hypothetical situations, and from others' perspectives (Liberman & Trope, 2008; Schacter & Addis, 2007; Suddendorf & Corballis, 2007; Tulving, 1985). Regulatory scope may similarly extend beyond the proximal in all of these respects. Individuals are sometimes proactive rather than reactive, capable of maintaining a course of action even when it is locally disadvantageous (Aspinwall & Taylor, 1997). They do not always prefer short-term over long-term outcomes (Fishbach & Trope, 2005; Mischel, Grusec, & Masters, 1969; Mischel, Shoda, & Rodriguez, 1989; Trope & Fishbach, 2000) or their narrow self-interest over that of the collective (Henderson, Trope, & Carnevale, 2006). And people may sometimes try to communicate with, learn from, and engage in give and take with those who are different from themselves (e.g., Ledgerwood, Callahan, & Chaiken, 2014; Troetschel, Hueffmeier, Loschelder, Schwartz, & Gollwitzer, 2011). Thus, whereas contractive regulatory scope sensitizes individuals to dynamic local demands, expansive regulatory scope introduces and maintains the stability of goal-directed effort over time, space, social perspectives, and hypothetical outcomes.

### ***Regulatory scope and level***

We argue that to pursue desired ends that vary from the immediate to the very distant effectively, humans have evolved a wide range of psychological and social tools

that support both contractive and expansive regulation, as well as the ability to functionally modulate regulatory scope according to the situation. We propose that people use these tools to address the epistemic, emotive, and evaluative demands of regulation: What do I expect will happen, how do I feel about it, and what do I do about it? We suggest that these psychological and social tools can be arranged along a hierarchical continuum from low level to high level. Note that some people and cultures may have some tools but not others. We do not argue that all of these tools are used simultaneously but rather that they share a common structure (they vary in level) and function (they can be used—in isolation or combination—to enable the contraction or expansion of regulatory scope).

As noted earlier, past work on CLT has applied the concept of level to the mental construal of objects (Liberman & Trope, 2008, 2014; Trope & Liberman, 2010). Lower level construals are relatively more concrete representations that spotlight those specific details that distinguish an object or event as special and idiosyncratic. Higher level construals, by contrast, are relatively more abstract representations that ignore peripheral details and instead highlight the core and essential features that are true of all possible manifestations of an object or event. Thus, whereas construing a dog as a “Chihuahua” highlights those features that distinguish one dog from another, construing the same dog as a “pet” highlights instead those features that are common of all animal companions (including dogs but also cats and guinea pigs). A high-level construal treats alternative subordinate lower level instantiations as being equivalent to each other and to some extent substitutable. Work to date on CLT has largely centered on how distance influences the level of mental construal and on the downstream consequences of this effect for judgment and behavior (Soderberg, Callahan, Kochersberger, Amit, & Ledgerwood, 2015; see also Stillman et al., 2017).

Regulatory-scope theory expands the notion of level to suggest that it can apply to social tools (e.g., laws, roles) as well as mental tools (e.g., mental representations of an object, goal systems, emotions). In this article, we highlight how these tools address not only the epistemic demands of regulation but also its emotive and executive demands. Further, the use of these tools is not limited to individuals. It also applies to groups and broader collectives. That is, we propose that a regulatory system—whether an individual or a group—has an array of psychological and social tools that enable contractive and expansive regulation. Common across these tools is a hierarchy of levels that vary from essential and generalized (high) to more specific and idiosyncratic (low). Higher level tools treat distinguishable

**Table 1.** Examples of Mental and Social Tools That Expand and Contract Regulatory Scope to Address Epistemic, Emotive, and Executive Concerns

Domain	High-level tools	Low-level tools
Mental	Broad, abstract categories	Narrow, concrete categories
	Symbolic representations	Analogue representations
	Wholes, patterns	Parts, components
	Causes	Effects
	Ideological principles	Specific attitudes
	General group norms	A specific individual's opinion
	Self-conscious and moral emotions	Basic emotions
	Ends	Means
	Intentions	Motor-control procedures
	Social	Powerful
Leader		Follower
General laws		Specific laws
Basic science		Applied science
Formal language		Colloquial language
Monetary economy		Barter economy

Note: Epistemic concerns involve such questions as “What is it, and what should I expect?”; emotive concerns involve such questions as “What do I want?”; and executive concerns involve such questions as “What do I do?” High-level tools serve to expand regulatory scope, whereas low-level tools serve to contract regulatory scope.

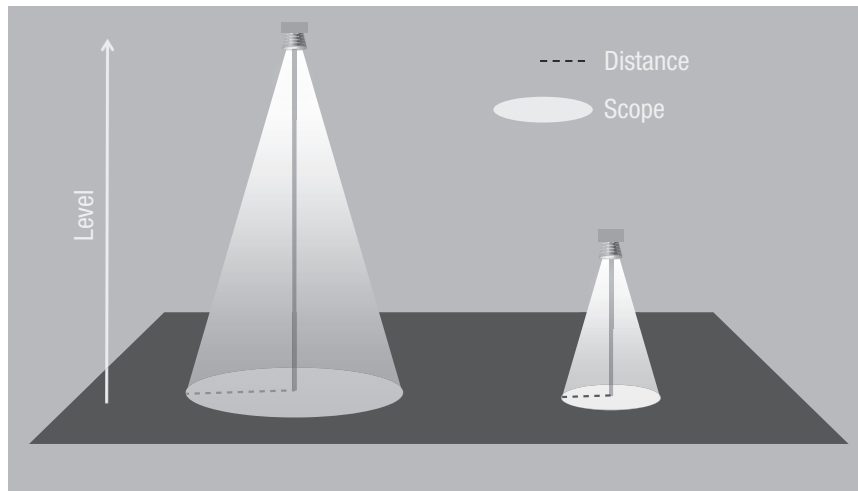
instances as substitutable and equivalent entities, whereas lower level tools emphasize the distinctions between these instances.

Ours is by no means the first theoretical framework to propose that hierarchical systems serve regulation (e.g., Carver & Scheier, 1998; Kruglanski et al., 2002; Powers, 1973; Vallacher & Wegner, 1987). Action-identification theory (Vallacher & Wegner, 1987) and cybernetic theories (e.g. Carver & Scheier, 1998; Powers, 1973), for example, suggest that the representation and implementation of regulated behavior—epistemic and executive functions, respectively—can be understood in hierarchical terms. We advance the novel, integrative insight that the concept of level is a general principle evident across these regulatory functions—one that extends across a broader array of instances than previous individual theoretical frameworks have considered. For example, level may be manifest as positions within a social hierarchy. Whereas higher level managerial positions require addressing more general responsibilities, lower level worker positions require addressing more specialized tasks tailored to each worker's unique mission or function. Similar principles apply to political systems. Whereas central governments—such as national or federal systems—attempt to address the universal concerns of all citizens, local governments—such as town or municipal governments—address more idiosyncratic and specific concerns.

We propose that moving to higher versus lower levels prompts and affords expansive and contractive scope, respectively, for any one of these various mental

and social tools (see Table 1). Because the central and general aspects of an experience tend to be those that remain invariant across time, space, and perspective, high-level tools that incorporate centrality and generality should allow people to transcend the particularities of the here and now and therefore to regulate effectively in pursuit of ends ranging from proximal to distal. In contrast, by highlighting contextual details that distinguish one particular context from another, low-level tools should allow people to exploit local contingencies and therefore to regulate effectively in the pursuit of more proximal ends.

It may be useful to consider an analogy (see Fig. 1). Imagine standing next to a pole affixed with a lantern that can be raised or lowered. When the pole is lowered, the area illuminated by the lantern decreases; however, the intensity of this illumination is more highly focused. When the lantern is raised, the area illuminated by the lantern expands outward, yet the intensity of the illumination is more diffuse. The area of illumination can be used to distinguish psychological distance and regulatory scope. Any given dimension of distance represents the temporal, spatial, social, or likelihood distance between the origin (the self, here and now, at the center of the illumination) and a desired end located at one spot on the circumference of the illuminated area (e.g., a conference that a person wants to hold a year from today). Regulatory scope, in contrast, is represented by the area of the entire illuminated circle—it reflects the full range of regulatory possibilities that the person standing by the lantern can consider



**Fig. 1.** A lantern analogy for regulatory-scope theory. Higher level tools raise the lantern, which expands regulatory scope (i.e., the area of the illuminated circle). Lower level tools lower the lantern, which contracts regulatory scope.

(including the single, focal point on the circumference of the illuminated area but also all the points between that particular desired end and the center and all the points encompassed along other distance dimensions as well). The trade-offs associated with contractive and expansive scope are captured by the intensity of the light: Whereas contractive scope allows one to see with high precision but only in a very narrow range, expansive scope allows us to see a broader range of things but with relatively less precision. Meanwhile, level is represented by the height of the pole. To expand one's regulatory scope, one must go up (i.e., use higher level tools to raise the lantern). To contract regulatory scope, one must go down (i.e., use lower level tools to lower the lantern).

In the sections that follow, we discuss in more detail how the principle of level can be used to understand how various psychological and social tools enable contractive and expansive regulation. We organize our review of these tools around three basic and interrelated functions entailed in regulation: epistemic, emotive, and executive. First, people must address the epistemic question of what has happened and what to expect. They must understand what has happened and predict what will happen. Second, people must address the emotive question of what they want. They must determine how to orient toward what they are considering: Is it good or bad; is it desirable or undesirable? Third, people must resolve the executive question of what to do. People must decide how to act and behave in response to a given object or event.

We discuss the various mental and social tools that help contract and expand regulatory scope in the service

of each of these three functions. For each function, we consider two important predictions that follow from our theoretical perspective. First, when individuals are prompted to contract versus expand regulatory scope, they should opt to use lower versus higher level tools, respectively. Second, when individuals are prompted to use a lower versus higher level tool, their predictions, evaluations, and behavior should correspondingly reflect more contractive versus expansive regulatory concerns. What follows is not an exhaustive review; instead, we spotlight specific examples that demonstrate the explanatory breadth and generativity of our theory to issues of regulation and highlight new predictions and key directions for future research.

### **The Epistemic Function of Regulation: What Is It, and What to Expect?**

Successful regulation depends on the ability to correctly identify and anticipate distal and proximal objects and events, generating outcome expectancies to inform what will happen. Much of the existing literature on CLT illustrates the key role that mental construal plays in allowing individuals to expand and contract their mental horizons as they generate these expectancies. We propose that high-level and low-level construal evolved to guide people's expansive and contractive expectations, respectively. Two predictions follow. First, when tasked with anticipating more distant (vs. near) outcomes, people should opt to recruit higher level versus lower level construal, respectively. Second, adopting a given level of construal should adjust a person's regulatory scope. We briefly highlight illustrative

findings from the now considerable literature on construal level and prediction that support these hypotheses before turning to focus on the more novel elements of our current perspective.

Extensive research supports the first prediction. For example, when tasked with determining what to expect in the distant versus near future or in a distant versus near location, people recruit higher level versus lower level construals, respectively (e.g., Henderson, Fujita, Trope, & Liberman, 2006; Nussbaum, Liberman, & Trope, 2006; Nussbaum, Trope, & Liberman, 2003). In one study (Henderson, Fujita, et al., 2006), researchers provided participants with information about both central tendency (e.g., average monthly rainfall in a given area) and variability (e.g., the range of monthly rainfall in a given area) and asked them to generate predictions about a spatially distant (vs. near) location. From our perspective, central-tendency information informs high-level construal of data because it represents the aggregate—a treatment of outcomes as substitutable and equivalent. Thus, people should rely more on central-tendency information when tasked with determining what to expect in the more distant future. Henderson, Fujita, et al. (2006), for example, found that participants who were asked to generate predictions about a spatially distant (vs. near) location tended to judge outcomes that were consistent (vs. inconsistent) with central-tendency information as more (vs. less) likely. This finding supports the notion that people recruit higher level vs. lower level construal when prompted to make expansive versus contractive predictions, respectively.

In contrast, we know of no research to date that has directly tested the second prediction—namely, that being prompted to use higher level versus lower level construals should allow people to anticipate more distant situations in which an outcome might occur. Despite the lack of direct evidence for this prediction, some data can be interpreted as supporting it indirectly. For example, in one study, researchers led participants to construe a series of actions (e.g., “Laura is considering buying a computer”) in either abstract or concrete terms by asking participants either why or how the person would perform the action, respectively (Liberman, Trope, McCrea, & Sherman, 2007, Study 1). Whereas the former considerations involve thinking about how various actions all serve the same abstract superordinate ends, the latter involve thinking about actions in terms of their more specific and concrete subordinate means (see Liberman & Trope, 1998; Vallacher & Wegner, 1987). Participants were then asked to estimate when the person would perform the action in question. Whereas those who had adopted more concrete construals of the actions estimated that they would be

performed relatively soon, those who adopted more abstract construals expected the behaviors to occur in the more distant future. Thus, some evidence may be interpreted as suggesting that high-level (vs. low-level) construal are mental tools that enable people to consider more distant (vs. proximal) situations when generating predictions.

In sum, when people are prompted to anticipate and think about events in a contractive versus expansive manner, the extant CLT literature suggests that they tend to leverage low-level or high-level construals, respectively. Moreover, although more research is needed, some evidence appears to indicate that different levels of construal may guide regulation toward psychologically near versus distant situations, contracting and expanding the range of possibilities people entertain as they anticipate events. This body of evidence collectively suggests that low and high levels of mental representation support contractive and expansive scope to address the regulatory function of determining what has happened and what to expect.

Our regulatory framework points to several novel predictions for future research to test. For example, as suggested above, research should directly test the hypothesis that high-level versus low-level construal enables people to consider more distant situations when generating predictions. For example, asking people to focus on central-tendency information (e.g., average monthly rainfall) versus deviations from that central tendency (e.g., fluctuations from the average rainfall) may lead them to make predictions that extend to a broader range of locations and time points (e.g., rainfall in wider surrounding areas over longer periods of time). To return to our earlier analogy, as one raises or lowers one’s lantern, the range of points one can think about between the central pole and the perimeter of the area of illumination should expand versus contract. Thus, engaging in high-level versus low-level construal should allow people not only to think about the egocentric here and now but also consider possibilities that might occur in more distant locales, to other people, and in less likely scenarios.

### **The Emotive and Executive Functions of Regulation: What Do I Want, and What Do I Do?**

To regulate effectively, people not only must know what to expect from the world around them but also be able to evaluate, want, and act. In other words, regulation involves answering not only the question of what has happened and what to expect but also the question of “what do I want?” and “what do I do?” We



propose that the principle of level can be applied to a wide array of psychological tools that humans have developed to address these emotive and executive functions in a contractive or expansive manner. Below we describe how research on evaluations, emotions, and goals reveals a broad array of mental tools that allow people to expand and contract their mental horizons to address the question of “what do I want?” and “what do I do?”

### **Evaluations**

Evaluations are a key component of effective regulation. By summarizing the extent to which an object is positive or negative, they provide efficient guides for action that facilitate approach and avoidance responding (Katz, 1960; Ledgerwood & Trope, 2010; M. B. Smith, Bruner, & White, 1956; Wilson, Lindsey, & Schooler, 2000). Here we distinguish between different levels of evaluative summarizing.

**Ideologies and values.** Ideological principles and personal values consist of abstract evaluative rules (e.g., “respect tradition”) that treat many specific instances as interchangeable—that is, they reflect abstract information about what is good or bad in general without being tied to a particular object or context (Rokeach, 1968). When people need to expand their regulatory scope to connect to more distal ends, they might therefore recruit ideological values as high-level mental tools to inform their evaluative responses. Consistent with this assertion, one study found that participants’ reported political ideologies more strongly predicted their voting intentions on a policy that was to take effect in the distant relative to near future (Ledgerwood, Trope, & Chaiken, 2010, Study 3; see also Agerström & Björklund, 2009; Eyal, Liberman, & Trope, 2008; Luguri & Napier, 2013). In another study, participants’ personal values more strongly predicted behavioral intentions when those behaviors were to be enacted in the distant compared with near future (Eyal, Sagristano, Trope, Liberman, & Chaiken, 2009). Likewise, participants’ evaluations of a discriminatory event more strongly reflected the general value of equity when participants needed to expand their mental horizons to consider a distant (vs. near) location (Mentovich, Yudkin, Tyler, & Trope, 2016, Study 2). These findings collectively suggest that people rely on ideological principles and personal values when they must expand their regulatory scope to determine what they want and what they do.

Understanding ideologies and values as mental tools that expand regulatory scope also generates novel predictions untested by current research. For example, we predict that activating the use of an ideological principle or value should help people expand their regulatory

scope, allowing them to consider the evaluative and behavioral implications of more distant versus proximal situations (for a related discussion on the effects of self-affirmation, see also Wakslak & Trope, 2009). Thus, thinking about values should lead people to be more responsive to the distant past and future, more distant locations and people, and more remote possibilities when evaluating and choosing how to act in a given situation.

**High-level and low-level social-influence information.** Other’s opinions and attitudes provide a particularly important tool for guiding evaluative responding (Asch, 1955; Deutsch & Gerard, 1955; Sherif, 1935; Turner, 1991). This social-influence information can range from central and prototypical (e.g., information about an average group opinion or normative response) to specific and idiosyncratic (e.g., information about one particular person’s opinion; see Ledgerwood & Wang, 2018). High-level sources of social influence (such as an average group opinion) treat specific and low-level sources of social influence (such as any one particular group member’s opinion) as interchangeable. Thus, when people need to expand (vs. contract) their regulatory scope to evaluate more distal attitude objects, they should rely more on high-level (vs. low-level) social-influence information to guide their evaluative responses toward those objects.

Indeed, research suggests that when people need to evaluate a policy that will take effect in the distant (vs. near) future, they rely more on information about the prototypical group opinion, and less on one specific person’s opinion, about that policy (Ledgerwood & Callahan, 2012; Ledgerwood, Trope, & Chaiken, 2010; see also Ledgerwood, Wakslak, Sánchez, & Rees, 2019; Ledgerwood, Wakslak, & Wang, 2010). Likewise, our perspective would predict that focusing people’s attention on high-level (vs. low-level) social-influence information would lead them to expand their regulatory scope, enabling, for example, the evaluation of more temporally distant events and spatially distant locations.

### **Emotions**

Emotions fulfill basic regulatory functions. They assign positive or negative value of varying intensity to outcomes and implement actions in anticipation of those outcomes. Emotions such as joy, fear, and anger are concrete experiences that all involve reacting to a specific event: Winning a game might prompt joy, a snarling dog might instigate fear, and an insult might elicit anger. However, independent of valence or intensity, humans also experience and express more abstract high-level emotions—those that evaluate and react to

more general sets of circumstances. Emotions such as pride, guilt, and moral outrage all involve comparing an aspect of the current situation to a general, essentialized standard or principle. Pride, for example, results from linking positive events to global-achievement self-standards (e.g., Tracy & Robins, 2004). Likewise, guilt stems from comparing one's behavior to abstract social standards or norms of what is appropriate (Tangney, Stuewig, & Mashek, 2007; Tracy & Robins, 2004), and moral outrage occurs when one evaluates a behavior in light of general moral principles (e.g., Batson, Eklund, Chermok, Hoyt, & Ortiz, 2007; Tetlock, 2002).

The distinction between low-level and high-level emotions may also hold within the same regulatory domain: In interpersonal attraction, lust is a desire to have sex with another person, whereas love is the desire to be with the other person in a great variety of situations, in sickness and in health. Likewise, in coping with danger, fear is specific to a particular threat (heights, snakes, insects), whereas anxiety does not need to have a specific object and can pertain to a variety of objects. In social conflict, anger is tied to a specific provocation, whereas hate can be experienced even without any provocation. In this view, lust is more specific than love, fear is more specific than anxiety, anger is more specific than hate, and disgust is more specific than contempt. Critically, in each case, the high-level emotion may be as intense as its low-level counterpart.

We propose that these different levels of emotion serve as mental tools for contractive and expansive regulatory scope. Fear, for example, may focus us on immediate danger, whereas anxiety may motivate us more expansively to include avoidance of spatiotemporally remote, unlikely, and imaginary threats. Likewise, lust may focus us on a romantic partner who is here and now, whereas love may enable us to envision longer term relations and to desire the romantic partner even when the partner is spatiotemporally remote. Again, such reasoning suggests two predictions. First, inducing differences in regulatory scope (contractive vs. expansive) should evoke emotions of a different level (low-level vs. high-level emotions, respectively). Second, inducing different levels of emotions should prompt regulatory scope to contract and expand accordingly.

Research by Eyal and Bar-Anan (2013, Studies 3a and 3b) supports the first prediction. They asked participants to recall a positive event and then manipulated its perceived temporal distance by suggesting that people tend to feel this way about relatively recent versus distant events. Participants then reported how proud and happy (high-level and low-level positive emotions, respectively) they felt. As predicted, participants who recalled what they thought of as a temporally distant

(vs. near) event reported feeling more proud but less happy. These findings support the notion that expansive versus contractive scope evokes high-level versus low-level emotions.

Research also supports the assertion that low-level and high-level emotions are mental tools that contract and expand regulatory scope. For instance, Eyal and Bar-Anan (2013, Study 4) presented participants with pictures of individuals expressing low-level versus high-level emotions (happiness and sadness vs. pride and shame, respectively). Participants were told that the depicted individuals were recalling specific events and were asked to estimate when that event had occurred. Participants estimated that the event had occurred in the more distant past when it elicited a high-level (vs. low-level) emotional response, consistent with the notion that the level of emotion is tied to regulatory scope.

To realize the full potential of the current framework, future research should continue to explore the distinction between low-level and high-level emotions and their implications for regulatory scope. Our framework suggests, for example, that whereas fear will elicit reactions to dangers nearby, anxiety will elicit reactions to dangers farther away. By extension, fear should also promote a stronger orientation toward the near future and events that are probable, whereas anxiety should promote a stronger orientation toward the distant future and events that are more hypothetical. These predictions highlight the generative potential of the current framework and may provide new insight into the regulatory functions of emotions.

### ***Goals and plans***

Goals are hierarchically organized, with superordinate goals guiding and informing more specific subgoals (Carver & Scheier, 1998). For example, going for a run and lifting weights are subordinate to the high-level goal of doing physical exercise, which in turn is subordinate to the even higher level goal of maintaining good health. Our perspective suggests that as low-level goals are specific and contextualized, they immerse people into what is psychologically proximal, thereby facilitating the contraction of scope. In contrast, the abstractness and generality of high-level goals render them more invariant and broadly applicable to a greater variety of situations, making them more useful for more psychologically distant situations, thereby facilitating the expansion of scope. High-level goals thus enable a more expansive orientation to “what do I want” and “what do I do” compared with low-level goals.

As one might expect from this perspective, research suggests that people tend to focus on means versus

ends when planning for the near versus distant future. Liberman and Trope (1998) found that whereas participants' plans for the distant future referred to higher order ends (e.g., "doing well in school"), their plans for the near future were more focused on subordinate means (e.g., "reading the textbook"). People also differentially weigh means versus ends considerations when planning for near and distant events. Liberman and Trope (1998) found, for example, that as temporal distance increased, interest in attending a lecture increasingly depended on the lecture topic (i.e., the desirability of the superordinate end) rather than on its convenience (i.e., the feasibility of the subordinate means to reach the goal). Similar results have been documented for other distance dimensions, including social distance and hypotheticality (e.g., Fujita, Henderson, Eng, Trope, & Liberman, 2006; Liviatan, Trope, & Liberman, 2008; Todorov, Goren, & Trope, 2007; Wakslak, Trope, Liberman, & Alony, 2006). Thus, whereas superordinate goals expand the scope of planning to include psychologically distant situations, subordinate subgoals and means contract the scope of planning to psychologically proximal situations.

Furthermore, if superordinate goals help expand regulatory scope, then bringing to mind higher order goals might increase a person's consideration of even unrelated long-term outcomes. There is some indirect evidence for this prediction. In one study by Fujita, Trope, Liberman, and Levin-Sagi (2006), participants first generated either superordinate ends or subordinate means of engaging in an activity (i.e., maintaining one's physical health). They then made a series of decisions that required trade-offs between the magnitude and timing of rewards. The activation of higher order goals (vs. lower order subgoals) promoted preferences for larger, later rewards over smaller immediate rewards, suggesting greater sensitivity to the long term. In another study, Levy, Freitas, and Salovey (2002) observed that people who tend to focus on superordinate ends rather than subordinate means showed a greater willingness to extend their help even to those who were dissimilar to themselves, suggesting greater sensitivity to socially distant others.

Future research should focus on directly testing the hypothesis that bringing to mind higher order goals can increase sensitivity to even unrelated distal outcomes. We would predict, for example, that organizations who set abstract high-level versus concrete low-level goals should be characterized by extended temporal horizons, greater openness to diversity, and concern for more distant global communities. These benefits of setting abstract goals on promoting expansive regulatory scope may provide an important complement to

research highlighting the contractive regulatory benefits of setting specific, discrete, and concrete goals (e.g., Locke & Latham, 2006). Moreover, such research would provide greater insight into the regulatory functions of high-level versus low-level goals beyond organization and structure (e.g., Carver & Scheier, 1998; Kruglanski et al., 2002; Powers, 1973)—high-level goals may also facilitate regulation by modulating scope.

The principles of regulatory scope and level also appear to extend to the organization of motor systems that control behavior. Theories of motor control highlight the hierarchical organization of procedures that are necessary for translating intentions into specific actions (Badre, 2008; Morsella, 2005; Wolpert, 1997). Higher levels of these hierarchies provide guidance as to the broader outcomes actions are attempting to produce, whereas lower levels detail the specific motor procedures that are necessary to execute those actions. For example, the plan to press the right versus left key in response to a stimulus is represented at higher levels; the specific motor scripts and programs necessary for the proper coordination of hand and finger muscles are represented at lower levels. Our framework suggests that this hierarchical structure has important implications for expanding and contracting the regulatory scope of motor behavior.

Evidence for this assertion comes from research on emulation by Genschow, Hansen, Wanke, & Trope, (2019), who suggested that whereas low-level action control guides the emulation of psychologically near models, high-level action control guides the emulation of more distant models. In one study, participants observed models who were depicted as pressing one of two keys using their left or right hand. Participants were tasked with copying the models' intentions by hitting the correct key as well as imitating their motor behavior by using the appropriate hand. Fewer key relative to hand errors suggests higher level, intention-based imitation relative to lower level, movement-based imitation by participants. Critically, the perceived spatial distance of the models was manipulated by depicting them at different locations in a picture of a landscape. As expected, participants made fewer key relative to hand errors when the model was perceived as farther away, suggesting that distance led participants to switch from low-level, movement-based to high-level, intention-based imitation. This and analogous findings obtained with temporal distance suggest that high-level versus low-level action control supports expansive and contractive emulation—emulation of models outside versus inside one's immediate locale, respectively (Hansen, Alves, & Trope, 2016).

## Summary

Taken together, the research described above suggests that high-level and low-level regulatory tools that address emotive and executive functions serve to expand and contract regulatory scope. Low-level evaluations, emotions, and goals—by incorporating specific and idiosyncratic details—enable individuals to attach value, affectively react to, and plan for psychologically proximal situations. In contrast, the high-level counterparts of these regulatory tools—by treating individual instances as interchangeable—allow individuals to attach value, affectively react to, and plan for psychologically distal situations. Hence, when individuals are called on to expand (rather than contract) their regulatory scope, they should increasingly rely on high-level evaluations, emotions, and goals. For example, when individuals seek to achieve distant-future (vs. near-future) outcomes, they are likely to weigh more heavily their high-order goals rather than their subordinate goals in guiding their action in the present. Correspondingly, individuals focusing on their high-level (rather than low-level) evaluations, emotions, and goals should be predisposed to expand their regulatory scope to include relatively distant situations. For example, when individuals focus on their superordinate goals (rather than subordinate goals), their current plans are more likely to expand to include psychologically remote outcomes.

## Beyond the Individual: Social Tools Support Expansive and Contractive Scope

In this section, we expand our discussion of level and regulatory scope beyond the individual. Just as individuals must coordinate their thoughts, feelings, and behavior, so too must larger social units such as dyads, groups, organizations, and societies. We suggest that the same principle of level that characterizes the psychological tools that individuals use to expand and contract regulatory scope also applies to these larger social entities. That is, we propose that as social creatures, humans have developed social structures within groups and societies to facilitate contractive and expansive regulation. We suggest that one can distinguish between high-level social tools that are more central, general, and superordinate and low-level social tools that are decentralized, subordinate, and specific.

The principles of regulatory scope and its social tools can be observed within social systems: To function effectively, a society must be able to regulate both contractively and expansively; socioanthropological research could identify how societies develop the tools that enable this regulation as well as how these tools

achieve their function. Such research might reveal that regulatory scope and high-level social tools have coevolved over history and phylogeny. Thus, the need to manage increasing social diversity, complexity, and change may have prompted and been supported by transitions to higher level social tools. For example, a transition from nonverbal to verbal communication may have supported expansive information exchange; a transition from a barter economy to a monetary economy may have supported expansive good exchange; and a transition from concrete religious rituals to abstract moralizing gods may have supported expansive trust in people (see, e.g., Whitehouse et al., 2019). Nonverbal communication, barter economies, and religious rituals might be suitable for contractive information exchange, goods exchange, and social trust within small, homogeneous, and stable environments. In contrast, verbal communication, monetary economies, and abstract moralizing gods might accommodate larger, more heterogeneous and changing environments.

Although social tools emerge in social groups and systems, they play out at the level of the individual mind: That is, these tools take on a mental reality that guide people's thoughts and behaviors, which then aggregate to enable a society to function effectively. Below we consider this perspective as it applies to social roles, government and law, occupations, and language.

## High-level and low-level social roles

Social roles are often organized hierarchically. Groups and organizations contain both superordinate, central roles as well as more subordinate, specific roles. For instance, the administration of a university is hierarchically organized, with a president in the most superordinate and general role and various directors and managers in a series of more specific, subordinate roles. From the current perspective, these roles may serve as social tools for regulating expansive and contractive action. Whereas superordinate roles may be associated with goals and tasks that help people expand their mental horizons, subordinate roles may be associated with goals and tasks that help people focus on the here and now.

Research consistent with this proposal has shown that holding relatively high power or status roles is associated with more abstract thinking (Magee, Milliken, & Lurie, 2010; Magee & Smith, 2013; Reyt & Wiesenfeld, 2015; P. K. Smith & Trope, 2006; P. K. Smith, Wigboldus, & Dijksterhuis, 2008; Wakslak, Smith, & Han, 2014; Wiesenfeld, Reyt, Brockner, & Trope, 2017). More pertinently, some initial research suggests that one's hierarchical position may modulate regulatory scope: Joshi and Fast (2013) reported that people assigned to

high-power versus low-power roles were more likely to prioritize larger, later rewards over smaller immediate rewards (see Zhang & Smith, 2018). Similar dynamics may characterize leaders versus followers. Whereas leadership roles tend to be associated with expansive scope—such as thinking about collective goals and planning for the future, follower roles tend to be associated with contractive scope—focusing on individual actions and implementing the leader's instructions in the here and now (for related research, see Berson & Halevy, 2014; Berson, Halevy, Shamir, & Erez, 2015). Future research should directly test whether adopting various superordinate versus subordinate social roles expands and contracts an individual's regulatory scope, respectively.

### ***High-level and low-level governing and legal systems***

Like roles, laws and rules are often hierarchically organized. For instance, the United States has a central, superordinate federal government with federal laws that apply to everyone in the country. Moving down the hierarchy, there are state laws, city ordinances, and finally rules or policies at the neighborhood or even household level. We suggest that centralized, superordinate laws help members of a society regulate expansively: They tell each person what is appropriate or allowed in general—across situations, time, and different individuals—and provide standards against which to judge anyone's behavior, regardless of context. Federal laws against homicide provide a straightforward example: They convey that murder is typically wrong, regardless of when or where it takes place or who perpetrates it. In contrast, subordinate laws and rules help individuals regulate contractively: They tell each person what is appropriate in the immediate area and help people to adapt and interact effectively within their local context. For instance, a local rule in New York City's Central Park directs individuals to run counterclockwise around the Jackie Onassis Reservoir. This rule serves a very small-scale social-coordination function that helps people avoid collisions when they are engaged in a particular activity at this particular location. In other words, considering higher or lower level laws may help individuals to expand and contract their mental horizons.

### ***High-level and low-level divisions of labor***

Within a society, different disciplines and careers may provide social tools for modulating scope. For instance, whereas some areas of specialization (such as basic sciences) focus on understanding core, fundamental

processes and discovering general, invariant principles, others (such as technology and applied sciences) focus on developing specific applications of knowledge within a particular context. We suggest that occupations oriented toward developing core principles should facilitate expansive scope: Because these areas focus people on identifying broad, general principles, the individuals within them should be more likely to think about the relatively distant past or future, how the knowledge generated might help in a faraway location, and what is possible rather than certain. In contrast, areas that focus on specific applications should facilitate contractive scope because they focus people on specific instantiations and contextual details.

### ***High-level and low-level media of communication***

As noted earlier, language may provide another social tool for expanding and contracting regulatory scope. In evolutionary history, language enabled people to transcend the distance between self and other using symbolic representations that omitted the context-dependent features of objects to focus instead on their central and essential features, thereby treating specific instances as interchangeable. Consider, for example, the word "frog," which treats as interchangeable any one particular frog; likewise, the word "jump" treats as interchangeable any particular instance of jumping. Some theories even suggest that thinking evolved as an internalized form of social communication (e.g., Dennett, 1992; Vygotsky, 1987)—first people spoke to others and then they began to speak to themselves. Language as a social tool may have thus provided the first evolutionary seeds for our ability to think abstractly.

Supporting the notion that language affords expansive scope, words (vs. pictures) tend to expand temporal, spatial, and social horizons (Amit, Algom, Rim, Halbeisen, & Trope, 2019; Amit, Algom, & Trope, 2009; Carnevale, Fujita, Han, & Amit, 2015). For example, Carnevale and colleagues (2015) showed that dieters were more likely to evaluate food on the basis of health relative to taste dimensions when those foods were presented as words rather than pictures—reflecting greater responsiveness to their longer term health goals over shorter term hedonic enjoyment considerations. Moreover, language and pictures may play different roles in communication with near and distant people. We would expect verbal messages to facilitate expansive communication and pictorial messages to facilitate contractive communication. Indeed, Amit, Wakslak, and Trope (2013) found that to communicate with targets who were proximal versus distal in time, space, or social distance, people preferred to use pictures versus

words, respectively (see also Torrez, Wakslak, & Amit, 2019). This research further reveals that people's preferences of message targets were influenced by the communication medium: They preferred to communicate with distant versus proximal targets when asked to communicate via words versus pictures, respectively. Verbal media may thus serve to expand the range of people one can reach and influence.

Language itself, moreover, varies in level of abstraction. Whereas action verbs ("she hammers," "he runs") reflect the concrete, perceptual features of a specific event, adjectives reflect abstract properties that generalize across situations ("she is strong," "he is fast"; Semin & Fiedler, 1991). Thus, language may represent a tool that supports the expansion versus contraction of regulatory scope. Indeed, research suggests that people use more abstract language to describe the actions of another versus oneself (Semin & Fiedler, 1989; see also Fiedler, Semin, Finkenauer, & Berkel, 1995), to describe spatially distant versus near events (Fujita, Henderson, et al., 2006), and to address another politely versus colloquially (i.e., in a socially distant vs. close manner; Stephan, Liberman, & Trope, 2011). Similar patterns emerge when analyzing natural language use in social media. Snefjella and Kuperman (2015, Study 1) found that the concreteness of language used in more than 700,000 tweets to describe any one of 30 cities decreased as the geographical distance between the message author and the city center increased (see also Bhatia & Walasek, 2016). Increasingly abstract language should similarly foster increasingly expansive scope. Semin and Smith (1999, Study 2) found that linguistic abstractness affects the temporal distance of the events that people recall, consistent with this hypothesis. Specifically, recalling a time when they displayed "helpfulness" (abstract adjective) versus "helped someone" (concrete verb) led participants to retrieve more distant past memories. Thus, people use abstract versus concrete language when prompted to expand and contract regulatory scope, and the use of these tools appears to affect the breadth of people's scope.

Societies often try to promote and maintain a centralized, general language that everyone knows and speaks (e.g., the official language of a country), but they also develop and maintain more peripheral and specialized languages (e.g., regional dialects, technical terms and acronyms in a particular industry, slang). Whereas the central language helps individuals communicate across time, space, and social contexts, the specialized terms often facilitate communication within and about particular contexts. Viewed from the current perspective, central languages afford expansive scope, enabling individual members of a society to transcend the particularities of their immediate situation and understand

what was written in the past, preserve information for the future, and communicate with other members of the society who may be very different from themselves. Peripheral languages, meanwhile, afford contractive scope: They facilitate interactions in the here and now with socially proximal others. An interesting research question, then, is whether official centralized languages use more abstract terms than do localized languages and dialects, as a regulatory-scope framework might suggest.

### ***High-level monetary systems and low-level barter systems***

Like language, money may have evolved as a social tool for expansive versus contractive regulatory scope. Monetary systems, relative to barter systems, facilitate the treatment of specific commodities as interchangeable entities. Corn and haircuts are distinct commodities, yet having a monetary system allows one to treat each as these as substitutable objects of equivalent monetary value—thereby facilitating their exchange. Thus, a monetary system, relative to a barter system, may be a social tool for expanding regulatory scope.

Providing some tentative evidence for the idea that money can serve as a high-level social tool, research by Hansen, Kutzner, and Wänke (2013) suggests that reminders of money lead people to construe events in higher level terms. In one study, money (vs. control) cues led people to categorize objects into fewer, broader categories. More directly pertinent to our framework, Vohs, Mead, and Goode (2006) found that reminders of money can lead people to behave in ways consistent with more expansive regulatory scope. For example, consistent with research highlighting the benefits of high-level construal for self-control (Fujita, 2008; Fujita & Carnevale, 2012), money cues also promoted greater persistence on challenging tasks (Vohs et al., 2006, Study 2). Although more research is needed, these data are collectively consistent with the assertion that money may serve as a social tool for expanding regulatory scope.

### ***Summary***

By distinguishing social tools that vary in level, we can begin to understand how social systems help individuals to regulate expansively and contractively. Whereas high-level social roles, laws, occupations, and language afford expansive regulatory scope, their lower level counterparts afford contractive regulatory scope. Thus, although social tools in their various forms (e.g., roles, norms) emerge in social groups, they function by orienting individuals to proximal ends or extending their

striving to more distal ends. Correspondingly, depending on whether individuals undertake expansive regulation or contractive regulation, they may selectively use high-level or low-level social tools, respectively. For example, to affect change that goes beyond oneself in the here and now, individuals may seek leadership roles, adopt official language, and join high-level governing systems or disciplines.

### Implications and Future Directions

Human evolution at both the phylogenetic and ontogenetic level is marked by an increasing ability to move beyond current experience and expand mental horizons. The development of tools, the domestication of animals, and the development of language are associated with planning for the more distant future, reaching remote locations, and forming larger groups (Lieberman & Trope, 2008). At the ontogenetic level, infants can perceive their immediate environment through touch, taste, smell, and hearing before they can perceive their more remote environment through sight. Children further learn over time to take into account future outcomes, consider alternative possibilities, and take others' perspectives. We argue that these developments involve expanding regulatory scope in relation to the self, here and now. In contractive regulation, goal pursuit focuses on proximal objects, whereas in expansive regulation, goal pursuit includes more distant objects.

Given that adaptive functioning seems to require both contractive and expansive regulation, we suggest that humans have evolved a range of mental and social tools to support both forms of regulation and the ability to switch between them. Building on CLT, we propose that these tools can be organized hierarchically, ranging in level of abstractness. We suggest that whereas low-level tools support the contraction of regulatory scope, high-level tools support the expansion of regulatory scope. This article reviews two important implications of this assertion: that people use low-level versus high-level tools when they need to regulate contractively or expansively and that using these tools modulates the scope of people's epistemic, emotive, and executive regulatory functions. Indeed, extensive research that suggests that people are more likely to evince the use of low-level versus high-level tools when they are concerned by more contractive versus expansive goals. Meanwhile, there is also some evidence that the use of low-level and high-level tools correspondingly contracts versus expands regulatory scope, although our framework highlights a number of gaps that still require empirical testing. In this way, the current perspective not only synthesizes a broad array of research converging on the notion that different levels of mental and

social tools enable contractive and expansive regulatory scope but also generates innovative and provocative new research questions.

An interesting question is whether the various tools that support regulatory scope are interrelated. Suggesting an affirmative answer, such tools may have coevolved over phylogenetic, ontogenetic, and historic timescales (e.g., Burkart, Schubiger, & Van Schaik, 2017; Henrich, 2016). For example, ontogenetically, epistemic tools (e.g., linguistic skills, logical reasoning, social categories) as well as emotive and executive tools (e.g., values and overarching goals and plans) may codevelop as children grow older (e.g., Tomasello & Carpenter, 2007). Correspondingly, over history, higher level social tools, such as structured normative systems, role structures, and art and science, may have also coevolved (Festinger, 1983; March & Olsen, 1989). Moreover, different mental and social tools may be similarly suitable for modulating regulatory scope across life tasks in health, work, and close-relationship domains. As a result of these and related factors, the use of different mental and social tools may covary, often supporting regulatory scope conjunctively but sometimes also interchangeably. Exploring these factors and the resulting co-occurrence and coactivation of the mental and social supports of regulatory scope is a worthwhile direction for future research.

### On regulatory dysfunction

Our regulatory-scope framework explicitly adopts a functional perspective—focusing on how various individual-level and group-level processes support people's contractive and expansive regulatory efforts. Our review has generally assumed that people can contract and expand their mental horizons as they desire or as the situation dictates. However, an equally important implication is in identifying ways in which regulation might fail. Specifically, we can suggest that any "mismatch" in regulatory scope and level should impair functioning.

The inability to match the necessary low-level or high-level tools with the regulatory demands at hand may arise from differences in the development of these tools either across the life span or across different social and cultural settings. For example, one might not expect children to be able to expand their regulatory scope until they have developed sufficient abilities to engage in cognitive abstraction (Piaget, 1936)—perhaps explaining why they have difficulties in tasks such as delay of gratification (Mischel et al., 1989), prospection (Atance, 2008), and perspective taking (Flavell, 1999; Wimmer & Perner, 1983). Likewise, some social settings or cultures may also encourage the development of

some tools rather than others, rendering people more (or less) ready to contract and expand their regulatory scope.

These high-level and low-level tools may also be differentially accessible both recurrently and momentarily. Any asymmetry in development or accessibility could constrain people's ability to expand and contract their regulatory scope, leading them to respond similarly to proximal and situations. For instance, people might make concrete plans regardless of whether they pertain to near- or distant-future situations, or they might use abstract language regardless of whether an audience is socially distant or close. Such inflexibility in the ability to modulate scope according to the situation could have critical consequences for psychological adaptation. Indeed, preliminary research suggests that individuals who fail to associate psychological distance with level of construal are more likely to have depressive symptoms than those who do show such an association (Darwent, Fujita, Cheavens, & Lazarus, 2013). As another example, Reuven, Liberman, and Dar (2014) found that individuals with obsessive-compulsive disorders tended to ascribe high-level abstract meaning to the contractive-scope action of cleaning their hands (see also Dar & Katz, 2005). Thus, further exploring mismatches between regulatory scope and level may provide important new insights into individual well-being and group functioning and promises to be a fruitful direction for future research (see also Fujita, Scholer, Miele, & Nguyen, 2019; Nguyen, Carnevale, Scholer, Miele, & Fujita, 2019).

We might also observe that early research efforts to help people create matches between the regulatory challenges that they face and the tools that they use have been shown to promote better outcomes. Consider, for example, regulatory domains such as education and health that are characterized by striving toward more distant ends. Preliminary research suggests that furnishing individuals with high-level tools may lead to more positive educational (e.g., Yeager et al., 2014) and health-behavior outcomes (e.g., Sweeney & Freitas, 2014). Nevertheless, we acknowledge that much more work needs to be done to explore the consequences of matching and mismatching regulatory scope and their respective mental and social tools. In particular, we highlight the need to explore behavioral outcomes outside the laboratory context as an important future direction.

Another source of dysfunction may stem from a failure to integrate contractive and expansive regulatory concerns. Consider, for example, a local company that seeks to expand into a more global corporation. To effectively accomplish this, it must use an assortment

of higher level tools to make sure that its products and services bridge any cultural differences and practices. Yet the company must simultaneously ensure that it is still grounded within both its old and new concrete context through the use of lower level tools. Effective regulation requires ensuring that expansive and contractive regulation work in partnership, with the latter supporting the aims of the former. This highlights the importance of not only having the ability to recruit a multitude of mental and social tools but also pursuing contractive and expansive goals in a coherent manner.

### ***On trade-offs***

Although we have discussed the trade-offs between contractive and expansive regulatory scope and reviewed some illustrative research, more research is needed to explore the motivational and emotional implications of balancing these costs and benefits. We might suggest, for example, that people may have very different emotional experiences depending on whether they are primarily concerned about expansive versus contractive regulation. Those who are persistently contractive—either because of environmental demands or individual differences—may be less likely to experience and be less responsive to self-conscious emotions such as pride and shame. By contrast, those who are persistently expansive may be less responsive to primary emotional experiences such as anger and disgust. Thus, the functioning and experience of primary and self-conscious emotions may depend on how people trade off the costs and benefits of contractive and expansive regulatory scope. Likewise, those who are contractive versus expansive should be more attuned and concerned about small perturbations in the environment—which may or may not be functional or desirable depending on the context. Understanding these emotional and motivational implications may provide deeper insight into the subjective experiences of these regulatory states.

Note too that the inherent trade-offs between contractive and expansive regulatory scope demand that people not only “fit” the right tool for the regulatory challenge at hand but that they balance the benefits and costs of these two regulatory modes. An issue for future theorizing and research is to specify how regulating systems know that they have struck the right balance. That is, what are the inputs or cues that these systems use, and what are the mechanisms for establishing the proper breadth of scope when the trade-offs are not balanced? Although a deep consideration of these issues is beyond the scope of the current article, unpacking the specifics of these regulatory mechanisms is an important next step both theoretically and empirically.



## **Learning from others to contract and expand regulatory scope**

People's regulatory functioning does not emerge in a social vacuum. A large body of scholarship across the social and behavioral sciences has documented the profound impact of mass media and the surrounding social context on individuals' regulation (Adorno, Frenkel-Brunswik, Levinson, & Sanford, 1950; Bandura, 1977; Berkowitz, Corwin, & Heironimus, 1963; Lewin, Lippitt, & White, 1939; Bronfenbrenner, 1979; Gelfand, 2018; Higgins, 2019; Levine & Moreland, 1994; Markus & Kitayama, 1991; McClelland, 1965; Weber, 1930/1958). The same may hold true for regulatory scope. Individuals' regulatory scope and the tools that support it may be acquired and shaped through numerous observations, interactions, and instructions in various social settings such as one's family, school, and workplace. Parents, teachers, and managers might differ in their emphasis on low-level versus high-level epistemic tools. For example, they may differ in the emphasis they put on knowledge of specific procedures versus general principles, on behavioral outcomes or underlying motives, and on tangible results versus causal explanations. They may also differ in their emphasis on different levels of emotive tools—on considering another individual's opinion versus the group consensus, on tactics versus strategies, and on following versus leading. Correspondingly, individuals may be differentially exposed to the regulatory scope afforded by those tools. Some social settings might provide individuals with relatively more opportunities to learn from others contractive regulation—a focus on what to do next, on people that are similar to self, and on what is known with certainty, whereas other social settings might provide more opportunities to learn expansive regulation—planning for the long term, including diverse others, and considering possible but uncertain outcomes. Studying how individuals learn from their familial, educational, and occupational settings to expand and contract their regulatory scope promises to be a fruitful direction for future research.

## **Toward a Theory of Regulatory Scope**

In the current article, we built on and extended CLT to better understand how people regulate expansively and contractively. To do so, we introduced the notion of regulatory scope and a detailed set of principles that describe the psychological and social tools people use to contract and expand the scope of their regulatory considerations. This novel approach to understanding regulation provides an integrative, cumulative framework for understanding how individual and groups are guided by and regulate in light of near and distant

objects and outcomes. Our review highlights many examples of phenomena that elucidate these principles but nevertheless represents only a selective review. We look forward to and encourage future research that builds on the explanatory and generative potential of this theoretical approach and further explores the implications of connecting the notion of level to regulatory scope.

## **Transparency**

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