Building a Science of Motivated Persons: Self-determination Theory's Empirical Approach to Human Experience and the Regulation of Behavior

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Abstract

Self-determination theory (SDT) is a still rapidly expanding framework of basic and applied research, underpinned by a global network of scholars and practitioners. Herein we focus on one feature of SDT that helps explain its continued growth --the fact that it is a truly human science that takes into consideration our attributes as *persons*, including our capacities for awareness and self-regulation, as well as vulnerabilities to defensiveness and control. Within SDT these human capacities are studied using diverse methods, and across all sub-disciplines of psychology. In this review we focus particularly on people's capacity for autonomy as it applies to their individual functioning, interpersonal relationships, and societal interactions. If there is a core legacy to SDT it is one of representing a generative and philosophically coherent framework based on a convergent network of empirical evidence with relevance across domains and cultures, and to our basic experiences and concerns as humans.

In this article we were invited to discuss the legacy of *self-determination theory* (SDT; Deci & Ryan, 1985; Ryan & Deci, 2017; Vansteenkiste & Soenens, 2015), a task we undertake with hesitation. The term *legacy* can have a meaning of something bequeathed after death, for which SDT is clearly not ready. Today SDT is more alive than ever, with a steeply escalating trajectory of both basic research efforts and evidence-supported applications. Behind this robust growth lie hopefully several legacies (defined as enduring contributions!) in diverse fields, such as parenting, work, education, health care, sport, psychotherapy, and technology use, and covering a wide variety of topics such as vitality, eudaimonia, mindfulness, life goals, emotion regulation, and developmental psychopathology, among others.

Given its breadth, in this short article we will focus on one legacy that we see as particularly relevant to SDT's place in motivation science. That legacy is SDT's central role in what we call the "Copernican turn" in empirical studies on motivation (Ryan & Deci, 2017), a turn from a focus on people as simply objects of causal processes toward an understanding of the propensities and capabilities within people that allow for their self-regulation of behavior. The science of SDT takes seriously our capacities as *persons*, including our abilities to be aware of ourselves, to actively learn and master our worlds, to strive to internalize cultural norms, to reflectively consider our own attitudes and values, and to make informed choices concerning them. These capacities also afford us an ability to care for the *selves* of others. At the same time SDT recognizes and researches the "dark sides" of human motivation, and our vulnerabilities to being passive, controlled, defensive, dysregulated and antisocial (Ryan, Deci, & Vansteenkiste, 2016; Vansteenkiste & Ryan, 2013). These human capacities for autonomy and integrity and vulnerabilities for defensiveness and psychopathology are neither mystical nor merely subjective; they are indeed rooted in our biology and adaptive histories. At the same time, they work by

psychological principles and processes that are the regnant causes of human behavior, and that are not simply reducible to other levels of analysis (Ryan & Deci, 2017).

SDT specifically embraces an *organismic* view of self as playing an integrative role in development (Ryan, 1995; Vansteenkiste, Ryan & Soenens, 2020). The theory is concerned with the functioning of the self, that is, its organization of experience, and its regulation and integration of impulses, emotions, motives, and values. For more than four decades, SDT has been deploying a wide variety of empirical methods, including experimental studies of behavior, experience sampling, longitudinal studies, neuroscience, and controlled interventions to understand individuals' motivations and their antecedents, dynamics, functions, and consequences. In doing so, SDT has emerged as a broad framework for a truly *human science* built upon cumulative and convergent evidence (Ryan & Deci, 2019). Its theoretical propositions are not reliant on single studies or narrow models, but rather draw from multiple forms of evidence, tested across diverse domains of human endeavor. SDT research spans all sub-disciplines of psychology, including developmental, social, clinical, cognitive and biological psychologies -- a breadth of basic science and applied relevance few theories can claim (Sheldon & Prentice, 2019; Ryan, Vansteenkiste & Soenens, 2019).

In this contribution, we will illustrate this integrative breadth by focusing on one of the most central themes in SDT's Copernican turn, namely, the issue of *autonomy* as it is explored across three widening spheres of study. First, we discuss the critical role of autonomy and control in individual functioning and experience, including in various phenomena such as responsibility, guilt, and the quality of one's behavioral engagement. Next we review evidence concerning how both autonomy and autonomy support impact the quality and the sustainability of interpersonal relationships, suggesting how they are at the heart of our attachments, mutual care, and relationship satisfaction. Finally, we turn to the broader cultural and economic environments in which all persons and human relationships

are embedded, and how societal affordances differentially affect autonomous and wellness. This capacity to address individual, social, and societal phenomena supports SDT's legacy as a truly human science of motivation.

Autonomy and Control in Human Motivation

In SDT's organismic perspective, autonomy represents a state in which one's behavior is self-organized and volitional. Autonomy is understood, however, as more than merely a subjective phenomenon or attribution—it is a form of functioning that is reflected in physiological, neurological, behavioral, and phenomenological patterns concurrently (Di Domenico & Ryan, 2017). When acting with autonomy, a person is *fully functioning*, willingly engaged in activity with awareness and congruence, and able to harness vitality in the self-regulation of action. This full functioning is reflected as well in indicators from physiology to performance.

People's degree of autonomy reflects their underlying motivations and these vary across social conditions. People are sensitive to these variations in autonomy and behave differently when experiencing things as voluntary versus when feeling controlled. They are also sensitive to whether others' actions are autonomously or heteronomously motivated (e.g., Wild, Enzle, Nix & Deci, 1997). For instance, we feel more gratitude and closeness to others who help us to the extent their actions are seen as autonomously motivated (Weinstein, DeHaan, & Ryan, 2010). These claims highlight the centrality of autonomy in human "folk psychology" and lived experiences.

Originally SDT drew, in fact, from Heider's (1958) "naïve psychology" in which he argued that the most important determinants of human behavior lie in the regularities by which we perceive and construe events—the meaning we make out of them. Heider specifically highlighted perceptions of "personal causation," or intentionality, as a particularly important dimension of people's phenomenal worlds, further suggesting that

people actively distinguish whether others' actions are personally caused or intended using signs of effort, persistence, equifinality and motives among other cues. As a function of whether others' behavior is perceived as personally caused, people will then differentially assign blame, responsibility, and credit to them. Important to note here is that it is only insofar as people perceive others to have capacities for agency and intentionality that they think and react in these ways. In other words, it is only because in our social world we understand others as *persons* with capacities for autonomy and responsibility that we behave toward them in the ways we do (Oshana, 2013; Scruton, 2017).

Perhaps more important to the early development of SDT was de Charms's (1968) refinement of Heider's construct of personal causation. De Charms argued that some intentional acts have an *internal perceived locus of causality* (IPLOC) in which the actor is seen as the *origin* of behavior or is acting willingly. Other intentional behaviors have an *external perceived locus of causalit*y (EPLOC) wherein the person's experience is that of being controlled or like a *pawn*. In de Charms' view an IPLOC—the sense of being autonomous—is not just a post-behavioral attribution; rather, people can *directly* sense and know when they themselves are origins of their actions. After all, it is they who organize it! Within SDT this inner sense of volition and willingness is considered a salient and critical dimension of human experience and functioning, so it is not treated as merely a cognitive post-hoc appraisal as in attribution theories (e.g., Bem, 1967), or as an "illusion" as so many modern reductionists revel in claiming (see Ryan & Deci, 2006; 2017). Whether or not we experience an IPLOC is critical to a sense of personal responsibility, guilt, interest, and other significant psychological processes, and the behaviors that follow from them.

Building upon these concepts, SDT describes a continuum of motivational types that vary in their perceived locus of causality from highly external to highly internal. Yet even as they vary along this dimension of relative autonomy, each of these motivation types

(sometimes called regulatory styles) also has distinct antecedents, phenomenological qualities, functions, behavioral consequences, and neurological underpinnings. This taxonomy of motives, each of which we shall be defining, is depicted in Figure 1. For now we note that as one moves from left to right in this figure the motivation types depicted are increasingly characterized by autonomy.

Beyond focusing on the phenomenology of autonomy, as an organismic perspective SDT also assumes an inner propensity toward growth and integration as being characteristic of a healthy person (Vansteenkiste & Ryan, 2013). As part of its Copernican turn, SDT goes beyond conceiving of people as simply objects of causal processes toward an understanding of their active living nature. SDT thus expects that healthy individuals are proactively interested in their surroundings and experiences, naturally engaged and assimilative in an ongoing way. This core idea of the self as a synthetic or integrative function is an assumption SDT shares with a number of past organismic theories (Ryan, 1995), but it is specifically represented within SDT in its emphasis on *intrinsic motivation* and *internalization* as inherent propensities of persons (Deci & Ryan, 1985; 2000).

SDT's taxonomy of motivation in itself yields an important point about human motivation. Whereas many prior theories have treated motivation as a *unitary* concept that differs mainly in amount or dose (e.g., Bandura, 1996; Skinner, 1953), SDT focuses on the multiple kinds of motivations underlying human behaviors, holding that not all types are created equal. SDT research highlights how phenomenally distinct types (Ryan & Connell, 1989) and configurations (Vansteenkiste et al., 2009) of motivation have differing antecedents, rely on different neurological mechanisms, and predict different qualities of experience, behavior, and performance, underscoring again the importance of a person-centered view.

Motivations Within the Self-Determination Continuum

Intrinsic Motivation. As SDT's formal theorizing has developed it has been organized into a series of (currently) six "mini-theories,", each of which presents a set of formal propositions regarding human motivation and full functioning. The earliest of these was *Cognitive Evaluation Theory* (CET; Deci & Ryan, 1980a), which is focused exclusively on *intrinsic motivation*. This was a key starting point for SDT as intrinsic motivation represents a prototype of our active human nature. Intrinsic motivation involves the doing of an activity for its own sake, or because the activity is interesting or enjoyable (Ryan & Deci, 2020). When intrinsically motivated, people curiously engage their internal and external environments, reflecting an inherent inclination toward learning and mastery. When free to do so, they seek out intrinsically motivated activities, as evidenced in the way people spend leisure time pursuing such activities as games, travel, sport, or reading (e.g., see Mackenzie & Hodge, 2019). Such actions are typically highly autonomous, as de Charms recognized, and thus intrinsic motivation appears at the far right of the continuum in Figure 1.

Extrinsic Motivations and Their Relative Autonomy. However, autonomy can also characterize *extrinsic motivation* under many circumstances. Within SDT extrinsic motivation is understood as a broad category and concerns all "instrumental" activities, or behaviors done to obtain some separable consequence. Although de Charms originally linked an IPLOC with intrinsic motivation and an EPLOC with extrinsic motivation, *Organismic Integration Theory,* SDT's second mini-theory (see Vansteenkiste, Niemiec, & Soenens, 2010), provides a more differentiated account in which different forms of extrinsic motivation vary in their PLOC or degree of autonomy (Ryan & Connell, 1989). Let us consider some of these variations.

Among extrinsic motivations that are low in autonomy, *external regulation* is a major category. External regulation involves behavior that is perceived to be controlled by some external contingency, such as other-administered contingent rewards or punishments.

External regulation was a primary focus of research in operant behaviorism (Skinner, 1953), and in agreement with behavioral theorists, SDT predicts that such external regulators can powerfully motivate immediate behaviors, and further that these behaviors will be poorly maintained when the controlling external contingencies are removed. SDT adds further that external regulation often fails to produce high-quality performance, as the focus is strategically oriented on getting the reward, not the value of the action itself (e.g., see Cersoli, Nicklin & Ford, 2014)

A second type of extrinsic motivation is *introjected regulation*, wherein a person acts from internal pressures and self-esteem contingencies. Like external regulation, introjection is a broad motivational category (Assor, Vansteenkiste & Kaplan, 2009; Sheldon, Osin, et al., 2017), but the common element is a focus on preserving and boosting self-worth and avoiding guilt and shame. Introjection is also a controlled form of internalization because even though the contingency driving behavior is "within" the person, the PLOC is still phenomenally external; there is an experience of pressure *on* the self to act, or face the affective and self-evaluative consequences. Introjection has been studied in many life domains, such as putting effort into schoolwork (van der Kaap-Deeder et al., 2016), sport (Pelletier et al., 2001), adhering to religious beliefs (Ryan, Rigby & King, 1993) or achieving a thin "ideal" (Verstuyf, Vansteenkiste, Soetens, & Soenens, 2016). Introjection has also been developmentally linked with parental control and conditional regard, in which relatedness is expressed contingently on meeting parental standards (e.g., Kanat-Maymon, Roth, Assor & Raizer, 2016). Such conditional regard contributes to self-esteem pressures, such as those observed in self-critical perfectionism (e.g., Harvey, Milyavskaya, Hope, Powers, Saffran, & Koestner, 2015; Nguyen & Deci, 2016; Soenens et al., 2005).

A third broad category of extrinsic motivation is *identified regulation*, which represents a yet fuller form of internalization in which the individual has personally accepted

the value and importance of the behavior (Vansteenkiste et al., 2018). The individual concurs with and "owns" the reasons for behaving. The motivation is still technically extrinsic because it lies, not in the inherent enjoyment of the activity (as in intrinsic motivation), but rather in the belief that the goal is relevant and worthwhile. As such, behavior regulated via identification is relatively autonomous and also tends to be of high quality because the person is personally invested. Identified motivation thus becomes especially important in domains where activities may not always be intrinsically motivated or require diligence and persistence, such as school achievement (Aelterman, Vansteenkiste & Haerens, 2019; Ryan & Deci, 2020), music performance (Evans & Ryan, in press), environmental activism (Pelletier Dion, Tuson & Green-Demers, 1999), and health behavior change (Gillison, Rouse, Standage, Sebire & Ryan, 2019).

Nonetheless, as Ryan and Deci (2017) describe, different identifications can be more or less *compartmentalized*. People can hold identifications that are not congruent with one another and thus, at times, can engender defensiveness or cause inner tension. Therefore, SDT posits an even more autonomous type of extrinsic motivation, *integrated regulation*, in which the person's identifications are brought in harmony with one another (horizontal synthesis) or are reflective of and congruent with deeply held values, commitments, and beliefs (vertical synthesis). To the extent a behavioral regulation is vertically and horizontally integrated it is more deeply grounded and owned, and the individual is more whole-heartedly engaged and unconflicted in acting.

Methodological Diversity

The SDT taxonomy is a theoretical framework, and thus evidence supporting it is derived through multiple strategies, and in different life domains. The focus has been on convergent evidence, gathered through a variety of methods. For example, we first looked at external regulation through experiments on contingent rewards (Deci & Ryan, 1980a) and

introjected regulation through experiments on ego-involvement (Ryan, 1982) and objective self-awareness (Plant & Ryan, 1985). Such experimental work on motivational regulations continues today, with experimental work shedding light on the differential role of punishments and logical consequences (e.g., Robichaud, Mageau & Soenens, 2020), the fostering of identified regulation through meaningful rationales (e.g., Jang, 2008), and the use of guilt-induction to prompt introjected regulation (Chen et al., 2016). Motive states are also being identified in brain studies as these states engage different neural networks (e.g., Fang, Wan, Zheng, & Meng, 2020; Lee & Reeve, 2017; 2020; Miura, Tanabe, Sasaki, Harada, & Sadato, 2017; Ryan & Di Domenico, 2016).

Yet because SDT is interested in the person-level perspective, motives have often been assessed through self-reports. Typically SDT metrics ask people the extent to which each of the Figure 1 motives is salient. Congruent with the idea that these different motive types vary in their level of autonomy, an ordered pattern of the correlations between them was hypothesized (Ryan & Connell, 1989) and has been repeatedly confirmed (see meta-analysis by Howard, Gagne & Bureau, 2017), with adjacent motives on the continuum correlating more strongly than motives being situated further apart. Evidence for the underlying continuum has also been gathered through multidimensional scaling, in which motives are arrayed along a dimension of autonomy (e.g., Roth et al., 2006), and, more recently, through loading patterns in Bi-Factor ESEM models (e.g., Litalien, Morin, Gagné, Vallerand, Losier, & Ryan, 2017). Bi-Factor ESEM models, however, have the problem of segmenting variables into "g" (i.e., general) and "s" (i.e., specific) scores which, while maximizing fit, may lose correspondence to the original constructs and thus be difficult to interpret or apply.

Given the strong evidence for the hypothesized continuum structure, researchers have been flexibly using subscale scores, with theorizing and hypothesis formation guiding the

choice of specific data-analytical strategies. Sometimes scholars have been *selective,* zooming in on specific subtypes (e.g., Assor et al., 2009), and at other times *exhaustive*, for instance, through the provision of an ordered pattern of correlates between subtypes and external outcomes (Howard et al. 2017). Still other studies adopt an *aggregating* approach, thereby creating, for instance, a Relative Autonomy Index (RAI) in which the different subscales are differentially weighted according to their location on the autonomy continuum (Ryan & Connell, 1989; Sheldon, Osin, Gordeeva, Suchkov, & Sychev, 2017). The RAI allows one to test SDT's general proposition that the more a person's motivations are skewed toward autonomy, the higher their functioning and wellness. Another way to aggregate data, supported by factor-analytical evidence, is to combine intrinsic motivation, identified regulation, and integrated regulation into *autonomous motivation* and introjected and external regulations into *controlled motivation* (e.g., Brunet, Gunnell, Gaudreau, & Sabiston, 2015; Sheldon, Osin, et al., 2017). While each of these summarizing methods has high predictive power and utility, as well as limitations, it is important to bear in mind that each of the subtypes of motivation comprising any summary score has its own unique dynamics and correlates, beyond those associated with their relative autonomy.

Moreover these motives do not occur in isolation but rather most often dynamically co-occur within a person. One can thus identify a *motivational profile* for individuals across time or a domain of activity representing the combined influences of different motives (e.g., Vansteenkiste & Mouratidis, 2016). To study such within-person combinations of motives, person-centered techniques (e.g., latent profile analysis and cluster analysis) complement dimensional approaches, as they provide deeper insights in how motivational styles are combined in particular configurations, resulting in specific motivational dynamics (e.g., Vansteenkiste, Sierens, Soenens, Luyckx & Lens, 2009; Wang et al., 2107).

Consequences of Relative Autonomy and Internalization

Research in diverse life domains suggests that more autonomous, relative to controlled, motives are not only associated with, but essential to, a variety of positive outcomes (Ryan & Deci, 2017). These benefits are wide-ranging and concern the persistence and quality of behavior, as well as the well-being of the actor, with effects emerging across life domains. We cite just a few scattered examples. In education, more autonomously and less controlled motivated Chinese students enrolled in an English training program were more effective in planning study time and less likely to drop out (Vansteenkiste, Zhou, Lens, & Soenens, 2005). Students who were more autonomously motivated for mathematics showed greater effort and persistence and processed problem-related information more deeply (León, Núñez, & Liew, 2015). In psychotherapy, clients experiencing depressive symptoms who were more autonomously motivated for treatment showed greater improvement across treatment modalities (Zuroff, Koestner, Moskowitz, McBride, & Bagby, 2012). In sport, more autonomously motivated athletes were more persistent, and reported more positive affect and interest in future sport engagement (Ntouamanis, Healy, Sedikides et al., 2014). In the work domain, Guntert (2015) showed how the motivational continuum predicted graded relations with insurance employees' job satisfaction, organizational citizenship, and turnover intentions in the predicted patterns.

Studies of motivational profiles have provided convergent evidence, especially showing how profiles characterized by the presence of autonomous motives yield the most desirable pattern of affective, cognitive, and behavioral outcomes. Such findings have emerged among students (Ratelle et al., 2007), athletes (Gillet, Vallerand, & Paty, 2013) and employees (Van den Broeck, Lens, De Witte, & Van Coillie, 2013). Importantly, this research has also shown that more motivation is not always better. Although people with profiles characterized by the combined presence of autonomous and controlled motivations may display a higher amount of motivation overall, they do not necessarily fare better than

those who are more autonomously motivated (e.g., Vansteenkiste et al., 2009).

Support for Basic Psychological Needs in Internalization and Relative Autonomy

Insofar as there are clear functional and wellbeing benefits to autonomous motivation, a fundamental question is what "causes" autonomous functioning; how can it be "elicited?" From the classic behavioral view, one would attempt to identify environmental stimuli that control the occurrence of behavior, and harness those to maintain responses. Yet, as an organismic approach, SDT begins from a different vantage point, assuming that human nature is *already* active; people are inherently prone to learn, internalize and grow, and to move in the direction of greater autonomy and integration, provided they have the appropriate nutriments or supports.

Need Satisfactions as Critical Resources

SDT argues that both the developmental process of internalization and interest development, as well as a person's situational capacity to be intrinsically motivated and to act in more integrated ways, are highly related to the extent to which individuals' basic psychological needs for autonomy, competence, and relatedness are supported. As emphasized within another SDT mini-theory, *Basic Psychological Need Theory* (BPNT; Ryan & Deci, 2017; Vansteenkiste, Ryan, & Soenens, 2020), the satisfaction of these needs is foundational to full functioning and wellness, whereas the frustration of these needs diminishes integrity and wellness, and when extreme or chronic, contributes to psychopathology (Ryan, Deci, & Vansteenkiste, 2016). While need satisfaction plays an energizing role in the development and sustenance of both intrinsic motivation and internalization, need frustration hampers both processes and even elicits defiance (Van Petegem et al., 2015).

Supporting Intrinsic Motivation

CET (Deci & Ryan, 1980a; 1985) details how social environments (e.g. parents, teachers, coaches, managers) affect intrinsic motivation. It was initially formulated to explain results from laboratory studies showing that rewards given for doing an interesting activity could sometimes decrease intrinsic motivation for an activity. CET specifies that certain types of rewards are more readily perceived or have a "functional significance" as controlling, leading to an EPLOC and thus undermining their intrinsic motivation (Ryan, Mims & Koestner, 1983). Meta-analytic findings have strongly supported the CET model as well as SDT's basic taxonomy of reward contingency effects on intrinsic motivation (Deci, Koestner, & Ryan, 1999). Work using fMRI has not only replicated the undermining effect but also specified some of the neural processes involved (e.g., Di Domenico & Ryan, 2017; Reeve & Lee, 2018).

Yet CET addresses much more than the issue of rewards. This mini-theory posits that *any* factors that detract from an IPLOC will diminish intrinsic motivation, including threats of punishment, surveillance, controlling deadlines and evaluations, conditional regard and even a controlling tone of voice (Enzle & Anderson, 1993; Weinstein, Zougkou, & Paulmann, 2018). Further, drawing on the work of White (1959) who spoke about a fundamental need for competence, Deci and Ryan (1980a) argued that both autonomy and competence are central to intrinsic motivation. Thus, negative feedback or excessive difficulty which undermine perceived competence also diminish intrinsic motivation (see metanalysis by Fong, Patall, Vasquez & Stautberg, 2019). On the positive side, social contexts that afford choice and ownership, as well as those that are well scaffolded and optimally challenging, support experiences of autonomy and competence and maintain or enhance intrinsic motivation, a position also supported by meta-analytic findings (e.g., Patall, Cooper, & Robinson, 2008). There is in fact a large literature detailing factors on both the facilitating and undermining sides of the ledger in CET. Intrinsic motivation, which is such a

vital expression of our active human nature, is thus clearly impacted by ambient need supports.

Supporting Internalization

Factors supporting or thwarting basic psychological needs also play a critical role in internalization, and the forms of extrinsic motivation a person displays, as argued in SDT's *Organismic Integration Theory* (OIT) mini-theory. This process begins early in development. For example, Laurin and Joussemet, (2017) showed that observed parental autonomy support at age two predicted increases in toddlers' willing compliance a year and a half later, whereas observed controlling strategies predicted a deterioration in such internalization. This general dynamic of need-supportive environments fostering greater internalization applies across age and life domains such as school, work, religion, and sport. To illustrate, Italian Catholic youth's identified regulation for practicing their religion was predicted by parents' autonomy support, including their perspective taking, choice-provision, and minimization of control, whereas their introjected internalization was predicted by parental conditional regard (Brambilla, Assor, Manzi, & Regalia, 2015). In the work domain, a meta-analysis by Slemp, Kern, Patrick and Ryan (2018) found that leader autonomy support showed increasingly positive associations with more internalized forms of motivation, effects that were mediated by basic need satisfactions, and not moderated by country. Even in the generally restrictive context of prisons, internalization of rules can be fostered through more autonomy-supportive guards and staff (van der Kaap-Deeder et al., 2019). An important theme across this literature is that for individuals to take responsibility for activities, they need to experience not just supports for efficacy, but also autonomy (Hornstra, Bakx, Matthijsen, & Denissen, 2020).

Inner Facilitators: Awareness, Mindfulness and Emotion Integration

Whether one is focused on pressures from within (emotions, impulses) or from without (external rewards, threats) there are person-level attributes and processes that also

impact autonomy and integrity. Among these, SDT has long emphasized *awareness* as a key part of integrative processing, helping a person make better and more congruent choices, and to protect against defensiveness and impulsivity (Deci & Ryan, 1980b; Ryan & Deci, 2017).

Mindfulness

One of the more actively researched forms of awareness has been *mindfulness*, defined as non-defensive or open experiencing of what is occurring within and outside oneself (Brown & Ryan, 2003). Mindfulness has been associated with greater autonomy at both trait and state levels of analysis (e.g. Brown & Ryan, 2003), a relation that was substantiated in a recent meta-analysis by Donald et al. (2019). Across 89 studies involving more than 25,000 individuals, results revealed graded associations from positive to negative between mindfulness and intrinsic, identified, introjected and external regulations.

This relation between mindfulness and more adaptive and integrated functioning has also been shown experimentally. For example, Schultz and Ryan (2019) reported that people higher in mindfulness were able to perform better on a difficult cognitive task in an experimental condition in which they were anticipating physical pain. Niemiec, Brown, et al. (2010) found across seven experiments that more mindful people were less likely to succumb to out-group derogation, a defense mechanism common following mortality salience (MS) manipulations (Pyszczynski, Kesebir, & Lockett, 2019). This decrease in defensive reactions was mediated by fuller processing of the mortality-threating induction in the moment. In other words, greater awareness facilitated a more integrated response in a context of psychological threat.

Emotional Regulation and *Intra*personal Autonomy and Control

Experiences of autonomy and control are also related to the pressures and seductions of one's internal, emotional life. Emotions can be experienced as pressures and pulls to act, and lead to automatic or uncontrolled behaviors that phenomenally do not feel mediated by

the self, as when anger spurs counter-aggression a person later regrets, or a nagging desire spawns impulsive eating. When emotions predominate in activating behavior the experience can indeed be one of uncontrollability in which, phenomenally, the emotion "made me do it." Alternatively, one may try to regulate emotions in controlling ways. Here the person may attempt to push down (as in emotional suppression) or "downregulate" (as in cognitive reframing) the affective experience. Of these two cognitive reframing has shown adaptive advantages over suppression (e.g. Gross, 2015).

However, SDT describes yet a further possibility, *integrative emotion regulation* (IER; Ryan, Deci, & Vansteenkiste, 2016). IER represents a form of autonomous regulation with respect to emotions in which emotions are neither suppressed nor cognitively altered, but rather openly and receptively attended to. In being mindful of and interested in one's emotions, the meaning of events can be clarified, and choices about behavior can become more flexible and congruent (Roth, Vansteenkiste & Ryan, 2019). Those choices might include, for example, employing cognitive coping mechanisms, but also might lead the person to more directly address the sources or causes of arousal directly or to seek social supports. IER is thus a model of authentic engagement with emotions, resulting in more autonomous behavior regulation.

Although a detailed review of this emerging IER literature cannot herein be supplied, both experimental (e.g., Roth et al., 2014), survey-based (e.g., Benita, Benish-Weisman, Matos, & Torres, 2020; Roth et al., 2009) and observational (e.g., Brenning et al., 2020) research has supported the IER model. For example, experimental data shows that IER results in less defensiveness and more adaptive coping (e.g., Roth et al., 2018). Longitudinal research with early adolescents provided convergent evidence, showing associations of IER with increases in self-esteem (Brenning et al., 2015).

Autonomy and Control in Interpersonal Relationships and Prosocial Behavior

When discussing the importance of the experience of autonomy, we note how it critically determines cognitive-emotional processes, emotional experiences, and behavioral outcomes such as persistence and performance. As it turns out, these different motivations and the experience of autonomy also play a central role in relatedness, attachments, care, love, and prosocial behaviors, as described in the most recent of SDT-mini theories, *relationships motivation theory* (RMT; Ryan & Deci, 2017; 2019). In this section we describe the role of autonomy within interpersonal relationships, as well as the power of caring relationships to satisfy all three basic psychological needs, as well as the relations of need frustrations and controlling motives in fostering anti-social behaviors.

Autonomy in Relationships

Relatedness, one of SDT's three basic psychological needs, is critical to explain people's motivation to be close, disclose, and care for others. Yet one of the important propositions of RMT is that relatedness also requires recognition of the other as a person, a person endowed with capacities for autonomy and with their own internal perspective on events. That is, true relatedness is much more than an activated amygdala, it is also a *psychological* phenomenon characterized by an acknowledgment and care for the other's self (Buber, 1970). In SDT terms, this means that satisfaction of the autonomy need is as fully necessary to a high-quality relationship as are warmth and involvement.

Even in early attachment, a key element in children feeling securely attached is parental autonomy support (e.g., Whipple, Bernier, & Mageau, 2011), and this remains true through the childhood years (Grolnick, Ryan, & Deci, 1997) and across the lifespan. For example, La Guardia, Ryan, Couchman and Deci (2000) showed that across different relationships, young adults reported security of attachment to the extent that they experienced support for autonomy and competence. In sexual behavior, Brunell and Webster (2013) showed that more autonomous motives for sexual interactions were associated with greater

satisfaction, relationship quality and well-being (see also Gavel, Pelletier & Reissing, 2016). In autonomy-supportive relationships people are more open and honest (Uysal, Lin, Knee, & Bush, 2012; Wuyts, Soenens, Vansteenkiste, & Van Petegem, 2018), and willing to turn to each other when distressed or joyful (Ryan, La Guardia, Solky-Butzel, Chirkov, & Kim, 2005). Autonomy support, in short, facilitates both personal and interpersonal authenticity (Lynch et al., 2009; Ryan & Ryan, 2019).

In a high-quality adult relationship, people not only feel more volitional about being in the relationship themselves but also feel that the other is volitionally and autonomously involved as well (Blais, Sabourin, Boucher & Vallerand, 1990). Indeed, the highest quality relationships are characterized by *mutuality* of autonomy support involving each partner caring for the self of the other (e.g., Deci, La Guardia, Moller, Scheiner, & Ryan, 2006). This expectation of a positive association, indeed synergy, between autonomy and relatedness is relatively unique to SDT, as many other theories portray autonomy and relatedness as oppositional dynamics (e.g., Markus & Kitayama, 2003). But SDT's view is based in a philosophy of autonomy, understood as willingness and self-endorsement, from which it seems clear that connecting, loving, and caring for others are among the most autonomous acts in which humans engage (Frankfurt, 2004; Friedman, 2000).

Autonomy and Control in Prosocial and Antisocial Behaviors

This idea that doing for others is often highly autonomous is reflected in a growing body of SDT research on helping, prosocial behaviors and beneficence. For example, in a series of methodologically diverse studies Weinstein and Ryan (2010) showed that when helping was autonomously motivated its positive effects were substantial, whereas helping for controlled reasons was not. Autonomously helping others enhanced the helper's well-being, an effect that was mediated by autonomy, relatedness and competence satisfactions. Yet not only did autonomously motivated helping enhance the wellness of the helper

(whereas controlled helping did not), *recipients* of autonomous help evidenced higher well-being. Kindt, Vansteenkiste, Loeys, and Goubert, (2016) reported similar findings among chronic pain patients whose partners indicated whether they provided day-to-day help for more autonomous or more controlled reasons. On days that providers' help was more autonomously motivated, both providers and patients evidenced more positive affect, less conflict, and greater satisfaction, relations accounted for by improved basic need satisfaction.

Reviewing such studies, Ryan and Deci (2017) summarize that people often find all three basic psychological need satisfactions in prosocial actions, with the needs facilitating this deeply evolved propensity of human nature (see Ryan & Hawley, 2016). This idea that autonomous caring for others is based in inherent satisfactions is further supported by experiments showing that acting benevolently satisfies basic psychological needs, even without any contact with the beneficiary. For example, Martela and Ryan (2016) showed that experimental participants whose game play resulted in anonymous rice donations to needy others reported more basic psychological need satisfaction, post-game vitality, and positive experience compared to participants playing the same game just for fun.

Oppositely, it seems that anti-social and malevolent behavior tends to be underpinned by controlled motivations, and to often be elicited by basic psychological need frustration. Joussemet et al. (2008) reported on a study of over one thousand children's trajectories of aggressive behavior over several years of development. They noted that, overall, aggressive behavior decreases with development, as children internalize values and develop better self-regulatory capacities. Yet some children retain more aggressive tendencies. Joussemet and colleagues identified a number of risk factors associated with being more aggressive, including sex of the child, reactive temperament, or parental divorce. Yet even controlling for such variables, mothers' controlling styles predicted children remaining more aggressive. Similarly, Fousiani, Dimitropoulou, Michaelides, and Van Petegem (2016) found that

controlling parenting was directly related to cyberbullying in Cypriote teenagers. In contrast, parental autonomy support was associated with greater autonomy, which predicted more empathic concern toward others and, in turn, lower cyberbullying.

Research on bullying in school settings points in similar directions. Roth, Kanat-Maymon, and Bibi (2011), working in junior high schools in Israel, found that a climate of autonomy support related to less bullying and more civil behaviors. In Chile, López, Bilbao, and Rodriguez (2012) found that when classroom autonomy support was higher, students felt more satisfaction, less conflict, and less competitiveness, all of which were associated with reduced bullying. Such findings fit with Hawley, Little, and Pasupathi's (2002) contention that frustration of autonomy needs leads to compensatory attempts to control peers, often in hostile or aggressive ways.

In the context of sports, Hodge and Gucciardi (2015) found controlling coaching to relate positively to antisocial behavior towards both opponents and teammates. Following soccer players during five consecutive games, Delrue et al. (2017) found that during games in which athletes reported their coach delivered a more controlling or pressuring pre-game speech, athletes reported a more objectifying stance towards opponents, and lowered thresholds for aggressing on opponents and being more critical of teammates. In contrast, perceived autonomy-supportive coaching predicted greater cooperation between teammates.

Importantly, being controlling towards others not only harms one's relations and elicits anti-social interactions; the very act of hurting others can also be painful for oneself. Legate, DeHaan, Weinstein and Ryan (2013) asked participants to inflict social pain on an experimental confederate by excluding that person in a *cyberball* paradigm (Williams & Jarvis, 2006). Although most people followed the instructions to exclude, they experienced their compliance as non-autonomous and need thwarting, resulting in distress.

Of course, when we get to the truly dark sides of humanity—issues such as rape, serial killing, genocide and other heinous behaviors, evidence points to the influence of severe and chronic need thwarting during development. Moreover, the motives behind such acts fall short of criteria for autonomy and integration (Ryan & Deci, 2017). Thus, both bringing out the "better angels" of our natures, and diminishing our more defensive and harmful propensities, requires the nurturance of SDT's basic psychological needs to support more integrative emotional and behavioral regulation.

Beyond Proximal Influences: Culture, Economics and Human Rights

Clearly autonomy, relatedness and competence matter in individual motivation, and in interpersonal dynamics. Recent work has been looking beyond such proximal environments at the effects of more pervasive human contexts such as cultural, economic and political systems (Ryan, Ryan, Di Domenico & Deci, 2019). In this section we briefly describe findings concerning how variations in cultural, and political- economic conditions influence wellbeing via their impact on basic psychological needs within societies.

Cultures

Autonomy matters everywhere. For example, a meta-analysis by Yu, Levesque-Bristol, and Maeda (2018) of studies done in the US and East Asia showed that people's experience of autonomy was significantly related to well-being, a relation that did not differ between countries or cultures. Another meta-analysis by Slemp et al. (2018) showed that across nine countries managers' autonomy support was similarly associated with employees' basic need satisfactions, work autonomy and thriving. As we have reviewed, studies from many cultures show this important relation of autonomy to wellness in proximal social contexts such as parent-child relationships, workplaces, classrooms, and treatment settings.

A plethora of studies (e.g., Church et al., 2013; Jang et al., 2009; Sheldon et al., 2009) have also supported the important role of basic psychological need satisfaction as *universal*

nutrients for health and wellness. For example, Chen, Vansteenkiste, Beyers, et al. (2015) used samples from China, Peru, Belgium, and the U.S, showing that satisfaction and frustration of each of SDT's three basic needs was uniquely related to greater wellness, results that were not moderated by country of participants.

Although these and many such studies support the universality premise of SDT, it is important to delimit exactly what is universal in this formulation. Basic psychological needs are treated in SDT as *etic universals*, that is, as attributes or processes that empirically demonstrate cross-cultural significance and validity. The claim is that across development and cultures, satisfaction of these needs enhances, and frustration interferes with, wellness. As Lynch (2020) recently showed, the degree to which one can internalize one's own cultural norms is important everywhere (see also Chirkov, Ryan, & Willness, 2005; Craven et al., 2018). Yet SDT simultaneous recognizes *emic differences* in how these basic needs are valued, voiced, and expressed in different cultural contexts (Reeve, Ryan & Deci, 2018). For instance, as we described earlier, SDT argues that the effects of social contexts on need-based experiences depends on their functional significance. Building on this, Zhou, Lam and Chan (2012) showed that young Chinese students perceived the same controlling teacher behaviors as less controlling than U.S. comparisons, and these lower perceptions of being controlled, in turn, helped account for their higher autonomous motivation. Studying such nuances of how internalization and autonomy are fostered or addressed within different cultures is an active area of research (e.g., Cheng et al., 2016; Marbell-Pierre, Grolnick, Stewart, & Rafter-Helmer, 2019; Soenens, Vansteenkiste, & Van Petegem, 2015).

Economic and Political Systems.

Beyond cultures, the economic and political contexts in which people are embedded impact their capacities for full functioning. As an example, poverty and inequality may well have their negative effects on motivation and wellness to a significant degree because they

diminish opportunities for experiencing autonomy, competence and relatedness, and lead to societal conflicts. People with lower SES often have fewer intrinsic job satisfactions, higher stress, and lower vitality, all reflective of low psychological need satisfaction on a day-to-day basis. González, Swanson, Lynch, and Williams (2016) in a sample of U.S. workers found that basic psychological need satisfaction mediated the relations between SES and physical and mental health outcomes, controlling for factors known to impact health (e.g., age, physical activity, smoking). Interesting too, the higher people's socio-economic circumstances, the less gains in wealth were associated with basic need satisfactions. Di Domenico and Fournier (2014) further showed that *income inequality* in one's surrounding area negatively predicted health and well-being, a relation also mediated by basic psychological needs.

Cultures and economies also differ in the type of goals that prevail (Kasser, Cohn, Kanner, & Ryan, 2007), with some of these goals, if endorsed by citizens, contributing less to basic need satisfactions and well-being than others. As maintained within *Goal Content Theory*, another of SDT's mini-theories (Kasser & Ryan, 1996; Martela, Bradshaw, & Ryan, 2019; Vansteenkiste et al., 2010), the pursuit of extrinsic goals, such as garnering fame or becoming wealthy, typically do not yield the hoped for benefits (Sheldon, Gunz, Nichols, & Ferguson, 2010), even when attained (Niemiec et al., 2010; Van Hiel & Vansteenkiste, 2009). Instead, intrinsic goals, such as contributing to the community, developing one's skills and personality, or affiliating deeply with others, come with greater well-being benefits, while also relating to more satisfying relations and pro-environmental behavior (Unanue, Dittmar, Vignoles, & Vansteenkiste, 2016).

Capabilities and Primary Goods. Beyond income and relative income, a number of economists and philosophers such as Sen (2000), Nussbaum (2000) and Rawls (2009) have forwarded positions on the societal conditions that are necessary to support individuals'

having a "good life." Societies with the most flourishing citizens are, in this perspective, those that provide conditions that allow people to pursue 'that which they have reason to value'. For example, Nussbaum (2000) proposed ten *capabilities* that she viewed as essential, including support for bodily health, freedom of movement and from fear of violence, opportunities to develop thought and self-expression, freedom to affiliate, and ability to have some control over political and material environments. She theorized that these capabilities are necessary for flourishing and that lacking such capabilities undermines wellness. Using an assessment of these capabilities developed by Anand, Hunter, Carter, Dowding, Guala, and Van Hees (2009) with participants from the US and India, DeHaan, Hirai, and Ryan (2016) found that Nussbaum's capabilities were predictive of vitality, happiness, meaning, and life satisfaction. Further, these relations were substantially mediated by measures of SDT's basic need satisfaction and frustration. More recently, Bradshaw et al. (2020) developed a similar model using Rawl's (2009) theory of social justice. Rawls maintains that there are *primary goods* essential to a just society that are necessary for people to pursue that which matters to them. Using a measure of perceived primary goods, Bradshaw and colleagues reported two studies involving participants from six nations showing that perceived access to primary goods predicted well-being, a relation mediated by the satisfaction and frustration of the basic psychological needs.

Together such studies point to an important new direction in self-determination theory research, namely the influence of pervasive environments. Pervasive environments include cultural norms and mores, economic structures and constraints, and political and legal rights and privileges. SDT is thus moving beyond the study of proximal environments to inquire into the mechanisms through which broad societal structures influence psychological needs satisfactions and frustrations, affecting the thriving versus degradation of citizens.

Returning to Personhood: Why We Need a Theory of Self, Autonomy and Integration

SDT is a theory of human motivation and wellness that has grown in both its scope and depth over several decades. In this brief article we reviewed but a few themes within the framework, primarily highlighting research on human autonomy and its role in healthy development, motivation and wellness. This focus precluded meaningful coverage of major SDT mini-theories on individual differences (Causality Orientations Theory) and on life goals and aspirations (Goal Content Theory), among other and gaps and omissions. Nonetheless, we hope the themes covered herein draw the reader toward the wider body of SDT research and practice.

Broad empirically-based theories such as SDT are rare today (Sheldon & Prentice, 2019), but in our view they have value for progress in both basic and applied human sciences. A theory is a generative framework that enhances not only our understanding of phenomena, but also yields predictive principles that can anticipate solutions to new problems and novel applications. A scientific theory also meets epistemological criteria that include ties with observations and a transparent and replicable evidence base. SDT specifies such principles rely on a convergent and conciliant body of empirical evidence reaching across levels of analysis from biological to societal, and apply across ages, domains, and cultures.

As an organismic theory, SDT embraces the idea that we are biological creatures whose capacities have evolved from simpler forms. Yet it also recognizes that these evolved capacities have changed our relations to ongoing causal processes around us. People's propensities to learn, to internalize, to use reason, to engage in evaluative thought, and to autonomously care for others, all of which are made possible by a functional self, are characteristics of being human. Whereas many scientific perspectives today denigrate concepts of self and subjective experiences as objects of study, SDT sees these phenomena as central to a scientific psychology, and to any truly practical perspective on human behavior.

Autonomous persons are those who can reflectively evaluate their actions, self-endorse those that fit with their values and needs, and in so doing actively develop a life worth living (Ryan, Soenens, & Vansteenkiste, 2019; Shepard & O'Grady, 2017). Such autonomous, value driven living is captured by concepts such as *eudaimonia*, or the pursuit of activities comprising a good life (May, 2010; Ryan, Curren & Deci, 2013). These particularly human capacities for integrated self-regulation, awareness, choice and volitional caring for others are not only manifest in experience, but also in specific processes in our brains and physiologies. Yet this whole package is made possible only by developmental, institutional, and societal conditions that are themselves humane. Indeed, a fundamental point of SDT is that our propensities toward autonomy competence and relatedness and the flourishing associated with them require specific social nourishments and supports. This is why so much of SDT is focused on the social environments that can meet human needs, both physical and psychological. Thus, if there is a primary legacy for SDT it may be that of developing a framework for research and intervention that ultimately serves humanity's realization of the best within us by focusing on what matters most.

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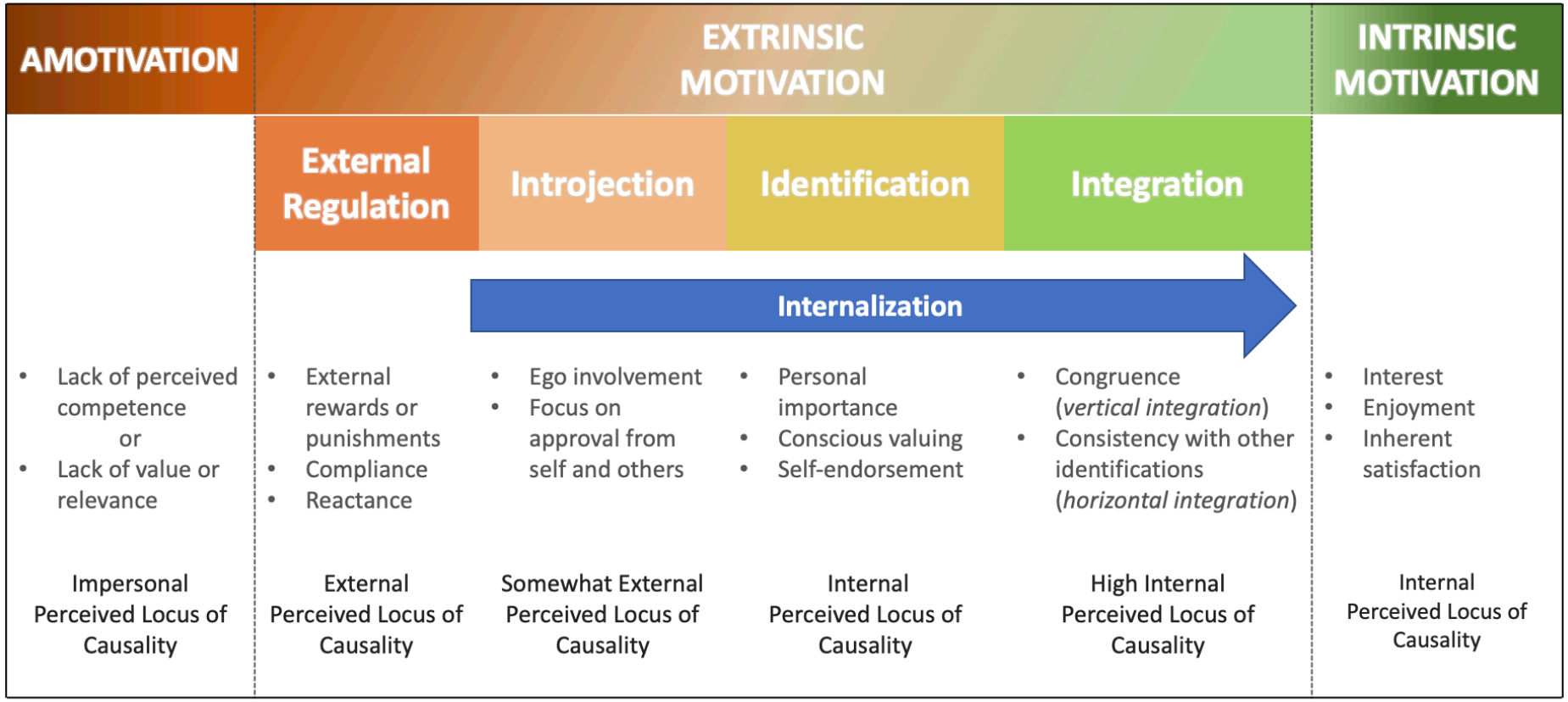
Figure 1. Self-Determination Theory's Taxonomy of Motivations



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