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On the Psychology of Extremism: How Motivational Imbalance Breeds Intemperance

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Abstract

We present a psychological model of *extremism* based on the concept of motivational imbalance whereby a given need gains dominance and overrides other basic concerns. In contrast, *moderation* results from a motivational balance wherein individuals' different needs are equitably attended to. Importantly, under moderation the different needs constrain individuals' behaviors in prohibiting actions that serve some needs yet undermine others. Those constraints are relaxed under motivational imbalance where the dominant need crowds out alternative needs. As a consequence, the constraints that the latter needs exercise upon behavior are relaxed, permitting previously avoided activities to take place. Because enactment of these behaviors *sacrifices* common concerns, most people avoid them, hence their designation as 'extreme'. The state of need imbalance has motivational, cognitive, behavioral, affective and social consequences. These pertain to a variety of different 'extremisms' that share the same psychological core: extreme diets, extreme sports, extreme infatuations, diverse addictions, as well as violent extremism. Evidence for the present model cuts across different domains of psychological phenomena, levels of behavioral analysis and phylogeny. We consider the model's implications for further research and explore the tradeoffs between extremism and moderation.

Key Words: Extremism, moderation, motivational imbalance, basic needs, constraints

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"*Purity of heart is to will one thing*" (Soren Kierkegaard)

Profiles in Zealotry

Alex Honnold, arguably the world's most accomplished climber who scaled "free solo" (i.e., without protective equipment), the formidable El Capitan peak in Yosemite Park, "dirtbagged" for years in a van and was a social recluse with a single minded focus on his passion."[1]

Limitless commitment characterized also Mother Teresa's profound devotion to her faith and her life of enormous self denial, caring for the sick and the poor in the slums of Calcutta. [2]

Mohammed Bouazizi, the Tunisian street vendor whose self immolation in 2010 sparked the epoch changing Arab Spring, felt that the only way to redeem his humiliation by the police was by an ostentatious act of public suicide. [3]

Henri Matisse, the renowned impressionist master remarked: "*I had nothing in my head other than painting.*" (Spurling, 1998, p. 61).

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[1] http://www.alpinist.com/doc/web17s/wfeature-alp35-alex-honnold-profile-less-and-less-alone

[2] https://www.nytimes.com/interactive/2016/09/01/world/europe/mother-teresa-saint-timeline.html?mtrref=www.google.com&gwh=98AF5A39E39548CD0CD93AF5C8441751&gwt=pay&assetType=REGIWALL

[3] (https://en.wikipedia.org/wiki/Mohamed_Bouazizi)

And Marie Sklodowska Curie, the two times Nobel prize laureate who discovered radioactivity lived “in a world quite removed from human beings” (Goldsmith, 2005, p. 59-60), spent all her time in the lab, and suffered recurrent bouts of depression.

Extremism as a Psychological Construct

The life circumstances of above individuals couldn’t be more different. What possibly could be common to a scientist pursuing a discovery, a street vendor setting himself on fire, a fearless mountain climber, an inspired artist, or a nun tending to the poor and the downtrodden? Veritable apples and oranges one might say. Now, most people would probably agree that behaviors these individuals enacted may be properly characterized as ‘extreme’. The question remains, however, whether this label represents a mere way of talking, or reveals a deeper psychological dynamic these “strange bed fellows” share. In the pages that follow we submit that the latter, indeed, is the case and outline a general theory of ‘extremism’ to support our claim. Whereas in everyday discourse, the term ‘extremism’ has acquired a moral connotation, essentially serving as a term of abuse, we presently address the general psychological substrate of extreme activities without any reference to morality.

Specifically, we propose that extreme behaviors are the result of a motivational imbalance, wherein a given need overrides other basic concerns. We also consider the consequences of such imbalance for motivation, cognition, behavior, affect and sociality. We review an extensive body of evidence relevant to our model and draw its implications for future research.

Our analysis is based on a wide range of findings and concepts from different schools of psychological thought and different levels of analysis. Some of our insights

were anticipated in prior discussions and conceptual frameworks. We acknowledge previous work and build upon it to offer a coherent perspective that highlights a uniform process underlying extremism across its varied manifestations.

Defining Extremism and Moderation

In its everyday use, the term 'extremism' is intended in two distinct albeit related senses. One pertains to the *magnitude* of a phenomenon or a process. For instance, 'extreme heat' denotes high temperature, 'extreme effort' -- an intense exertion, and 'extreme hunger' a voracious food craving. The other sense of 'extreme' denotes something 'rare' or 'marginal'. It denotes low frequency or unusualness, an edge of a statistical distribution. Practicing 'extreme' sports, following 'extreme' diets, and adopting 'extreme' positions imply something esoteric and uncommon, not what most people do. In parallel, 'moderation' connotes *limited magnitude* (as in 'moderate heat', 'moderate endeavor', or a 'moderation of one's efforts'), but it also implies a central tendency in a distribution, a mode, median or average.

Our *psychological* notions of 'extremism' and 'moderation' combine these two aspects of their common use. Thus, we conceptualize extreme states or events as *infrequent phenomena whose rarity results from a pronounced intensity* or *magnitude of their underlying motivation*. 'Extreme diets refer to *exaggerated* food restrictions that relatively few persons, often obsessive about their appearance, are ready to undertake. Similarly, extremism in sports refers to their uncommon riskiness that only a handful of highly committed daredevils may tolerate. Finally, violent extremism pertains to the extent of harm (to others and oneself) that only a few, zealously ideological, individuals are willing to perpetrate, etc. In contrast, we conceptualize moderation as the

manifestation of mild motivational states prompting behaviors that most people feel comfortable with and that, therefore, are relatively frequent and commonplace.

In Preview

As a preview of what is to come, we present a theoretical model of extremism and moderation encapsulated in the following propositions: (1) Humans have a set of basic needs, some of which are biological (e.g. nutrition, hydration) and others psychogenic (e.g., autonomy, relatedness, significance); satisfaction of these needs is essential for an enduring state of well-being. Accordingly: (2) people typically strive to fulfill all their basic needs. When they are successful and all the basic needs are within their region of satisfaction, a state of *motivational balance* sets in. It fosters *moderation* in which the needs constrain individuals' behavioral options and limit them to actions that leave no need unfulfilled. (3) Occasionally, the motivational balance may be tipped, however. This happens when one need becomes predominant proportionately crowding out other basic needs hence creating a state of imbalance. Under such imbalance, the now-diminished needs relax their constraints oon behavior. As a consequence, formerly prohibited behaviors that serve the currently dominant need, while undermining others are allowed, and, often enacted. (4) Because people typically strive to satisfy all their basic needs, a sacrifice of some needs when a dominant need crowds them out is typically difficult to bear; as a consequence, individuals tend to avoid motivational imbalance and the associated extreme behavior. Hence these behaviors are rather scarce, meriting the label 'extreme'.

. Motivational imbalance manifests itself across a broad variety of 'extremisms' including its violent kind revealed in terrorism, but also extreme infatuations that may

lead to stalking, extreme dieting that fosters eating disorders, and extreme sports that entail substantial physical risks. When it occurs, need imbalance affects individuals' cognitions, affect and behavior. In the remainder of this paper, we elaborate the foregoing propositions and review evidence for their validity.

A Theory of Motivational Imbalance: On Fervor and Sacrifice

Basic Assumptions

1. Universal Human Needs. The notion that humans have a fixed set of universal needs has had a long and storied past in psychology and the life sciences. Cannon (1932) famously identified a set of basic biological functions that the living organism strives to maintain in a 'steady state', defining an optimal level of functioning. Cannon coined the term 'homeostasis' to refer to inner constancy in basic physiological systems, such as a constant level of blood sugar, body temperature or blood viscosity. Whereas Cannon primarily considered biological systems, psychological theorists posited also a set of psychogenic needs considered basic and universal (e.g., Deci & Ryan, 2000; Freud, 1920/1966; Fiske, 2010; Higgins, 2012; Kurtz, 1956; Maslow, 1943). In this vein, Deci and Ryan (2000) proposed that competence, autonomy and relatedness constitute the universal psychogenic needs, and obtained evidence for their operation, Higgins (2012) proposed that the needs for *truth, value* and *control* are basic. Fiske (2010) introduced a *bucet* of fundamental needs (belonging, understanding, controlling, enhancing and trusting), etc.

Regardless of whose taxonomy of basic needs one finds useful, the very concept of *basic* needs has significant implications. First, akin to Cannon's (1932) homeostatic notions it implies that fulfilment of those needs is essential, if not to survival as such at

least to overall contentment and well-being (cf. Sheldon & Niemiec, 2006). Secondly, it suggests that the same fundamental needs are common to all humans, albeit not necessarily to the same degree, as one may expect individual differences in the needs' (absolute and relative) magnitudes. For instance, some individuals may be higher on their need for autonomy than other individuals and/or higher on their need for autonomy than on their needs for competence or relatedness (cf. Deci & Ryan, 2000; Ryan & Deci, 2000), etc.

Finally, the notion of basic needs has a *generative* implication in the sense that all of individuals' goals ultimately derive from those needs. In other words, *goals* acquire their motivating power from serving one or more of the basic needs. For instance, addiction, characterized by a constant drive to seek and use drugs, develops because the individual starts to use drugs to satisfy some basic needs (e.g., to be accepted and included in a certain group) Over time, as function of various factors (e.g. repeated association, similarity, uniqueness), drug use that originally might have served a basic needs may acquire motivating properties and come to function as a goal in its own right (see Hilgard & Bower, 1966; Robinson & Berridge, 1993; Kopetz, Lejuez, Wiers, & Kruglanski, 2013; Kruglanski, Fishbach, Woolley et al., 2018), activatable by various internal or external cues.

The *specific goals* subserving the same basic needs may vary vastly across persons, situations and cultures (cf. McClelland, 1961). For instance, the need for nutrition (manifest as hunger) may translate into the 'goals' of cooking dinner, booking a table at a restaurant, or embarking on a hunt -- all depending on the culture and the circumstances. Similarly, the need for competence may give rise to different goals,

depending on one's chosen domain of endeavor. For an artist this might arouse the goal of producing a painting, for an athlete, the goal of training for a competition, and for an academic -- the goal of penning an impactful book, or making an important discovery.

2. Motivational Balance and Imbalance.

2(a). **Balance and moderation.** Prior theorists (e.g., Cannon, 1932; Kurtz, 1956) viewed homeostasis or equilibrium from the perspective of a *single* need or function. Homeostasis was defined, for instance, in terms of optimal body temperature, optimal blood sugar, or optimal blood viscosity. Each basic function claimed its own homeostasis, or steady state which disturbance triggered activity designed to restore it.[4]

In contrast to this emphasis on the state of a given need, we presently focus on *systemic* balance, a state in which *all* of an individual's basic motives are in their *region of satisfaction.* This is particularly important because the individual rarely has only one need at a time; furthermore, different needs impose constraints upon one another such that behaviors aimed at gratifying a given need while neglecting or undermining other needs tend to be avoided. For instance, one's choice of food may be driven by hunger, . as well as concerns for health and taste.Whereas hunger as such could be satisfied by the consumption of numerous foods, some patently unhealthy and distasteful, health and taste

[4] We view such "steady state" as a range of outcomes within which the individual's need is relatively satisfied. We also assume that such *region of satisfaction* is not completely constant (or "steady") but that it may vary depending on the individual's adaptation to available outcomes (e.g., Cannon, 1932; Helson, 1947; Maslow, 1943; Stagner, 1961). For instance, individuals may adapt (within limits) to a given level of nutrition or hydration such that what they once experienced as frustrating and unsatisfactory falls now within their *region of satisfaction*. The relative instability of the regions of satisfaction is also assumed to apply to psychogenic needs like those for esteem, relatedness, control, etc. (e.g., Barnfather, 1993; Deci & Ryan, 2000; Lykken & Tellegen, 1996; Maslow, 1943; Wolbring, Keuschnigg, & Negele, 2013).

concerns would constrain the set of foods that one would consider and limit them to 'multifinal' ones, those that while gratifying hunger are also relatively healthy as well as tasty (cf. Kruglanski et al., 2002; Kruglanski, Kopetz, Bélanger et al., 2013). Thus, a systemic balance fosters a state of *moderation* in which a compromise is struck between the different basic needs. And in so far as humans are generally motivated to satisfy all their basic needs, most people observe the reciprocal constraints these exert upon each other and display 'moderate' behaviors.

2(b). Magnitude of the balance. People may vary in the magnitude of their needs. These, in turn, affect the motivational balance they would strike. Some individuals experience their needs intently; others experience them in a more subdued manner. In other words, motivational balance may exists between several high level passions, or between milder, less intense concerns. The former type of balance describes what Vallerand (2015) has labeled as 'harmonious passion' denoting an equilibrium between different high magnitude proclivities. About which more later.

2(c). Imbalance and extremism. Occasionally, the individual's motivational system may get out of balance such that a given need comes to dominate the others. When that happens, the salience of the latter needs declines as do, correspondingly, the constraints they exert upon behavior. This allows previously prohibited means for satisfying the dominant need to become permissible. Engagement in the normally prohibited behavior, would set the actor apart from most people who are bound by the usual constraints. For instance, when 'insanely' in love one may throw caution to the wind and sacrifice work, health and finances to please the object of one's affection, thus acting in ways most people would normally avoid . Under unbearable hunger one may be

prepared to consume disgusting, unhealthy, and poorly tasting substances few others would consider. And when consumed by an unbridled obsession for work one may neglect one's family, friends and hobbies in a way that most people would find unreasonable.

2(d). **Magnitude of the imbalance.** We assume that motivational imbalance may vary in degree. In other words the *degree* to which the dominant need exceeds in magnitude the remaining needs can be larger or smaller. Let $M_t(F)$ denote the magnitude of the focal need F at time t, and let $M_t(A_i)$ denote the magnitude at time t of a given alternative need A_i, then the magnitude of the imbalance MI_t between the focal and the alternative needs A_{i-n}, at time t may be expressed as proportionate to the magnitude differential between the focal and the alternative needs (the average of the latter). These notions are formally represented in Equation 1.

1. $MI_t \sim [M_t(F) - \sum M_t A_{i-n}/n]$[5]

2(e). Imbalance duration. Momentary spikes in magnitudes of given needs may occur often, giving rise to temporary imbalances wherein important concerns are temporarily put aside in favor of other salient needs (e.g., one may 'drop everything' in order to attend to an emergency of some sort, or withdraw from other preoccupations to take care of one's hunger). Occasionally, a need low in the individual's value hierarchy may become salient. In that case one typically speaks of a 'temptation' to which an individual might succumb and later regret. For instance in succumbing to a tempting, yet

[5] An intriguing implication of this expression is that given the same proportionality (ratio) in magnitudes of the individual's focal versus alternative needs, the greater the individual's 'hotness' (affecting both those magnitudes) the greater the magnitude of the imbalance MI

highly caloric, food, one may suppress or minimize momentarily one's (more important overall) dietary concerns, and in impulsively making an inappropriate remark one may momentarily suppress proper norms of conduct, etc. Thus motivational imbalance, and hence 'extremism', may pertain to a single choice in which a given need temporarily spikes and overrides the others.

Typically, people are quick to restore their motivational balance by redirecting their attention to the momentarily neglected affairs. After an emergency is over, for instance, one is likely to resume one's previously disrupted activities. And after succumbing to temptation one often resolves to return to the original regimen. Typically, one speaks of extremism primarily where the motivational imbalance is enduring, though in reality even a single choice can be extreme. But, as Maslow's (1943) noted– an unsatisfied need dominates the whole organism, and thus it stands out, only "if it is extreme enough and *chronic* enough" (p. 376, italics added). Shorter and weaker states of imbalance are not threatening; to the contrary they are often essential for goal progress (as when one needs to prioritize one task over others in order to bring it to completion).

That is why generally a long lasting addiction to alcohol or drugs (rather than occasional use), a long lasting commitment to violent (e.g., terrorist) pursuits or an enduring obsession with a given activity (e.g. a dangerous sport) are typically viewed as examples of extremism. Because people generally strive to have all their basic needs gratified, such prolonged obsession is rather rare. In such instances, the *intensity* aspect of extremism (i.e., exaggerated magnitude of a given need) coincides with the *rarity* aspect, a general infrequency of the behavior in the population.

2(f). Prolonging the imbalance. Because human motivational concerns are represented cognitively (e.g., Kruglanski, 1996, 2006), duration of the motivational imbalance may be affected by compelling *narratives;* these may instill lasting beliefs that are supported and hence validated by revered epistemic authorities (Kruglanski et al., 2005) embedded in one's social *network* (Kruglanski, Bélanger & Gunaratna, 2019). The motivational imbalance may thus characterize the group members' belief system, and stable worldview. In this way, a shared reality is created (Higgins, 2019) wherein the imbalance is prolonged through portrayal of a given concern as of supreme importance worthy of any sacrifice. For instance, a narrative that extols the virtue of violence against an enemy may keep members of a terror group ready to risk their life and limb for years on end; a narrative that extols the virtue of humanitarian works, may keep those who subscribe to it sacrifice their comfort and personal interests for a lifetime.

2(g). Impact of the Imbalance. We assume that motivational imbalance has wide ranging impact affecting the cognitive, affective, behavioral and social aspects of one's experience. These are addressed in subsequent sections of this paper. Here we assume that the degree of impact (DI)[6] at any given time is proportionate to magnitude of the Imbalance MI at that time, and the temporal *duration* T of at least *some* imbalance, where $MI_t>0$.

2. $DI \sim MI_t * T$

[6] Possibly, one could distinguish between the cumulative effect of DI over time, and its crossing a given limit where a qualitatively new effect might emerge. In analogy to a rubber band, there can be an effect of stretching as such, and then, if prolonged beyond a given point something new happens—the rubber band breaks. These possibilities could be looked at in future research.

3. Antecedents of need imbalance. A motivational imbalance in which a given need dominates others could happen in one of two general ways: (1) Either the focal need is aroused at an exaggerated magnitude so that it crowds out alternative needs, or (2) the saliency of the alternative needs subsides due to individuals' reduced ability to gratify them (e.g. for biological reasons), thus channeling their mental resources disproportionately toward a focal, more attainable, need (cf. Lalande et al., 2017). We consider both in turn.

3(a) Need arousal. We assume that arousal of a given need results in the channeling of one's resources toward its satisfaction. This requires a proportionate withdrawal of resources from alternative needs creating a systemic disequilibrium. The dominant need is, by definition, the most motivationally relevant. Thus, it would have the highest accessibility, inhibiting other needs (Eitam & Higgins, 2010; Shah et al., 2002). As Maslow (1943) noted, an unsatisfied need, especially when strong, "obscures" other needs and dominates one's behavior. In such a case, the organism is wholly dominated by that need and "all other needs may become simply non-existent or be pushed into the background" (ibid, p. 373).[7]

[7] Our theory differs from Maslow's (1943) in several fundamental respects. Specifically, (1) Maslow famously postulated a hierarchy of needs in which the physiological ones are the most prepotent (ibid., p. 373). His discussion of need's dominance is in the context of the hierarchical model such that the physiological needs when unfulfilled override other concerns. In contrast, the present theory makes no hierarchical assumptions and it assumes that the arousal of any need can overshadow and suppress the others, (2) Unlike the present theory that postulates a constraining effect of the different needs on behaviors enacted on behalf of other needs, Maslow's formulation does not address any such constraints, consequently: (3) whereas the central phenomenon of present interest is 'extremism', the latter does not figure in Maslow's conceptualization.

Two widely recognized ways in which a need may be aroused are through (1) deprivation, and (2) incentivization (cf. Hull, 1943; Spence, 1956). Deprivation lowers the need state to below the satisfactory range, whereas incentivization offers an opportunity to increase satisfaction within that range. Consider, for example, the need for esteem or self-enhancement (e.g., Fiske, 2010).Humiliation may create a state of esteem-deprivation and evoke the motivation to restore one's esteem to a satisfactory level. On the other hand, an opportunity to do something of supreme social value, (e.g., save a child's life, exhibit heroism in battle, etc.) presents an *incentive* that may motivate action intended to boost one's self-esteem above its current level (cf., Kruglanski, Bélanger, Gelfand, et al., 2013).

Depending on the type of need, and on the circumstances -- deprivation and incentivization processes may be instigated in different ways. 'Low level' physiological needs like hunger or thirst may be induced by the *objective* withdrawal of food or water, representing deprivation, or by enticing food or drink stimuli representing incentivization. Higher level needs like belonging, personal significance or autonomy may undergo deprivation or incentivization through *activation* from memory of the relevant need schema (cf. Bargh Gollwitzer, Lee-Chai, Barndollar, & Trötschel, 2001) and through the social process of persuasion (suggesting that the need has been frustrated, or that an opportunity exists for its supreme gratification).

3(b) Need abatement. In some situations a need's magnitude may abate for some reason. In response, individuals' resources may be invested disproportionately in another need. Need abatement may occur for biological reasons. For instance, the sex drive is known to subside with age, which may free resources for investment in alternative needs

(e.g., Araujo, Mohr, & McKinlay, 2004; Kinsey, Pomeroy, & Martin, 1948; Schiavi & Rehman, 1995; Sternbach, 1998). Aging-related decline in one's ability to demonstrate competence, may lower the saliency of *competence* and increase one's emphasis on *relatedness* as both may constitute alternative ways of proving one's significance and meaning (Kruglanski, Bélanger, Gelfand et al., 2013; Kruglanski, Chernikova, Rosenzveig, & Kopetz, 2014; Milyavsky, Kruglanski, Gelfand, & Chernikova, 2019; Steverink, 2001).

Need abatement may also occur for situational reasons, where the expectancy of its satisfaction falls below a threshold (cf. Kruglanski, Chernikova, Rosenzveig & Kopetz, 2014). Under those conditions, resources may be disproportionately channeled into satisfaction of a different need. In research directly relevant to this notion, Lalande et al. (2017) demonstrated that an obsessive engagement in a passionate activity was predicted by low levels of need satisfaction in other life domains.

When a need wanes (whether for biological or situational reasons), the constraints it exercises over behavior are reduced. This should increase the likelihood of behaviors that would be prohibited otherwise. For instance, if one no longer cared much about sex, one might proportionately lose an interest in one's attractiveness to potential partners, and consequently neglect one's appearance, etc. (e.g., Mansfield, Koch, & Voda, 2000; Sims & Meana, 2010). Similarly, if one's concerns with relatedness were reduced (e.g. due to seclusion, and unavailability of interaction partners) one might 'throw oneself' into work with abandon, thus exhibiting 'workaholism' (e.g. Scott, Moore, & Miceli, 1997). And if (as a consequence of ideological 'brainwashing') one no longer cared about one's physical survival, one might be more inclined to volunteer for a suicidal mission

(Kruglanski, Bélanger, Gelfand et al., 2013, Kruglanski, Gelfand, Bélanger et al., 2014, Kruglanski, Jasko, Webber et al., 2018; Webber, Klein, Kruglanski, Brizi, & Merari, 2017).

4. Consequences of Motivational Imbalance

Motivational imbalance has motivational, cognitive, affective, behavioral and social consequences, all presumably proportionate to impact of the imbalance (see Equation 2). We consider these in turn:

4(a). Motivational consequences. By definition (1), motivational imbalance manifests itself in differential concern for the focal/prioritized versus the alternative needs. This should expressed itself in (1) *negative correlation* between indices of the motivation to pursue the focal and the alternative needs, (2) *alignment* of different motivational features whose magnitude reflects the extent of the imbalance, such as: (a) increased relative *preferences* for activities seen as serving the focal need compared to those serving the alternative needs, (b) greater explicit value being put on the focal versus the alternative needs, (c) greater readiness to sacrifice the alternative for the focal need.

4(b). Cognitive consequences: (1) Attention. The greater the magnitude of the imbalance, the stronger should be individuals' tendency to allocate attention to the focal need and to withdraw attention from the alternative needs.

(2) Preoccupation/rumination. The greater the magnitude of the imbalance, the stronger should be individuals' tendency to be preoccupied, ruminate and deliberate about the focal need relative to the alternative needs. That is, the ratio of thoughts about ways of attaining the focal need versus the alternative needs, and about the consequences

of satisfying the focal need (versus the alternative needs) etc. should vary as a function of the magnitude of need imbalance.

(3) **Projection**. The greater the magnitude of the imbalance the stronger should be the tendency to project the focal versus the alternative needs onto others. In other words, under motivational imbalance, perception of others would be imbued by one's own dominant need and their attributed motives would partially reflect one's own prevailing concerns.

(4) Choice expansion. When imbalance happens and a given need comes to dominate the others, constraints that the latter impose upon behavior are relaxed; this increases the likelihood that behaviors that serve the dominant need would be enacted even if they are detrimental to the other needs.. Thus, the greater the magnitude of the focal relative to the alternative needs, the larger should be the set of behaviors considered as possible means to the focal need's gratification. As a case in point, during extreme famine, individuals were known to eat bark, leaves, insects, even other humans (Johnson, 2014, March 17; Philbrick, 2001).

5(c). Affective consequences: (1**) Emotional dependency**. The greater the magnitude of the imbalance, the greater should be individuals' emotional dependency on the focal need. Proportionately to the magnitude of the imbalance -- positive emotions will accompany perceived satisfaction of the focal need and negative emotions will accompany perceived lack of satisfaction.

(2**) Neglect effect.** The *lesser* the magnitude of the motivational imbalance, assuming MI>0, the *greater* the negative emotional impact of neglecting the alternative needs. In other words, given at least some dominance of the focal versus the alternative

needs, the lesser the extent of the dominance -- the greater the negative impact of neglect/frustration the alternative needs. This prediction assumes that the lesser the extent of the motivational imbalance, the weaker the suppression of the alternative needs, hence the greater the adverse affective consequences of their neglect.

6 (d). Behavioral consequences: Means' selection. Expansion of the set of means serving the focal need does not imply that 'extreme' behaviors will be necessarily selected out of this set. Consider a high degree of hunger under which an individual might be ready, if it came to that, to consume foods that are unhealthy or distasteful; but if in fact the foods happened to be available were tasteful and healthy -- no "nutritional extremism" would be required.

Consistent with major theories of motivation (e.g., Vroom, 1994) we assume that the selection of a given behavioral means, out of those available, would be based on considerations of *value* and *expectancy*. Thus, a highly available means (the proverbial "low hanging fruit") that is multifinal so that in addition to satisfying hunger gratifies also another important end, namely of saving effort, may be selected due to its enhanced *value* (cf. Kruglanski et al., 2002; Kruglanski, Kopetz, Bélanger et al., 2013). Additionally, a means may be selected due to its perceived effectiveness in gratifying the need, that is, *expectancy* that its implementation would result in greater *degree*, or *immediacy* of need satisfaction. For instance, stealing, may seem to be perceived a more effective means to wealth than saving, and volunteering for a suicidal mission may appear a more effective path to glory than struggling with an uncertain career (cf. Kruglanski et al., 2009; Kruglanski, Bélanger, Gelfand et al., 2013; Kruglanski, Gelfand et al., 2014; Kruglanski. Jasko, Chernikova, Webber, & Dugas, 2017). Often, 'evidence'

as to the value of the means (e.g. of violence as a means to dignity) is articulated in *narratives* to which one is exposed (e.g. the propaganda of a terrorist organization) and which are supported by shared reality (Higgins, 2019) of one's reference group, a *network* of significant others whose opinion one reveres (Kruglanski, Bélanger & Gunaratna, 2019). These notions are considered at a later juncture.

Conditions for moderation and extremism are represented schematically in Figure 1 (a and b).

Figure 1 here

The (a) portion of Figure 1 depicts *moderation*. The individual's active goals are all at comparable magnitudes (represented by the circles' size), and their mutual constraints reduce the set of activities considered as means to a given goal. Because the third means (M3) is inconsistent with one of the alternative goals (AG2), it is eliminated from consideration as a means to the focal goal (FG). In contrast, the (b) portion of Figure 1 depicts the conditions for *extremism* in which the focal goal exceeds in its magnitude all the others. The latter goals are then inhibited and the strength of constraints they exercise on means to the focal goal is reduced. As a result the set of acceptable means to the FG expands to include now M3 despite it undermining of AG2.

4(e). Social consequences: Infrequency and deviance. Because (by definition) motivational imbalance entails the neglect of basic human needs -- its maintenance represents a sacrifice that is difficult to sustain. Consequently, extremism should be typically exhibited by relatively small minorities of individuals, and be difficult to sustain

for long.[8] Nonetheless, the costs of extremisms to individuals and society can be vast. For instance, although under 9% of the population abuses tobacco, alcohol, and illicit drugs and alcohol, the costs of abuse in the U.S. exacts more than $740 billion annually in costs related to crime, lost work productivity, and health care (National Institute of Drug Abuse [NIDA], 2019a). Other sources estimate the cost of drug addiction at 820 billion dollars a year and growing (Buddy, 2019, June 1). The costs of extreme dieting and food addiction (leading to obesity) are also substantial. For instance, data from Germany shows that obesity exacts a cost of 10–15 billion euros to the national economy per annum (Seidell, 1995). For Germany alone, the costs of anorexia nervosa are approximately 195 million euros (Krauth, Buser, & Vogel, 2002) spent on hospitalization, rehabilitation services, and indirect costs incurred through inability to work and premature death (see also Agras, 2001).

The funds spent by governments on security have swelled dramatically in recent years owing to the growing threats from violent extremism. Budgets allotted to the U.S. Coast Guard, Transportation Security Administration and Border Patrol have all risen by over 200% since 2001, and the Federal Bureau of Investigations budget by 300% over that time (Kruglanski, Bélanger & Gunaratna, 2019, p. 219). Additional economic consequences of terrorism include a depletion of a nation's capital stock and reduction of foreign investment in the affected countries (Frey, Luechinger, & Stutzer, 2007; see also

[8] This is not incompatible with our notion that the impact of extremism is proportionate to its duration. More generally, whereas an imbalance would not be considered extreme if it did not exceed some threshold of duration, neglect of the alternative needs would create pressure toward the restoration of balance.

Abadie & Gardeazabal, 2008; Arin, Ciferri, & Spagnolo, 2008; Brounen & Derwall, 2010).

Last but not least important, some extremisms exact immeasurable human suffering affecting not only the extremists themselves but their families and their victims. Indeed, the relative rarity of extremism should not be mistaken for insignificance of the problem for societies worldwide.

The foregoing diverse expressions of motivational imbalance are assumed to hold across varied , basic needs. Each of these may assume dominance and crowd out its counterparts. Accordingly, the empirical evidence supporting the aspects of motivational imbalance described above spans a variety of content domains, across different levels of analysis, and even different levels of phylogeny, as shown later.

On The Shoulders of Giants

As noted earlier, the present theory builds on constructs and insights of past motivational theorists and weaves them into a novel model addressed at the phenomenon of extremism: The notion of balance or equilibrium defined by Cannon (1932) as a *within-need* factor is now extrapolated into a *between-needs* context. The concepts of *need prepotency* discussed by Maslow (1943) in context of his hierarchical model is now liberated from hierarchical constraints and assumed to enable any salient need (whether biological or psychogenic) to override the others. Guidance of means selection by considerations of *expectancy and value* is indebted to Vroom's (1974) influential conceptualization, and the arousal of motivation through *deprivation* or *incentivization* is indebted to learning theorists such as Hull (1943), Tolman (1949) or Spence (1956) among others.

Our cumulative scientific past thus insinuates itself into the present and affords the foundation for the present conceptualization. Though it rests on building blocks that have been fashioned by others,, our theory ventures in entirely new directions and charts out a heretofore unexplored conceptual territory. Despite the fascination it elicits, and the attention that it receives from the media, the pop culture, and academics, extremism has never been approached in a systematic manner. Our theory addresses this gap in knowledge and demonstrates how extremism, as well as moderation are the result of specific motivational dynamics. Thus, we identify the general mechanism underlying extremism across its diverse manifestations. In this fashion, our theory contributes to the past even as it is guided by the past, and by our intellectual heritage.

Empirical Evidence

1. Motivational Consequences

1(a). Negative relation between the motivation to pursue dominant versus alternative needs. As noted earlier, motivational imbalance should express itself in a negative correlation between individuals' motivation to pursue their dominant versus their alternative needs. This negative relation is evidenced at the behavioral as well as the neural level in both animals and humans.

For instance, flies will tolerate a higher concentration of bitter (and potentially toxic) contaminants in food as they get hungrier. Their 'concern' for *taste* seems to decline the greater is their concern for *nutrition* . Research on the brain mechanisms involved in this phenomenon reveals that taste neurons become more sensitive to sweet-tasting substances and less sensitive to bitter tastants (Inagaki, Panse, & Anderson, 2014).

Research carried out with *mice* (Lin et al., 2011) revealed that the neurons activated during male-male aggressive encounters were *suppressed* in the presence of females or during copulation. These findings suggest that when mating/courtship becomes a predominant concern, other needs such as defense (e.g., against possible aggressors or invaders) are inhibited and their momentary importance to the animal declines.

In work with foraging juvenile *crayfish*, Schadegg & Heberholz (2017) demonstrated that whereas sated animals opted for the safer response of escaping from an approaching shadow by executing a tail flip and thus removing themselves from the source of danger, hungry animals opted for the riskier response of 'freezing' on their place that kept them closer to the source of food. This suggests that when the hunger motive predominates concerns with safety are attenuated, and the crayfish is choosing a suboptimal anti-predatory response.

In humans**, s**tudies on workaholism showed a negative correlation between commitment to work and satisfaction with other life areas. For instance, Burke (1999) showed that managers and professionals reporting greater workaholism also reported less satisfaction in extra-work areas such as family, friends and community.

This unilateral focus of one's cognition and behavior on the dominant need is well exemplified by drug addiction. As addiction to drugs progresses, individuals become less and less sensitive to rewards other than their drug of abuse. This happens because compared to other rewards (e.g., food, sex, etc.) most such drugs overstimulate the brain's reward system. The system becomes sensitized to the rewarding properties of the drugs. As a consequence, drug users experience a pathologic "wanting" and insatiable use

of the drug (e.g., Robinson & Berridge, 2004; Ahmed & Koob, 1998; Koob & Le Moal, 2001, 2008) which dwarfs the satisfaction from addressing basic alternative concerns (e.g., Di Chiara et al., 1998; Fiorino & Phillips, 1999; Kalivas & Volkow, 2005). Indeed, drug abusers often report that they experience less pleasure and enjoyment from activities that were pleasurable before the addiction. This disproportion in the magnitude of drug *wanting* relative to other possible needs is compared to "the difference between someone whispering into your ear and someone shouting into a microphone" (National Institute of Drug Abuse [NIDA], 2019b).

1(b). Sacrifices. Motivational imbalance could take the form of sacrifices whereby the most basic needs are ignored in pursuit of a dominant need. For instance, animals given unlimited access to drugs tend to self-administer the drug to the point of severe weight loss and even death (Bozarth & Wise, 1985; Van Ree, Slangen, & de Wied, 1978; Deneau, Yanagita, & Seevers, 1969; Johanson, Balster, & Bonese, 1976). The same pattern of results was replicated using a variety of drugs (e.g., morphine, heroin, fentanyl and d-amphetamine, codeine, etc.) on rats as well as monkeys (Van Ree et al., 1978; Deneau et al., 1969; Johanson et al., 1976). For most of the tested substances, the animals initiated and maintained a self-administration pattern, which resulted in reduced food intake, and weight loss. Some of the tested animals continued self-administration of drugs to the point of death suggesting that once a need becomes dominant, the individual might be willing to sacrifice even the most basic needs.

Animal research on drugs, has been often criticized for not providing an adequate model for human behavior. The environment in which the behavior is investigated is often artificial. For instance, in most self-administration studies, the drugs were the only

source of stimulation available. One might argue that the pattern of findings described above is not relevant to humans who leave in a rich and complex environment. Interestingly enough, however, humans too are willing to sacrifice basic needs such as health and security to pursue a motivation that becomes dominant. Research on *obsessive* and *harmonious* passion **(**Vallerand, 2015) provides ample evidence for this assertion. Obsessive passion refers to a motivationally imbalanced pursuit of the object of one's passion (whatever it might be) to the exclusion of other concerns. In contrast, harmonious passion, as noted earlier, refers to a pursuit of one's passionate object in concert with other concerns. Obsessively passionate individuals tent to focus exclusively on their absorbing activity and neglect their personal health, safety, interpersonal and social goals. Indeed, obsessive passion is positively related to susceptibility to injuries among competitive runners (Vallerand et al., 2003); it predicts risky and dangerous behaviors (e.g., cycling in the winter, dangerous acrobatics in swing dancers; Harvey & Vallerand, 2013) and addiction patterns among marijuana smokers (Davis, Arterberry, Bonar, Bohnert, & Walton, 2018; Steers, Neighbors, Hove, Olson & Lee, 2015). Obsessively passionate dancers show insufficient withdrawal from dancing when recovering from injuries (Rip, Fortin, & Vallerand, 2006), reflecting a sacrifice of health on behalf of one's prepotent desire. Obsessively passionate 'doctors without borders' exhibit considerable self-neglect during missions abroad and tended to suffer lower overall health and greater incidence of post-traumatic stress disorder (PTSD) than harmoniously passionate doctors (St-Luis, Carbonneau & Vallerand, 2016).

Obsessively passionate individuals are quite willing to make *social* sacrifices as well: Obsessive passion for the Internet correlates with romantic couples' interpersonal

conflicts and poor dyadic adjustment (Carbonneau & Vallerand, 2013; Séguin-Levesque, Laliberté, Pelletier, Blanchard, & Vallerand, 2003) and with the amount of money spent on gambling (Rousseau, Vallerand, Ratelle, Mageau, & Provencher, 2002).

Research on behavioral addictions reveals a similar pattern. Addictive exercisers spend considerable amount of time on exercise or exercise-related activities, hence neglecting important social, occupational, or recreational matters (e.g., Sachs, 1981; Griffiths, 1997). Conceptually replicating the conduct of obsessive *dancers*, addictive *exercisers* continued to exercise despite obvious negative health consequences including shin splits, damaged ankles, knees, and hamstrings (De Coverley Veale, 1987; Sachs, 1981).

Sacrificing financial, health and social goals for a favored focal activity was found in the domains of workaholism[9] (e.g., Bonebright, Clay, & Ankenmann, 2000; Machlowitz, 1980; Ng et al., 2007; Robinson, Flowers, & Carroll, 2001), shopping addiction (Clark & Calleja, 2008), and excessive gaming (e.g., Brunborg, Mentzoni, & Frøyland, 2014; Chappell, Eatough, Davies, & Griffiths 2006; Wenzel, Bakken, Johansson, Götestam, & Øren, 2009). For instance, compulsive arcade gamers were willing to sacrifice the purchase of food, or clothing in order to keep playing (Egli & Meyers, 1984; McClure & Mears, 1984). The same was true for excessive online gamers known to forego food and sleep (Huff & Collinson, 1987) as well as sacrifice work, education, hobbies, socializing, and time with partners and family on the altar of their addiction (e.g., Brunborg et al., 2014; Chappell et al., 2006; Chiu, Lee, & Huang, 2004;

[9] *Karoshi* (death from overwork) is blamed for death of 10% of working men in Japan (Yates, 1988; see also Shimomitsu & Levi, 1992).

Grüsser, Thalemann, & Griffiths, 2007; Rehbein, Kleimann, & Mößle, 2010; Skoric, Teo, & Neo, 2009; Wan & Chiou, 2006; Wenzel et al., 2009).

Committed gamers have been known to suffer death because of their addiction (e.g., Chuang, 2006; Loftus & Loftus, 1983; Weinstein, 2010; Lafrenière, Vallerand, Donahue & Lavigne, 2009). In 2005, a South Korean man expired after a 50-hour gaming session; in 2011, a twenty-year old man died from cardiac issues related to a marathon session of *Halo*; and in 2012, a Taiwanese man collapsed and died after playing *Diablo* III for 40 hours straight (Henn, 2016, March 10).

Prolonged drug addiction was labeled "a pathology of motivation and choice" (Kalivas & Volkow, 2005; see also Kopetz, 2016; Kopetz et al., 2013; Kopetz & Orehek, 2015; Loewenstein, 2007) in reference to addicts' willingness to sacrifice their social, interpersonal, occupational, and recreational activities in order to sustain their drug use (American Psychiatric Association [APA], 2013). "I loved heroin more that I loved my kids" admitted a former heroin abusing mother (Hammer, 2016, October 21) illustrating how priorities are misaligned in addiction.

Finally, individuals whose need for mattering and significance is served by a deep commitment to a religious or ethno-nationalist cause have been known to sacrifice their lives in acts of suicide bombing (Webber et al., 2017). In a striking testimony to such sacrifice, a Black Tamil Tiger, member of the suicide cadre of the Liberation Tigers of Tamil Eelam (LTTE) interviewed in North Eastern Sri Lanka described his life as follows:

"Family and relationships are forgotten in that place. There was no place for love. That means a passion and loyalty to that group, to those in charge, to those who

> *sacrificed their lives for the group... Then I came to a stage where I had no love for myself. I had no value for my life. I was ready to give myself fully, even to destroy myself, in order to destroy another person."* **(**Kruglanski, Gelfand et al.,, 2014, p. 564)

1(c). Preferences/valuations. Motivational imbalance should result in increased relative *preferences* for, and more positive *evaluations* of activities that serve the focal need compared to those serving the alternative needs. For instance, compulsive eaters have significantly higher food cravings than do non-overeating participants (Davis et al., 2007; Mussell et al., 1996). Moreover, they prefer sweet food with high fat content (but not savory foods with low fat content, Dalton & Finlayson, 2014; Yanovski, 2003). In contrast, extreme dieters – those on the opposite pole of imbalanced eating continuum – tend to view food more negatively. A study by Stroebe, Mensink, Aarts, Schut, and Kruglanski (2008) showed that chronic dieters had a more ambivalent attitude towards eating than non-dieters and the more concerned their participants were with dieting, the more negative were their attitudes towards food.

Under a heightened motivation to smoke (i.e., a craving) smokers exhibit more positive attitudes toward cigarettes and are more willing to purchase raffle tickets for the opportunity to win them (Brendl, Markman, & Messner, 2003; Sherman, Rose, Koch, Presson, & Chassin, 2003). They also overemphasize the positive outcomes of smoking (Kirchner & Sayette, 2007) and underestimate their vulnerability to smoking-related disease (Windschitl, 2002).

2. Cognitive Consequences

Motivational imbalance has important cognitive consequences. When individuals' cognitive resources are directed towards the focal, pressing, need they are correspondingly withdrawn from other activities. These effects are revealed in research on the much studied phenomena of (a) *selective attention* and *inhibition*, (b) *preoccupation/rumination* with the dominant concern, (c) *projection* of own dominant need onto others and (c) *choice-expansion* of means to its satisfaction.

2(a). Selective attention. Attention theorists agree that humans have limited attentional resources (e.g., Kahneman, 1973; Kanfer & Ackerman, 1989; Meyer & Kieras, 1997; Norman & Bobrow, 1975; Pashler, 1994; Payne 1982; Russo & Dosher, 1983; Shaw & Shaw, 1977). Because only a certain amount of information may be processed at any given time, an effective selection mechanism is required whereby the focus is only on the stimuli relevant to currently important goals. concomitantly, attention is withdrawn from less important concerns (Blair, Watson, & Walshe, 2009; Simons, 2000; Treisman & Gelade, 1980; Wolfe, 2003). The selective aspect of attention is expressed in metaphors such as *spotlight* (Broadbent, 1982; Eriksen & Hoffman, 1973; Posner, 1980; Yantis, 1988), *filter channel* (LaBerge & Brown, 1989), and *zoom lens* (Eriksen & St. James, 1986; Eriksen & Yeh, 1985) all referring to the concentration of processing resources on the dominant goal (Downing & Pinkel, 1985; Kahneman, 1973; Shaw, 1978).

Multiple experiments on divided attention (e.g., Kahneman, 1973; Navon & Miller, 2002), dual-task performance (e.g., Pashler, 1994) and task switching (e.g., Monsell, 2003) support the notion that human information processing system has a

limited capacity and that juggling tasks produces interference, distraction, slower reaction times and ultimately more errors (see Courage, Bakhtiar, Fitzpatrick, Kenny, & Brandeau, 2015; Monsell, 2003; Pashler, 1994; Salvucci & Taatgen, 2011; Posner & Warren, 1972; for overviews).

There is ample evidence that addicts' attention is automatically drawn to drug-related cues. For instance, in studies using drug-specific Stroop tasks, dot probe, and/or visual probe or flicker tasks drug users are more cognitively distracted by drug-related stimuli than by neutral stimuli. Such *attentional bias* plays an important role in guiding subsequent substance use (Cox, Fadardi, & Pothos, 2006). Current smokers have been found to exhibit greater smoking Stroop effects than never-smokers or past-smokers (Munafo, Mogg, Roberts, Bradley, & Murphy, 2003). Moreover, smoking Stroop effects have been found to correlate significantly with the number of cigarettes smoked per day (Mogg & Bradley, 2002; Zack, Belsito, Scher, Eissenberg, & Corrigall, 2001) and with short-term cessation outcomes (Waters, Shiffman, Bradley, & Mogg, 2003). Other studies employing the visual focus localization paradigms have also reported that attentional bias for drug-related stimuli correlates with self-reported drug use (Mogg, Bradley, Field, & De Houwer, 2003; Townshed & Duka, 2001; Yaxley & Zwaan, 2005).

2(b). Inhibition. Mere *reallocation* of mental resources to a dominant need may not suffice to ensure its pursuit and gratification. Additionally, resources may be required to inhibit alternative needs that vie for attention. Already the German *will psychologists* of mid twentieth century believed that successful goal pursuit required not only focusing on the task at hand, but also countering the interference of competing pursuits (e.g., Ach, 1935). Recent research has shown that such "shielding" in fact takes

place and that its strength is directly proportionate to the focal goal's importance. Shah, Friedman, and Kruglanski (2002) showed that the activation of focal goals to which the individual is committed inhibits the accessibility of alternative goals. This held true for participants' abstract and chronic goals, their weekly goals, as well as situationally specific task goals. Importantly, the goal-shielding effect varied as a function of one's degree of commitment to the focal goals (see also Veling & van Knippenberg, 2006; McCulloch, Aarts, Fujita, & Bargh, 2008).

Forming specific action plans, or *recalling* specific means relevant to one's dominant goals results in the inhibition of distracting cues or competing behaviors and facilitates the implementation of the relevant plans or means. This effect referred to as retrieval-induced forgetting (RIF) involves the inhibition (i.e., 'forgetting') of cognitions or behaviors that interfere with current goal pursuit (c.f. Pica, Bélanger, Pantaleo, Pierro, and Kruglanski [2016], Pica, Pierro, Bélanger, and Kruglanski [2013, 2014], and Pica, Pierro, and Kruglanski [2014]).

These effects manifest themselves across different real-life phenomena. For instance, in the realm of close relations, Maner and colleagues (2009) showed that when participants' salient goal was to maintain a long-term relationship, their attention to highly attractive others was reduced. Furthermore, in a dot probe attention task, participants whose relationship maintenance motive was experimentally enhanced, paid substantially less attention to images of attractive opposite-sex targets (Maner, Rouby, & Gonzaga, 2008).

Joint effects of selective attention *and* inhibition are illustrated by the phenomenon of *inattentional blindness* where "people fail to notice stimuli appearing in

front of their eyes when they are preoccupied with an attentionally demanding task" (Most, Scholl, Clifford, & Simons, 2005, p. 217; see also Mack & Rock, 1998). Research has shown that inattentional blindness might take such striking forms as the inability to see a person wearing a gorilla suit walking across the screen (Simons & Chabris, 1999) or to notice an airplane presented in front of one's very eyes (Haines, 1991).

Research on *obsessive passion* replicates these phenomena. In a series of experiments, Bélanger, Lafrenière, Vallerand, and Kruglanski (2013) showed that obsessive passion for an activity (reflecting a motivational imbalance) was related to a greater suppression of an alternative goal than was harmonious passion (reflecting a motivational balance). Obsessive (but not harmonious) passion was also associated with the progressive development of inter-goal inhibitory links. Specifically, obsessive passion was associated with greater focus on the passionate activity and more pronounced suppression of concurrent alternative goals.

Similar patterns of exaggerated cognitive focusing on a dominant goal accompanied by "blindness" to alternative concerns is found in highly diverse cases of motivational imbalance, including substance addictions (e.g., Schneider & Weiss, 2001), behavioral addictions (e.g., Clark & Calleja, 2008; Ng, Sorensen, & Feldman, 2007; Walker et al., 2006; Wang et al., 2013), extreme sports (Puchan, 2004; Self et al., 2007), extreme dieting and extreme *love* (Tennov, 1979).

2(c). Preoccupation/rumination. A specific cognitive expression of motivational imbalance is preoccupation with the dominant need and rumination about it. According to Tennov (1979) *limerence*, or excessive romantic attraction, "is first and foremost a condition of cognitive obsession" (Tennov, 1979, p. 33) with one's unique focus on the

loved one and their positive features. In the state of limerance one's beloved's attractive characteristics are exaggerated while unattractive characteristics are unrecognized (echoing the adage that "love is blind").

According to Tennov (1979), under intense limerence, musing about one's love object can take up to 85% or 100% of one's waking hours (see also Reynolds, 1983). Inevitably, this comes at a price. Other matters are "shunted off to the side and are thought about only to the extent that limerence leaves room for them" (Tennov, 1979, p. 45). Furthermore, thoughts of one's beloved are easily primed as everything is associated with them thus serving as a retrieval cue (Tennov, 1979). Infatuated individuals tend to be highly sensitive and cognitively attuned to their love object's behavior in the search for signs of reciprocation (Wakin & Vo, 2011). Intrusive thinking and daydreaming also is common which, recalling the obsessive-compulsive disorder, has been related to decreased levels of central serotonin (Fisher & Davis, 2002).

The obsessive aspect of extreme love is also exemplified in cognitions of stalkers (Meloy & Fisher, 2005; Meloy, 1998; Meloy et al., 2000). The latter typically idealize or devalue the victims; they are either angry with them and/or love them immensely. Such intense preoccupation enables stalkers to neglect social and legal constraints against their maladaptive actions (Meloy & Fisher, 2005; see also Meloy, 1998).

High degrees of obsessive passion are associated with ruminative thoughts across different content domains of passion such as soccer fanship (Vallerand et al., 2008), work (Forest, Mageau, Sarrazin, & Morin, 2011), gambling (Ratelle, Vallerand, Mageau, Rousseau, & Provencher 2004), sex and a variety of other activities about which people may obsess (Carpentier, Mageau, & Vallerand, 2012; Vallerand et al., 2003).

In summary, there is abundant evidence that in a state of motivational imbalance individuals exhibit a "single track mind" expressed in a near exclusive preoccupation with objects and events related to their dominant need while excluding other matters.

2(d). Projection of one's focal need onto others: Under motivational imbalance people are more likely to project their focal versus the alternative needs onto others. Simply, the dominant motivation is likely to increase the cognitive accessibility of need related concepts (Eitam & Higgins, 2010) and hence their usability in person perception. Research shows that people with a dominant pro-social goal see others as more helpful (Sherman, Presson, & Chassin, 1984), aggressive individuals overattribute hostile intentions to others (Berkowitz, 1977; Dodge & Frame, 1982), competitive ones perceive others as more competitive (Kawada, Oettingen, Gollwitzer, & Bargh, 2004), and those obsessively passionate about sex perceive situations in a sexually biased manner (Philippe, Vallerand, Bernard-Desrosiers, Guilbault, & Rajotte, 2017).

2(e). Choice expansion. Motivational imbalance "releases" the motivational and cognitive constraints alternative needs normally exercise upon behavior. In a state of imbalance, the individual is "free" to select whatever option best fulfills their most important need. Whereas the active presence of multiple goals narrows the set of means to a focal goal and restricts them to those that serve (or at least do not interfere with) all of the active goals, under motivational imbalance, when one goal dominates the others, the set of means to the focal goal *expands* (Kopetz, Faber, Fishbach, & Kruglanski, 2011). Specifically, participants equally concerned with the goals of *food enjoyment* and *weight control* restricted their choice of foods (as means to their goals) to options that satisfy both goals. However, when commitment to the goal of food enjoyment was

experimentally enhanced, participants were willing to consider a larger number and variety of foods attesting to an expanded means-set under motivational imbalance; these included highly caloric foods incompatible with the weight control goal. Importantly, expansion of the means-set to the focal goal was mediated by *inhibition* of the weight control goal (see Figure 2) further supporting the notion that motivational imbalance results in inhibition of goals other than the dominant objective.

Figure 2 here

A study of sexual motivation (Ariely & Leowenstein, 2006) showed that aroused male participants (i.e., for whom the sex need was presumably dominant) found a wider range of sexual stimuli and activities appealing than non-aroused participants. Strikingly, the aroused individuals were more willing to have sex with a very young (12-year-old) person, a much older woman, a less attractive woman; they even found more imaginable to be sexually excited by contact with an animal. Aroused participants were also more willing to engage in morally questionable behavior (such as lying, getting someone drunk or slipping a drug) and to engage in unsafe sex in order to obtain sexual gratification. These results thus suggest that the motivational imbalance produced by sexual arousal liberates behavior from constraints and reduces the relative importance of other considerations such as abiding by social norms regarding sexual behavior, protecting oneself against a sexually transmitted disease, etc. In line with the present analysis, the authors conclude that “sexual arousal seems to narrow the focus of motivation, creating a kind of tunnel-vision where goals other than sexual fulfillment become eclipsed by the motivation to have sex” (Ariely & Leowenstein, 2006, p. 95).

3. Behavioral Consequences of Motivational Imbalance

3(a). Choosing extreme means. A heightened goal importance often translates into individual's tendency to search for and implement the most instrumental means, one most likely to produce goal fulfillment. In many cases, the most instrumental means are extreme means, that is, means that while serving the focal goal, sacrifice other concerns also known as "counterfinal" (Kruglanski, Chernikova, Babush, Dugas & Schumpe, 2015; Schumpe, Bélanger, Dugas, Erb, & Kruglanski, 2018). The counterfinal means is extreme in the sense that people in a state of moderation in which all their basic needs are salient, would refrain from selecting it. However, motivationally imbalanced individuals for whom one need suppresses the others are freer from the latters' constraints and may view the counterfinal means as particularly effective way of gratifying their dominant concern precisely because of the cost it exacts (Schumpe et al., 2018).

Bélanger, Schumpe, and Nisa (2019) used Vallerand's (2015) distinction between harmonious and obsessive passion to examine individuals' tendency to use "counterfinal" means., These investigators (Bélanger et al., 2019, Study 2) found that harmoniously passionate individuals, those for whom several different needs are all important, tended to select "multifinal" means that serve both the focal goal and current alternative goals. By contrast, obsessively passionate individuals tended to select predominantly the counterfinal means. Consistent with the present theory, this preference was mediated by suppression of the alternative goals (see Figure 3). In a related series of studies, Bélanger, Schumpe, Nociti, et al. (2019) found that obsessive passion for a given political ideology led to support for violence on its behalf through the suppression of humanistic concerns (i.e. moral disengagement).

Figure 3 here

The tendency to enact counterfinal behaviors that undermine basic human needs is common to different types of extremism. Research on eating disorders shows, for instance, that whereas moderate dieting includes healthy regimens, such as reduction of caloric intake, balanced diets, increased fruit and vegetable intake, nutritional variety, and exercising, extreme dieting (driven by significance needs) often involves the use of unhealthy and potentially dangerous methods (e.g., Daee et al., 2002; French, Story, Downes, Resnick, & Blum, 1995; Patton, Selzer, Coffey, Carlin, & Wolfe, 1999; Story, Neumark-Sztainer, Sherwood, Stang, & Murray, 1998). These include skipping meals, following an extremely low-calorie diet, eating one meal per day, using powder diet drinks, throwing away food to avoid gaining weight (Stein & Reichert, 1990), or taking up smoking (Grigg, Bowman, & Redman, 1996; Seo & Jiang, 2009).

Dangerous behaviors inimical to safety and survival are also typical of extreme sports. In fact, it is precisely the elements of risk and danger that differentiates the latter sports from the ordinary ones (Brymer, Downey, & Gray, 2009; Brymer & Oades, 2009; Puchan, 2004; Young, 2002). For example, unlike skydivers, who utilize safety devices such as warning technology and second parachute, B.A.S.E. (buildings, antennae, span, earth) jumpers do not use any. They leap from solid structures (cliffs, bridges, or buildings) only a few hundred feet from the ground giving them little chances of survival should anything go wrong.

Practitioners of other extreme sports put themselves at risk of utmost pain, exhaustion and sleep deprivation by participating in events like multiday ultra-endurance races (e.g., the *Marathon des Sables*, a 6-day running event that requires participants to

cross 150 miles of the Sahara desert while carrying all the necessary supplies, or the Western State Endurance Run, which requires runners to complete a 100-mile course through the Sierra Nevada mountains, Young, 2002). Consistent with the logic of *counterfinality* (Kruglanski et al., 2015; Schumpe et al., 2018), Brenton (2000) argued that the risks and suffering incurred in extreme sports are essential for effecting a gain in significance. As he put it: "Paradoxically, the more intense the suffering, the more the achievement has a reassuring personal significance, and the more fulfilling the satisfaction of having resisted the temptation to give up" (p. 1).

Self-sacrifice is promoted by religious orders that view it as superior means to the "good" (i.e., virtuous) life that lends one personal significance. For example, the Missionaries of Charity followed Mother Teresa's rule of "total surrender" and "giving until it hurts" (Chawla, 1992, p. 171). This means self-denial, a full commitment to the work, and life devoid of everyday comforts and conveniences. As Chawla (1992, p. 60) described it, the Missionaries of Charity "are prepared to accept suffering, renunciation and even death." Similar idea of "total surrender" is found in the lives of other religious leaders (e.g., Prophet Muhammad, "an archetype of the complete act of surrender *(islām*) to God," Armstrong, 2001, p. 24) and other martyrs who lay their lives at the altar of faith. The willful suffering of religious martyrs is emphasized in many hagiographical works (e.g., a modern analysis has identified eighty-one different forms of suffering, mutilation, and death in Jacobus's "The golden legend", one of the first medieval works about Christian saints, Duffy, 2012; see also Farmer, 1997).

Under motivational imbalance, *criminal activities* (otherwise constrained by one's need to uphold the law, and retain one's standing in society) may be entertained as

options. This is often so in addictions. Addicts cheat, steal, and break the law in various ways to feed their drug habit (e.g., APA, 2013; Kalivas & Volkow, 2005; Kopetz, 2016; Lesieur & Rosenthal, 1991; Fisher, 1994; Huff & Collinson, 1987; Lee, 1989; Cooper, Scherer, Boies, & Gordon, 1999; Delmonico & Carnes, 1999). Consistent with the present theory, researchers have argued that such aberrant behaviors are enabled because addiction is characterized by the increased incentive value of the drug and the reduced incentive value of other stimuli. In such a case, there is no conflicting motivation that would constrain the behavior (Baker, Piper, McCarthy, Majeskie, & Fiore, 2004; Loewenstein, 1996, 2007; see Figure 1) resulting in the addict's willingness to resort to any means necessary to obtain their craved for substance.

Obsessive love is also characterized by the willingness to resort to counterfinal, or extreme means. For instance, obsessive passion was observed to prompt dysfunctional behavior toward the loved one (Carbonneau & Vallerand, 2013). Under extreme love, people are ready to ignore the emotional bonds of marriage and family and simply walk away with the chosen other. They are ready to sacrifice all for the idolized lover, including a reordering of their daily priorities, changing their clothing, mannerisms, habits, or values to become appealing and available to him or her. They are also ready to perform degrading or physically dangerous acts to win the loved one back (Fisher, Xu, Aron, & Brown, 2016).

Violence committed by stalkers toward their professed beloveds occurs in 25% to 40% of stalking instances (Meloy, 2002; Spitzberg, 2002; Boon & Sheridan, 2002; Harmon, Rosner, Owens, 1998; Meloy, Davis, & Lovette, 2001; Mullen, Pathe, Purcell, & Stuart, 1999; Palarea, Zona, Lane, & Langhinrichen-Rohling, 1999) while homicides

rates motivated by vengeance against a romantic partner have been recently on a rise (e.g., Fridel & Fox, 2019).

Restoring moderate behavior. Individuals' willingness to resort to extreme means is driven by the desire to fulfill a pressing need through the most effective means. This implies that motivational balance and moderate behavior could be restored by increasing the salience of the alternative, previously suppressed, needs.

For instance, in animal models of drug administration, rats in a colony where affiliative motives might have been strong, used less drugs than rats alone (Alexander, Beyerstein, Hadaway, & Coambs, 1981). Similarly, Liu, Young, Curtis, Aragona, and Wang, (2011) showed reduced effects of amphetamine administration in pair-bonded, but not in sexually naive prairie voles suggesting that pair-bonding experience decreases the rewarding properties of amphetamine. Zlebnik, Saykao, and Carroll (2014) showed that access to a running wheel attenuated rats' cocaine-seeking behavior. This presumably happened because access enhanced the motivation to exercise, which in turn reduced the saliency and importance of substance administration.

Consistent with the animal studies, human research suggests that social bonds play an important role in prevention and/or recovery from addiction. As Hari (2017, April 18) put it: "the opposite of addiction is not sobriety. It is human connection." Indeed, social factors have protective effects on drug abuse. For example, strong adolescent–parent attachments have been associated with decreased odds of substance use problems (Ellickson, Collins, & Bell, 1999; Bell, Forthun, & Sun, 2000) while in already addicted individuals, close relationships between spouses facilitate the recovery from drug addiction (Kosten, Jalali, Steidl, & Kleber, 1987). In this vein, too, Xu, Wang, Lei, et al.

(2012) showed that feelings of intense romantic love attenuated brain activity associated with cigarette cue-reactivity among abstinent smokers.

Research shows that upon quitting one addictive substance or behavior, the addicted individual typically replaces it with another form of rewarding substance or behavior (Alter, Lohrmann, & Greene, 2006; DiNardo & Lemieux, 2001; Donovan, 1988; Haylett, Stephenson, & Lefever, 2004; Marks, 1990; Haylett et al., 2004). Accordingly, clinicians treating addictions try to engage patients in new, healthy reinforcers such as sports, new hobbies and more extensive or new social interactions (e.g., Bickel, Johnson, Koffarnus, MacKillop, & Murphy, 2014; Liu et al., 2011; Salvy, Nitecki, & Epstein, 2009; Vaillant, 1988). Addiction treatment studies showed that increasing the saliency and importance of alternative goals by introducing different rewards (social or monetary) increased substance-abuse treatment retention (Magidson et al., 2011) and significantly reduced substance use, smoking, and/or alcohol abuse (Higgins, Heil, & Lussier, 2004; Hart, Haney, Foltin, & Fischman, 2000; Higgins, Bickel, & Hughes, 1994; MacPherson et al., 2010; Reynolds, MacPherson, Tull, Baruch, & Lejuez, 2011; Kopetz, MacPherson, Mitchell, Huston-Ludlam, & Wiers, 2017)

In summary, there is substantial evidence that the more pronounced the motivational imbalance, the more likely it is that individuals will enact behaviors incompatible with their basic needs and suffer deleterious outcomes in consequence. It is also instructive, that a reduction of imbalance or restoration of balance by activating previously neglected needs may reduce or reverse those deleterious effects.

4. Affective Consequences of Motivational Imbalance: Agony and Ecstasy

According to the motivational imbalance model, extremisms arise where a given need is prioritized over other basic concerns. In consequence, individuals may become highly emotionally dependent on that need. Its satisfaction may engender highly positive affect whereas satisfaction failure-- a highly negative one. Motivationally imbalanced individuals may be putting all their affective "eggs" into a single motivational "basket," and therefore exhibit considerable emotional volatility. Empirical evidence from multiple domains supports these notions.

For instance, research by Linville (1985) showed that extremity of affective reactions depended on the number of life aspects (such as work, family, friendships, or hobby) comprising one's self identity and the degree to which those aspects are perceived as related. In Linville's work, the combination of both aspects is said to define the degree of self-complexity. In one of her studies, Linville demonstrated that persons lower in self-complexity (with fewer roles associated with the self) experienced a more intense negative reaction after failure and a more intense positive reaction after success than did persons high in self-complexity as well as greater variability in affect (Linville, 1985; Rafaeli-Mor & Steinberg, 2002).

Under motivational imbalance person's emotional states are highly dependent on states of the dominant need; success on a passionate activity elicits particularly high levels of positive emotions while failure can be devastating. Soccer fans' emotions were more positive after victory than after a defeat; however, high levels of obsessive passion intensified these emotions, particularly exacerbating negative emotions after defeat (Vallerand, Verner-Filion, Lafrenière, & Bureau, 2014, Study 1). Similarly, obsessively

(vs. harmoniously) passionate recreational golfers exhibited higher levels of positive affect after success, and higher levels of negative affect after failure (Verner-Filion, Schellenberg, Rappoport, Bélanger, & Vallerand, 2018). Finally, the self-esteem of participants obsessively (vs. harmoniously) passionate about a magic game varied greatly with their success in a game tournament (Mageau, Carpentier, & Vallerand, 2011).

Exaggerated influence of the dominant need on self-evaluations and attendant affect is also seen is extreme dieters, related to their body weight or shape. Indeed, extreme swings of affect driven by those concerns constitute one of the diagnostic criteria for anorexia nervosa and bulimia nervosa (APA, 2013; Attia & Walsh, 2009; Yager & Andersen, 2005). For workaholics, too, life happiness depends primarily on work (Ng et al., 2007). Addicted gamblers and video gamers report euphoric states comparable to the "high" induced by cocaine or other drugs while gambling or playing (Lesieur & Rosenthal, 1991; Currie, et al., 2006; Kessler, Hwang, LaBrie, et al., 2008; Lesieur & Rosenthal, 1991; Weinstein, 2010). Most excessive gamers feel that their life would be "dark" and "boring" without on-line games (Wan & Chiu, 2006). And internet sex addiction is presumably driven by the pleasure derived from "returning again and again to the euphoria and intensity provided by an unending stream of images, words, and interaction on the Internet." (Schneider & Weiss, 2001, p. 31).

Nowhere these affective fluctuations are as pronounced as in the case of substance use. Indeed some drugs of abuse were found to release 2 to 10 times the amount of dopamine that natural rewards such as do eating and sex (e.g., Di Chiara & Imperto, 1988) resulting in very intense "highs" when using a substance and very debilitating "lows" when unable to do so.

Extreme mood swings characterize romantic passion. Fisher et al. (2016) report that individuals in the early stages of intense romantic love tend to exhibit a similar emotional variability and extremity as do addicted individuals. They feel a "rush" of exhilaration when seeing or merely thinking of their beloved (their euphoria presenting a similar brain pattern as does a drug "high," Breiter et al., 1997; Bartels & Zeki, 2000; Fisher, Aron, & Brown, 2006; Xu et al., 2011). However, when the relationship suffers a setback, as where the love is unfulfilled (one is separated from one's beloved) or unrequited, one suffers and often falls into listlessness, brooding, and feelings of despair occasionally suffering heart attacks or strokes (Rosenthal, 2002).

Wide ranging mood swings, from the heights of ecstasy to the abysses of depression, were found to characterize the limerence syndrome (Tennov, 1979; Wakin & Vo, 2011). The mood of limerents was found to almost entirely depend on their beloved's perceived reciprocation. When requited, love made them happy in the extreme, and when unreciprocated, it fostered utter despair and agony (Tennov, 1979, p. 45). For someone in intense love, absence of the loved person (or its sheer possibility) may produce aversive bodily symptoms: physical pain in the chest and abdominal regions, sleep disturbance, irritability, and depression (Tennov, 1979).

In summary, across diverse domains of experience, motivational imbalance breeds emotional volatility expressed in wide swings of affect alternating between ecstatic happiness and agonizing distress. Such affective polarity is consistent with the imbalanced individual's heightened emotional dependency on the prioritized need. The need's intensity is correspondent with exaggerated contentment upon need satisfaction, and exaggerated disappointment on its frustration.

5. Social Consequences

Infrequency. The neglect of basic needs that motivational imbalance entails should render it generally difficult to sustain. As a consequence, only small minorities of people should exhibit extreme behavior of appreciable duration. Extant evidence supports this hypothesis.

Indeed, extreme behaviors are low-prevalence phenomena. For instance, Internet addiction has been found in around 2% of studied samples (e.g., Pawłowska & Potembska, 2011; Poprawa, 2016). The prevalence of video game addiction was estimated at 0.6% to 2% (Mentzoni et al., 2011; Wenzel et al., 2009). Prevalence of exercise addiction is also rare (Szabo, 2000; De Coverley Veale, 1987) oscillating around 2.5-3% (Terry, Szabo, & Griffiths, 2004). Black and Carver (2007) report that the lifetime prevalence of addictive shopping is about 5.8%. Cooper et al. (1999) found that slightly above 4% of the samples studied showed symptoms of Internet sex addiction of magnitude sufficient for interference with major areas of their life. Extreme dieting is also rare and occurs primarily among older adolescents or young adults (mostly women, e.g., Attia & Walsh, 2009; Hoek, 2006; Hudson, Hiripi, Pope, & Kessler, 2007; Leon, Fulkerson, Peny & Cudeck, 1993; Smink, Van Hoeken, & Hoek, 2012; Striegel-Moore, et al., 2003). Daee et al. (2002) reported that among dieting adolescents only 1% to 8.9% reported using potentially dangerous weight loss methods. Exaggerated dieting too decreases with age (Bushnell, Wells, Hornblow, Oakley-Browne, & Joyce, 1990; Fairburn & Beglin, 1990; Heatherton, Mahamedi, Striepe, Field, & Keel, 1997) and only a few sustain it for long, with 0.4% reaching its clinical form (i.e., anorexia nervosa, Hoek, 2006).

Albeit on a different scale, violent extremism is also hard to sustain indefinitely. For instance, the average length of membership in violent far right organizations in Europe (e.g. neo-Nazis) is about ten years (Bjorgo, 2002). Pyrooz and Decker's (2011) show that gang desistance is strongly correlated with age suggesting a natural 'aging out' process from membership in gangs.

Criminal activity prevalence peaks in the late teens and declines in the early 20's. (Gottfredson & Hirschi, 1990). Drug users are mostly young. The peak period of drug and alcohol use occurs during the ages of 18 to 25 (Substance Abuse & Mental Health, 2002). Although quitting addiction is difficult, data from National Longitudinal Alcohol Epidemiologic Survey suggest that many people succeed in liberating themselves from its embrace (Dawson, Grant, Chou, & Pickering, 1995; Grant & Dawson, 1997).

Participants in extreme sports are mainly young adults (mostly men, e.g., Mykletun & Rumba, 2014; Wymer, Self, & Findley, 2010). As with other forms of extremism, involvement in extreme sports, too, declines with age (Zuckerman, 1994). Other forms of extremism are typically short lived as well. One notable example is celibacy among priests. Sometimes priests resign from church to get married (Plante & Daniels, 2004). Celibacy and lack of social contact (and sex) have been blamed for the sex abuse crisis in the Catholic Church (Sipe, 1995; John Jay College Research Team, 2004). Indeed, reports of numerous incidents among priests show that *celibacy* is hard to sustain over time (e.g., The Boston Globe, 2002; see also Goodstein, 2008, December 28; Jenkins, 1996; Plante & Daniels, 2004; Sipe, 2004; White & Terry, 2008). In their research on over 1,300 priests, Loftus and Camargo (1993) found that 28% stated that

they had engaged in a sexual relationship with an adult woman, and a small minority reported sexual misconduct with a minor (Sipe,1990; Isely, 1997).

Deviancy. Extremists are often regarded as social deviants hence are rejected and excluded from desirable memberships and pursuits (Hartney, 2019, July 6). Recovered drug addicts, rehabilitated terrorists or registered sex offenders typically face considerable difficulties in finding a job, friends and acceptance in society (Solal & Schneider, 1996); they are often marginalized and stigmatized (Room, 2005). This may push them right back to the extremist pursuit (e.g. drug addiction) or membership (e.g. in a violent organization) that they were attempting to leave behind (Birdwell, 2015, November 26; Kruglanski, Webber & Koehler, 2019). Given the considerable costs to society that extremisms may exact stigmatization of extremists and their exclusion constitute a serious social problem in and of itself.

General Discussion

Uniform Dynamics

Though diverse in their manifestations, behavioral extremisms across the board attest to uniform psychological dynamics. These center on the emergence of a motivational imbalance involving the focusing of one's mental resources on a given prioritized need and their proportionate withdrawal from other needs. In direct consequence, the constraints that the latter normally exert on behavior are relaxed, allowing action patterns to emerge that are neglectful or downright inimical to those concerns. Because a balanced fulfillment of all basic needs is essential to contentment and well-being, extreme behaviors are difficult to sustain. They, therefore, tend to be relatively infrequent and of a relatively brief duration.

Empirical Support

The resource reallocation process at the roots of extremism is fundamental to living organisms and has been documented across levels of phylogeny from fruit flies to humans. Its manifestations appear at the neuronal stratum, as well as at the cognitive, affective and behavioral levels reflecting the imbalanced prioritization of a given concern and the attendant dependence on its satisfaction. There is by now abundant empirical evidence attesting to the workings of motivational imbalance in the various extremisms of great personal and societal significance including substance abuse, workaholism, exaggerated ("fatal") sexual and romantic attractions and the engagement in political or religious violence.

Ample research findings attest that concentration on a given (prioritized) need or goal correspond to decreased focus on alternative concerns and the expansion of options aimed at serving the focal need. Ample data also indicate that motivational imbalance is characterized by considerable cognitive preoccupation with the prioritized need and considerable emotional dependence on its satisfaction. These effects are manifest across diverse domains and contents of motivational concerns, and across different methods of investigation.

The various extremisms (e.g. political violence, addictions, extreme diets) are typically considered in terms of their deleterious consequences, and the dear price they exact from individuals and society. As often is the case, however, there is another side to the story as mechanisms that received attention for their negative effects turn out to have important functional value as well. Indeed, the psychological processes that enable people (and other organisms) to channel their resources toward a single, overriding

purpose have obvious benefits. They allow individuals to cope with outsized challenges that might come up (e.g., in times of war, economic downturn, natural disaster, and other emergencies) and that require a focalization of resources to enable a response commensurate with the challenge, and a broadening of strategic considerations beyond the usual ("true and tried") options. Obviously, individuals' capacity to develop a motivational imbalance may be abused as well, and result in severe damage to the actors and others impacted by their deeds.

Explicating Extremism

Though prior discussion of psychological phenomena occasionally referred to 'extremism' or extreme attitudes, they did not go much beyond their mere mention, nor did they explicate why some phenomena are labeled as extreme and what makes them so. The term 'extreme', or 'extremism' was mainly used to describe a phenomenon, or a quality with no mention of the underlying psychological process. For instance, extreme attitude, denotes a high intensity of like or dislike for an attitude object, but typically the authors that used this term did not dwell on the antecedents or consequences of holding such an attitude. If they mentioned 'extremism' at all, most authors did so in passing and while focusing on other things, such as dogmatism, authoritarianism, and anti-democratic inclinations.

For instance, Rokeach (1954, 1960) addressed dogmatism and mental rigidity, and noted that "those holding to extreme attitudes are likely to manifest a greater tendency toward rigidity ..or premature closure ..than are those having more moderate attitudes" (Rokeach & Eglash, 1956, p. 135). Similarly, Lipset (1959) suggested that "low

status and low education predispose individuals to favor extremist, intolerant and transvaluational forms of political and religious behavior" (ibid., p. 483) that he viewed them as totalitarian and anti-democratic. Yet Lipset wasn't concerned specifically about what makes these political manifestations 'extreme' nor about addressing extremism as a general phenomenon.

Eysenck (1956; Eysenck & Coulter, 1972) focused on *radicalism* as a personality attribute; specifically, he viewed radicalism-conservativism as a personality dimension, orthogonal to the tough vs. tender-mindedness dimension; in these terms he analyzed the personalities of fascists and communists as specific examples of radicalism. Christie addressed authoritarianism, authoritarian personality, and related constructs such as mental rigidity. He tested the relationships between these variables and prejudice, ethnocentrism and punitiveness (Christie, 1991, 1993; Christie & Jahoda, 1954; Schultz, Stone, & Christie, 1997) without devoting attention to extremism as such. Greenberg and Jonas (2003) spoke of ideological rigidity motivated by the need to reduce uncertainty. In this vein, Kruglanski (1989; 2004; Kruglanski & Webster, 1996; Kruglanski, Pierro, Mannetti & DeGrada, 2006) discussed closed mindedness produced by a heightened need for cognitive closure specifically, rather than discussing extremism as a more general motivational phenomenon not connected to any need in particular.

Whereas the motivational intensity of the need for certainty and closure (Greenberg & Jonas, 2003; Kruglanski, 2004), alludes to the present emphasis on need dominance, none of the prior discussions that mentioned 'extremism', considered the (crucial) concommitant supression of alternative needs, and the consequent relaxation of

their constraints allowing infrequent (hence ‘extreme’) activities to emerge. In their emphasis on the specific case of cognitive rigidity they did not entertain the possibility of a general proces that applies across the entire motivational spectrum. The present model is thus unique in elaborating a psychological mechanism capable of producing all kinds of extremism, based on the dominance of any need whatsoever (e.g. from hunger, to substance dependence to the quest for dignity, and respect). To be sure, the present model is capable also of explaining closed mindedness and dogmatism as its specific case, wherein the need for cognitive closure and certainty crowds out the need for truth, yet it is of a much wider applicability, reach and integrative scope.

Further Research Directions

Beyond its consistency with prior results, the present, motivational imbalance, model has implications for further research about the underlying dynamics of extremism. First, note that for the most part, empirical support for the model (however, ample and diverse) addressed the effects of the focal need’s *magnitude*. Future research could profitably explore our model’s additional implications concerning the impact of imbalance’s *duration* (see Equation 2 above), and of the *magnitude differential* between the focal and the alternative needs. Likewise, further research could investigate several thus far unexamined aspects of motivational imbalance such as: (1) conditions of its *initiation,* (2) conditions for its *maintenance* and (3) individuals’ orientation toward motivational *constraints* as moderators of the link between imbalance and extremism. We examine these in turn.

Initiating imbalance. Motivational imbalance could happen because of conditions inherent in the *situation* or, of factors immanent to the *person*. To begin with

the situation, a sudden occurrence could occasion a momentary spike in a given motivation: On an avoidance side, a sudden emergency (a flood, a fire, a road accident) might catapult sheer survival to the top of one's agenda, overshadowing all else as it were. A prolonged deprivation of a need (e.g., related to nutrition, hydration or sleep) could similarly effect a motivational imbalance and tilt it toward the deprived motivation. On an approach side, an unexpected opportunity for a great achievement in the professional or interpersonal realm, could likewise produce a mobilization of one's psychic resources toward the 'willing of that one thing' (to twist Kierkegaard's, 1847/1956, felicitous turn of phrase) and bracketing other, less salient, concerns.

Personal predispositions too, may affect one's tendency to fully commit to a given pursuit to the detriment of others. Persons high on the need for cognitive closure (Kruglanski, 2004; Kruglanski & Webster, 1996) may "seize and freeze" upon an accessible goal and disproportionately channel their energies toward its attainment. Highly impulsive persons may be particularly prone to "leap" on a momentarily salient threat or temptation while neglecting other considerations (Barratt & Patton, 1983). Other personal characteristics may facilitate one's responsiveness to sudden shifts in circumstances or impede it. The former may be reflected in individuals high on the *locomotion* tendency (e.g. Kruglanski et al., 2000) eager to initiate a goal-directed movement, whereas the latter may be more characteristic of high '*assessors*' (ibid) who tend to engage in extensive comparisons and calculations thus devoting time and resources to "looking" before "leaping" (Kruglanski, Pierro, Mannetti et al., 2013).

Individuals who are highly *prevention focused* (Higgins, 2012) might be loath to neglect any of their needs. As a consequence, they might be less likely to exhibit

motivational imbalance than their *low* prevention focused counterparts. In contrast, individuals who are highly promotion focused (ibid.) might be less concerned about the neglect of some needs, and particularly excited about the satisfaction of other, prioritized, concerns. The latter persons might be more likely to develop a motivational-imbalance and exhibit behaviors classified as extreme.

Maintaining imbalance. Often, instances of motivational imbalance are ephemeral; a given need's priority over others is short-lived, and the latter are attended to relatively soon thereafter. Such sequencing of activities aimed at the attainment of varied basic goals is typical of how people, generally manage their daily affairs, allotting designated chunks of time to nutrition/hydration, rest, work, leisure, etc. Typically, such 'imbalancing' and 'rebalancing' cycles occur over relatively brief time periods, so that extended motivational imbalances are rare.

One condition that prolongs imbalance appears to be *biological*; it concerns the neural substrate of motivational phenomena, specifically involving the dopamine system. As noted earlier, overstimulation of that system with drugs produce a level of euphoria that cannot be matched through satisfaction of other basic needs, so that the imbalance (expressed in craving for the drugs[10]) is perpetuated (Di Chiara & Imperto, 1988; Di Chiara et al., 1998; Fiorino & Phillips, 1999; Kalivas & Volkow, 2005).

[10] Researchers have argued that drug addiction stems from unmet needs. Hari (2015) argues that addiction is a result of unmet social needs and disconnection, which is in line with the results of the study by Alexander et al. (1981) showing that rats in colony were less likely to become drug-dependent than rats alone. Also Mate (2011) argues that drugs relieve the feelings of dissatisfaction with oneself and provide one with the feeling of connection and attachment (also neurochemically mimicking it).

Imbalance can also be prolonged via cognitive and social means that elevate a given motivation to the top and keep it at a heightened level through persuasive communications and group dynamics. A useful hint in this direction comes from research on violent extremism, as noted earlier (cf. Kruglanski, Bélanger & Gunaratna, 2019; Kruglanski, Webber & Koehler, 2019) where relatively enduring commitment to terrorism and aggression, often entailing the sacrifice of one's basic concerns, is carried via (1) extensive exposure to a *narrative* that elevates the psychological need for personal significance and advocating a method (violence) promised to restore one's significance; (2) via creation of a *shared reality* within one's ingroup or *network* that validates the narrative and rewards individuals for implementing its advocacy (Higgins, 2019). In this vein, a series of recent studies (Jasko et al., 2019) with members of more (vs. less) radical networks found that the more radical the network's narrative, the stronger the relation between members' quest for significance and the support for violence (i.e. for an extreme means to significance). The role of narrative and network has also lately been emphasized in maintaining extreme religious commitments (Szumowska, Czernatowicz-Kukuczka, Kossowska, Król, & Kruglanski, in press). It is possible that the sustenance of other types of extremism (e.g., substance abuse, extreme diets, extreme sports) also is abetted by such cognitive (i.e., narrative) and social (network) means. Future research could well address this possibility.

Constraint sensitivity. According to the present model, extremism entails the relaxation of constraints exercised by alternative needs on behavioral options serving the prioritized need. Individuals may differ on the extent to which they are inclined to welcome or resist such a relaxation, and situational circumstances may further strengthen

or weaken that inclination. In turn, the readiness to accept the relaxation of constraints should determine individuals' likelihood to adopt extreme behaviors of various kinds. For instance, individuals high on the need for autonomy (e.g., Deci & Ryan, 1985) might be particularly inclined to throw themselves in abandon into whatever currently strikes their fancy and readily ignore constraints imposed by alternative considerations. In contrast, highly dependent individuals might welcome structural restraints and be loath to relinquish them thus remaining refractory to motivational imbalance. In consequence, highly autonomous individuals might be more likely to exhibit extremism than highly dependent and conformist individuals. Different cultures too are known to differ in the extent to which they impose 'tight' versus 'loose' norms on their members (Gelfand, 2018). If looser versus tighter cultures permit lesser observation of constraints, it might be easier for members of the former versus the latter to develop a motivational imbalance; in consequence, one might find a greater preponderance of extreme behaviors in looser than in tighter cultures. These possibilities too could be profitably explored in subsequent research.

Mediating Mechanisms. The mediating mechanisms involved in extremism are insufficiently understood at this time. It is fairly clear that the mechanisms of selective attention and inhibition play a part in this process, that activation of a given need (through processes of deprivation or incentivization) *suppresses* the others, and that the extent of the suppression is function of the relative magnitudes of the focal and the alternative concerns (Kopetz et al., 2011; Shah et al., 2002). How the different needs mutually constrain behavior is less well elucidated. The process of avoidance learning might be involved in prohibiting behaviors that while serving one need undermine

another; inhibition of the latter need (under motivational imbalance) may thus remove the conditions for avoidance. Presumably, this could occur irrespectively of whether the negative link between the behavior and the need is represented in consciousness (Kruglanski & Szumowska, in press). An important task for future extremism research is thus to systematically examine these possibilities including the exploration of neural and hormonal processes involved in the motivational exchanges that our theory is postulating.

Interpersonal implications: power and idiosyncrasy. The dynamics of motivational imbalance may play out differently in different interpersonal circumstances. More versus less (socially) powerful individuals (Galinsky, Magee, Gruenfeld, Whitson, & Liljenquist, 2008; Guinote, 2007) may be accorded greater leeway for deviating from social norms. Furthermore, powerful individuals may be less concerned about others and less likely to feel accountable for neglecting their needs. They may feel lesser pressure to attend to relatedness concerns (Ryan & Deci, 2000) and feel less obliged to meet other people's expectations. Indeed, considerable body of research suggests that individuals with power, status, money, or other means of social control feel less dependent on others, and are more likely to downgrade other people and disregard their needs (cf. Milyavsky et al., 2019). It follows, therefore, that high powered individuals might be more likely to deviate from norms (see also Keltner, 2016; Keltner, Gruenfeld, & Anderson, 2003). To the extent that such lack of concern with restrictions generalizes beyond social norms and becomes ingrained into one's character, powerful individuals might allow themselves to exhibit motivational imbalance and follow their whims unto extremism.

A somewhat similar dynamic might characterize individuals who by dint of their prior service have accumulated *idiosyncrasy credits* (Hollander, 1958) allowing them to

deviate somewhat from norms and rules others are expected to follow. Just like social power then, idiosyncrasy credits may infuse a feeling of freedom to pursue one's wishes come what may and to feel relatively unbounded by usual constraints. These varied possibilities, implied by our motivational imbalance model, may be profitably probed in future research.

The Unbalanced Society. The concept of motivational imbalance has intriguing implications for the psychology of collectives. It implies that heterogeneous groups composed of equipotent members with diverse concerns may evolve moderate cultures whose norms prevent any one consideration (e.g., a subgroup's religion or economic interest) from overshadowing the others. Such balance might be upset, however, if any subgroup gained dominance in the overall collective. In such circumstances, that subgroup's priorities and values may gain privilege at the expense of the other parties', possibly legitimizing extreme means (e.g., violence, oppression) seen as instrumental to advancing those priorities. The latter, 'anything goes', culture might generalize to an inter-group context facilitating tension and hostility among states. These notions are consistent with *Democratic Peace Theory* (e.g. Ray, 1998), the idea that nations with democratic norms (presumably representing normative balance) are less likely to enter into armed conflicts with other nations.

Normative balance in society may be upset by external circumstances, e.g. a sudden threat to the society's welfare, including a major terrorist attack, or a sudden influx of immigrants into one's homeland. In those circumstances, concern of safety, security and stability may override other considerations (e.g. of individual privacy, and

human rights (https://www.hrw.org/editorials/2003/us091803.htm)) allowing activities that under normal, balanced, circumstances would be regarded as anomalous.

Finally, *schisms* in groups and organizations are often affected by factions uncompromisingly committed to a given ideal and promoting, therefore, extreme means of its pursuit to the detriment of other considerations (e.g., Bloom, 2004; Sani, 2005). Viewing such collective phenomena through lens of the Motivational-Imbalance model may thus afford new insights into issues of major societal significance.

Coda: Extremism Emerging

Whatever else one might think about extreme behaviors, they typically evoke an intense response from observers. Whether they strike one as bizarre or fanciful, admirable or despicable, one thing they *are not* is dull and boring. Quite the opposite, they seem edgy and stirring, unlikely to leave any onlooker cold. On second glance, however, extreme behaviors turn out to be hardly special or unique. Rather they appear to define the end of a continuum ranging from a (more or less) balanced pursuit of one's basic needs to a profound imbalance in which one need is so dominant and prioritized that it largely eclipses others. The analysis and evidence offered in the preceding pages thus attests to the 'banality of extremism' as it were: Extremism is an emergent phenomenon assembled from ordinary 'building blocks' of mundane behavioral mechanisms. These are evident across levels of phylogeny and of behavioral analysis, and in fact are indispensable to effective everyday functioning of humans and other species: Extremism entails the oft-needed imbalanced redistribution of mental resources: their disproportionate investment in a dominant motivational concern and their commensurate withdrawal from others. The result is a relaxation of constraints on behavior and the

attendant expansion of behavioral options for addressing the prioritized end. Generally, the imbalanced state is temporary and followed by a quick re-balancing operation. It is only where the motivational imbalance endures, that ‘extremism’, in its everyday sense , grabs people’s attention. A substantial body of evidence about diverse ‘extremisms,’ supports our model and the paradigm it outlines offers ample directions for further research on the determinants and consequences of the striking and consequential behavioral phenomena describable as ‘extreme’.

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Figure Captions

1. Representation of moderation (a) and extremism (b)
2. Importance of eating goal expands the choice set of foods through suppression of the dieting goal (Kopetz et al., 2011, Study 5)
3. Obsessive passion expands the choice set of means via alternative goal suppression (Belanger et al., 2019, Study 2)

Note. For clarity, error terms are not shown. Unstandardized betas are shown. *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

Figure 1.

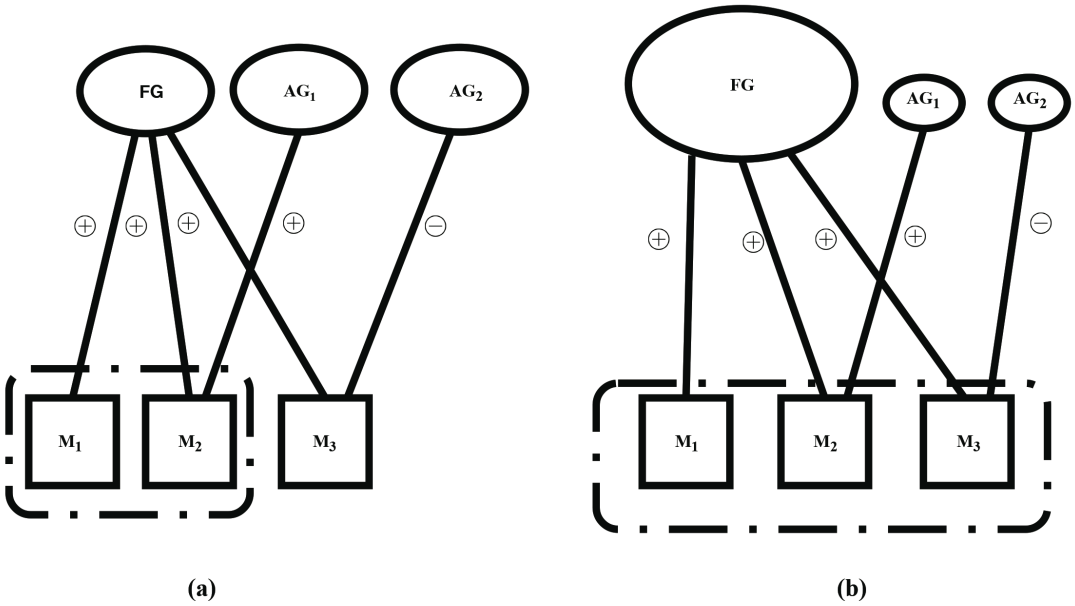


Figure 2.

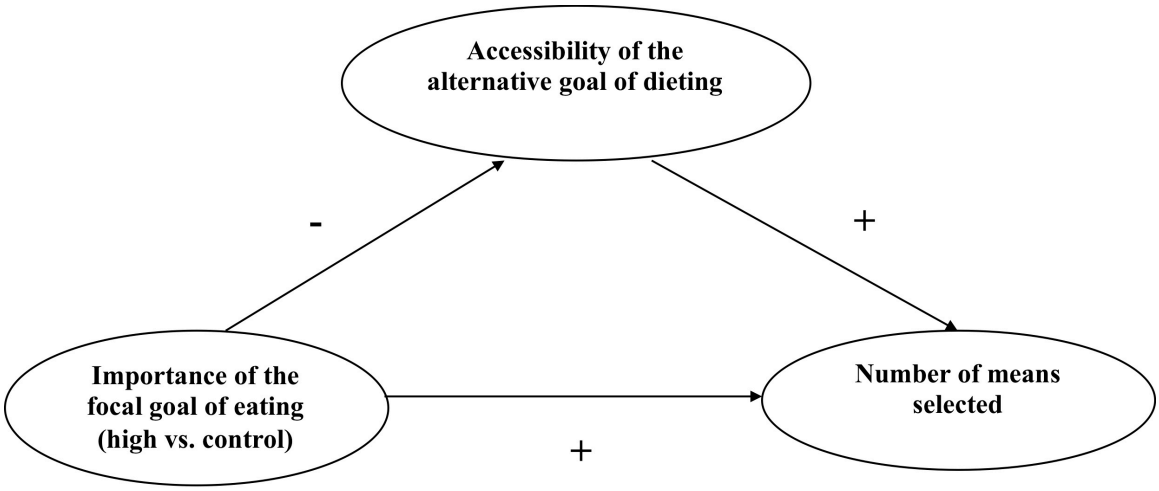
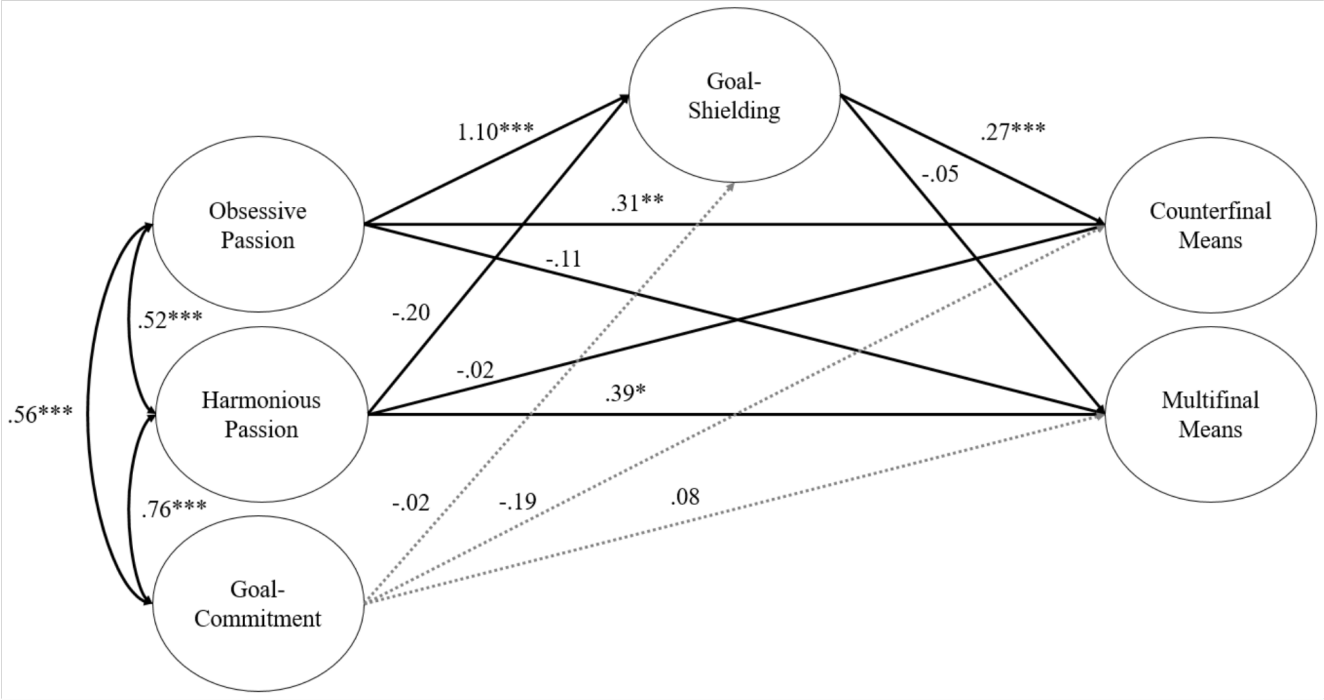

Accessibility of the alternative goal of dieting
-
+
Importance of the focal goal of eating (high vs. control)
Number of means selected
+

Figure 3.


Goal-Shielding
1.10***
.27***
-.05
Obsessive Passion
.31**
Counterfinal Means
-.11
.52***
-.20
-.02
Harmonious Passion
.39*
Multifinal Means
.56***
.76***
-.02
-.19
.08
Goal-Commitment