

1

2 Understanding the Coping Process from a Self-Determination Theory Perspective

3

4

5 Manuscript submitted: 30/04/08

6 Manuscript resubmitted: 16/06/08

7 Second resubmission: 24/07/08

Abstract

1
2 Purpose: To explore conceptual links between the Cognitive-Motivational-Relational
3 Theory of coping (Lazarus, 1991) and Self-Determination Theory of motivation (Deci &
4 Ryan, 1985)

5 Method: We present a very brief overview of the two theories. We also discuss how
6 components from the two theories can be examined together to facilitate research in the
7 health/exercise domain. To this effect, we offer a preliminary integrated model of stress,
8 coping and motivation, based on the two aforementioned theories, in an attempt to illustrate
9 and instigate research on how motivational factors are implicated in the coping process.

10 Conclusion: We believe that the proposed model can serve as a platform for
11 generating new research ideas which, besides their theoretical relevance, may have important
12 applied implications.

13
14

1 Understanding the Coping Process from a Self-Determination Theory Perspective

2
3 *“How the person copes depends not only on the coping possibilities and how they are*
4 *appraised but also on what a person wants to accomplish in the encounter....the study of*
5 *coping should never be divorced from motivation”* (Lazarus, 1991, p. 115).
6

7 Over the last 40 years a prodigious number of journal articles have been published which
8 explore the psychological processes that underpin coping processes and resultant health
9 outcomes. The impetus for this research can be attributed to the publication of a seminal
10 book, entitled “Psychological Stress and the Coping Process”, by Richard Lazarus in 1966.
11 Embedded within the “cognitive revolution” that swept psychology at the time, Lazarus’ work
12 highlighted the role of cognitive appraisals in determining one’s reaction to a stressful
13 encounter. In subsequent years (e.g., Lazarus, 1991), Lazarus proposed the Cognitive-
14 Motivational-Relational Theory (CMRT) of coping, which highlights the role of distinct
15 positive and negative emotions in the stress appraisal process (see also Lazarus, 1999).
16 Essentially, the CMRT links emotion with motivation by arguing that emotions are reactions
17 to the fate of active goal pursuit. Lazarus (1991) viewed that when one is committed to the
18 pursuit of important goals, one will experience positive emotions from appraisals of smooth
19 goal progress or goal attainment, and negative emotions from appraisals of goal thwarting or
20 delays. As the opening quote exemplifies, Lazarus repeatedly emphasised in his writings that
21 the concept of motivation is essential for a proper understanding of cognitive appraisals and
22 coping responses in troubled person-environment relationships.

23 Although we agree with the central role of motivation in the CMRT, we believe that
24 discussing motivation only in terms of progress or obstacles in the goal striving process is a
25 quite restrictive perspective. A more comprehensive understanding of the motivational

1 processes involved in the coping process necessitates the examination of personal factors
2 concerned with issues of volition, choice and self-determination in goal striving, as well as the
3 investigation of the role of socio-contextual features in supporting or undermining such goal
4 undertakings. To this end, Self-Determination Theory (SDT; Deci & Ryan, 1985; 2002) can
5 be useful in demonstrating the role of volition and self-determination in the coping process.
6 SDT is a macro-theory of human motivation that has received considerable attention in
7 various life domains. It argues that the type of motivation underpinning behaviour can have a
8 significant impact on physical, psychological and emotional functioning. The purpose of this
9 paper is to present a very brief overview of the CMRT and SDT and discuss how components
10 from the two theories can be integrated. To this effect, we present a preliminary integrative
11 model. Although various other theories and models of coping and motivation exist, a
12 discussion of those is beyond the scope of this article. We believe that the CMRT and SDT
13 can illustrate well how motivational factors are implicated in the coping process.

14

15 *Cognitive-Motivational-Relational Theory of Coping*

16 Lazarus (1991) and Folkman (1984) viewed stress not as a stimulus or a response, but
17 as a person-environment relationship that is perceived as taxing or exceeding a person's
18 resources. When faced with a stressful situation, a person will evaluate its potential personal
19 relevance and significance in terms of its impact on valued personal goals. This process is
20 known as primary appraisal. Lazarus and Folkman (1984) distinguished among different types
21 of primary appraisal: harm/loss, threat, challenge and benign. Harm/loss appraisals refer to an
22 injury or damage that has already been done, such as being diagnosed with a terminal illness.
23 Threat appraisals refer to a potential for harm or loss, fairly typical before health screening
24 tests for example. Challenge appraisals refer to an opportunity for personal growth or
25 mastery, for example being involved in a weight loss program exercise programme. When a

1 source of stress (stressor) is perceived as benign, no further appraisal or action is undertaken.
2 Harm and threat appraisals are associated with negative emotional reactions, whereas
3 challenge appraisals are linked to more pleasant emotions. Many factors have been identified
4 as determinants of each of these appraisals, including generalised beliefs about control, goal
5 commitment, and the novelty of the stressor (Folkman, 1984). Folkman emphasised that the
6 three appraisals are not independent and can occur simultaneously to a different extent during
7 a stressful event. In addition to primary appraisals, Lazarus and Folkman (1984) also
8 identified a secondary appraisal process. When a stressor is perceived as relevant and
9 significant, an individual will evaluate the controllability of the stressor and his/her resources
10 and options. Therefore, secondary appraisals involve situational appraisals of control.

11 Different stress appraisals can lead to different coping responses. Lazarus (1993)
12 defined coping as the cognitive and behavioural efforts employed by an individual to deal
13 with the demands that are created by the stressful person-environment transaction. A large
14 number of coping strategies have been proposed and measured in the literature. Researchers
15 have attempted to reduce these strategies into a smaller meaningful number of dimensions
16 using a diverse array of classification systems. From Lazarus and Folkman's (1984)
17 perspective, there are two main types of coping strategies: those aimed at resolving the
18 stressful encounter (problem-focused) and those utilised to regulate the unpleasant emotions
19 that arise during the encounter (emotion-focused). Examples of problem-focused coping
20 strategies are planning, increasing effort and management of priorities. Examples of emotion-
21 focused coping strategies are distancing, isolation and wishful thinking. Problem- and
22 emotion-focused strategies can be employed to a different extent in the same troubled person-
23 environment relationship.

24 Lazarus and Folkman (1984) emphasised that some coping strategies are not
25 inherently better than others; in fact, effective coping requires a fit between situational

1 appraisals and choice of coping responses (this notion is also known as the goodness of fit
2 model). Specifically, perceptions of controllability of the situation should lead to the
3 utilisation of problem-focused strategies to a greater degree than emotion-focused strategies,
4 which are more suitable for situations which are less controllable. However, Lazarus (1991)
5 emphasised that coping is a dynamic process with substantial intraindividual and
6 interindividual variability; individuals might have to utilise different coping strategies at
7 different stages of the same stressful encounter or from one stressful encounter to another
8 (e.g., see Folkman & Lazarus, 1985). Also, coping strategies that are effective for one
9 individual might not be effective for another person in the same encounter. Nevertheless,
10 Lazarus (1993) acknowledged that some coping strategies are more stable than others,
11 although he did not subscribe to the trait approach on coping (e.g., Endler & Parker, 1990;
12 Krohne, 1996). The latter approach views that individuals have a preferred coping repertoire
13 (i.e., coping styles) which they employ across different situations and which are determined to
14 a large extent by personality variables (e.g., optimism, extraversion).

15 Coping efforts can result in a variety of health-related, affective and behavioural
16 outcomes. A review of the extant literature in the health domain is beyond the scope of this
17 paper. However, for illustrative purposes we offer some examples. Successful coping has
18 been related to better quality of life, mental health and illness remission (Aldwin, 2000).
19 Coping efforts might also result in positive adjustment to stressors such as adaptation to
20 illness (e.g., Holland & Holahan, 2003), caregiving responsibilities (e.g., Kneebone & Martin,
21 2003), and body image concerns (e.g., Sabiston, Sedgwick, Crocker, Kowalski, Mack, 2007).
22 Lazarus (1993) emphasised that there are no universally appropriate or inappropriate coping
23 strategies, although some coping strategies are more often better or worse than others. For
24 instance, a “wait and see approach” (e.g., in the form of distancing, rationalisation) following
25 a first abnormal cervical smear might be more effective for psychological health (e.g., see

1 Orbell, Hagger, Brown, & Tidy, 2004) as opposed to mobilising effort and designing plans of
2 action. However, failing to mobilise when facing with a confirmed and imminent threat can
3 have disastrous consequences for physical and psychological health. As an outcome of
4 successful coping, individuals might reappraise a stressful encounter as less threatening and
5 alleviate the intensity of their negative emotions. Further, successful goal attainment due to
6 appropriate coping actions can result in a variety of positive emotions. Thus, in the CMRT of
7 coping, emotions are considered as both antecedents (alongside stress appraisals) and
8 outcomes of coping efforts.

9

10 *Self-Determination Theory*

11 SDT (Deci & Ryan, 1985, 2002) is a macro-theory of motivation (comprising of four
12 mini-theories) that examines the degree to which human behaviours are autonomous or self-
13 determined, as well as the personal and contextual factors that determine personal self-
14 determination. SDT uses an organismic perspective by arguing that individuals are active
15 organisms that seek challenges in their environment in an attempt to achieve personal growth
16 and development. SDT also employs a dialectic perspective by proposing that social
17 contextual factors can facilitate or undermine individuals' attempts for personal development.
18 Thus, similar to the CMRT of coping, SDT proposes a dynamic person-environment
19 relationship that impacts upon subsequent behaviour, emotion and cognition.

20 The concept of psychological needs provides the basis for examining this dialectic
21 perspective (Deci & Ryan, 2002). SDT proposes three fundamental and universal human
22 needs, the satisfaction of which is essential for individuals' efforts for personal growth and
23 development. These are the needs for autonomy, competence and relatedness. All three
24 psychological needs are essential, but the degree to which they are satisfied varies from one
25 context to another. Autonomy reflects a desire to engage in activities of one's choosing and to

1 be the origin of one's own behaviour. Competence refers to individuals' need to interact
2 effectively with their environment and to experience a sense of effectance in producing
3 desired outcomes and preventing undesired events. Finally, relatedness is the need to feel
4 connected to and accepted by others in a social milieu. Using participation in an organised
5 exercise programme as an example (e.g., see Edmunds, Ntoumanis, Duda, 2008), individuals
6 usually seek to engage in exercise activities that foster most or all their psychological needs,
7 in other words, activities that reflect personal choice, provide individuals with opportunities
8 for task accomplishment, and facilitate meaningful interpersonal interactions with other
9 exercisers.

10 The social environment within which an individual operates is proposed to influence
11 the extent to which his/her psychological needs are satisfied. Psychological need satisfaction
12 can be promoted or thwarted by different facets of the social environment. Three main
13 adaptive facets of the social environment have been identified in the SDT literature. The first
14 is autonomy support, which refers to the provision of choice and meaningful rationale from
15 those in a position of authority (e.g., fitness instructors), acknowledgment of the perspective
16 of those they interact with, and minimisation of pressure (Deci, Eghrari, Patrick & Leone,
17 1994). A second adaptive facet of the environment is called structure and refers to whether
18 those in a position of authority provide clear expectations, optimal challenges and
19 constructive feedback (Reeve, 2002). A third adaptive facet of the social environment
20 identified in the SDT literature is called interpersonal involvement, and refers to the
21 willingness of those in a position of authority to dedicate psychological resources, such as
22 time, energy, and affection, to those they interact with (Deci & Ryan, 1991). However, the
23 social environment can also be maladaptive. Specifically, SDT argues that social contexts can
24 be controlling by being coercive and by using monitoring, surveillance and task-contingent
25 rewards.

1 According to SDT, when the social environment facilitates psychological need
2 satisfaction, behaviour is usually self-determined and psychological well-being is experienced
3 (e.g., see Vallerand, 1997). In contrast, when the social environment undermines the three
4 psychological needs, behaviour often has low or no self-determination and ill-being is
5 reported. Deci and Ryan (1985; 2002) view motivation from a multi-dimensional perspective
6 and have identified three general facets of motivation: intrinsic motivation, extrinsic
7 motivation (which is itself multidimensional in nature), and amotivation. These types of
8 motivation vary along a self-determination continuum. Intrinsic motivation, the most self-
9 determined type of motivation, involves partaking in an activity for enjoyment, learning, or
10 task accomplishment reasons. Extrinsic motivation reflects behaviours which are undertaken
11 not because they are interesting but because they result in important outcomes. Extrinsic
12 motivation is comprised of four different regulatory types that differ in their degree of self-
13 determination. *Integrated regulation* is the most self-determined type of extrinsic motivation
14 and reflects behaviours that are undertaken because they reflect values and beliefs that have
15 been fully internalised and integrated within one's values system and sense of self (e.g.,
16 "being an exerciser is a big part of who I am"). *Identified regulation* refers to task
17 engagement because of the valued benefits of a particular behaviour (e.g., "I exercise to
18 improve my health"). *Introjected regulation* refers to behaviours performed to avoid negative
19 emotions (e.g., guilt) or to support conditional self-worth (e.g., "I exercise to look good").
20 The fourth type of extrinsic motivation is *external regulation*, which is the least self-
21 determined type of extrinsic motivation, and reflects behaviours performed due to external
22 pressure (e.g., "I exercise because I've been told so by my doctor"), to avoid punishment or to
23 obtain rewards. Lastly, amotivation is defined as the absence of intention to act due to lack of
24 contingency, perceived value, or competence. Deci and Ryan (1985) argued that individuals'
25 regulation can be found at any place in the continuum and can vary in different situations or

1 contexts. However, these authors also identified three personal dispositions (labelled
2 “causality orientations”) which predispose individuals to engage in *autonomous*/self-
3 determined, *controlled* or *impersonal*/amotivated ways across situations and contexts.

4 In the SDT literature, intrinsic motivation, integrated and identified regulation are
5 often referred to as high self-determined types of motivation. In contrast, introjected and
6 external regulations are considered as controlling/low self-determined types. Lastly,
7 amotivation reflects complete lack of self-determination. According to SDT, psychological
8 need satisfaction and resultant self-determined motivational regulations are often associated
9 with adaptive health-related, affective and behavioural outcomes (Deci & Ryan, 1985;
10 Vallerand, 1997). In contrast, negative consequences, for example physical and psychological
11 pathology and ill-being (Deci & Ryan, 2000), have been linked with psychological need
12 thwarting and low/no self-determined motivation. An overview of the basic propositions of
13 SDT is provided in Figure 1. A review of the applications of SDT in the health and exercise
14 domains is beyond the purposes of this study. Excellent overviews and discussions can be
15 found in Hagger and Chatzisarantis (2007) and Sheldon, Williams, and Joiner (2003). For
16 illustrative purposes, we mention that psychological need satisfaction and/or self-determined
17 motivation types have been found to predict directly or indirectly outcomes such as
18 medication adherence (Williams, Rodin, Ryan, Grolnick, & Deci, 1998), exercise intentions
19 (Chatzisarantis, Hagger, Biddle, Smith, & Wang, 2003), exercise adherence (Edmunds et al.,
20 2008), abstinence from smoking (Williams, Gagné, Ryan, & Deci, 2002), weight loss
21 (Williams, Grow, Freedman, Ryan, & Deci, 1996), healthy eating behaviours (Pelletier, Dion,
22 Slovenic-D'Angelo, & Reid, 2004), and dietary self-care in diabetics (Senécal, Nouwen &
23 White, 2000).

24

25 *Coping and motivation research: A case for integration*

1 It is surprising that no research to date in the health domain has considered the joint influence
2 of motivational and coping variables on indicators of psychological and physical health.
3 Research in other domains, such as education (Ryan & Connell, 1989), relationships (e.g.,
4 Knee, Patrick, Vietor, Nanayakkara, & Neighbors, 2002), and sport (Amiot, Gaudreau, &
5 Blanchard, 2004), has examined relationships between different aspects of coping and
6 motivation but no systematic attempts for integration have been made. In an effort to instigate
7 research in the health as well as in other life domains, we propose a model (see Figure 2) that
8 attempts to integrate aspects of the CMRT of coping and SDT of motivation. This model
9 builds upon and expands existing literature on the interrelationships among the SDT
10 components (see Figure 1), and on another volume of literature on the interrelationships
11 among the CMRT components, and shows how variables from the two theories are
12 associated.

13 Our model presents a sequence of processes involving distinct variables. However, it
14 should be emphasised that in Lazarus' (1999) view, motivation, appraisal, coping, stress and
15 emotion are conjoined in nature and should be separated only for the purposes of discussion.
16 Further, we believe that most of the variables in the model are related in a reciprocal manner.
17 Our model is not an all encompassing model and does not attempt to depict every possible
18 relationship (direct, indirect and recursive) among its constituent variables. In our description
19 below, we focus only on what we perceive as salient explanatory paths of interconnected
20 processes. We avoid repeating the description of how the SDT variables are interrelated (to
21 this end, see Figure 1).

22 According to the model, a diverse range of demands and constraints, as well as the
23 degree of availability of resources (e.g., prior experience), lead to stress appraisals as to
24 whether important goals are challenged, harmed or threatened, or whether the consequences
25 are benign. Such primary appraisals and associated secondary appraisals of situational control

1 are also influenced by the degree to which the immediate social environment is supportive or
2 undermines one's three fundamental psychological needs. We expect that autonomy support,
3 structure and involvement can, both directly and indirectly via psychological need
4 satisfaction, equip individuals to appraise stressful incidents in a more positive light, for
5 example, as challenges that have to be overcome as opposed to harmful/threatening events.
6 This is because such social environments acknowledge individuals' true feelings, offer
7 feedback and guidance, and are not hostile, judgemental or prescriptive about how individuals
8 should react (Skinner & Edge, 2002). Further, they encourage individuals to react in
9 accordance with their true priorities, helping them to differentiate between goals and
10 temptations, high and low priority goals. Therefore, such environments enable individuals to
11 appraise the situation as more controllable and invest full regulatory resources to the stressful
12 episode. An example here would be of a physician or health advisor creating an optimal
13 psychological environment to help someone to deal with setbacks in terms of his/her attempts
14 to reduce or quit smoking. On the other hand, controlling environments thwart individuals'
15 psychological needs and result in more maladaptive appraisals. This is because such
16 environments are coercive, highly prescriptive and critical, and offer conditional regard.
17 These environments often exacerbate how demands and constraints are appraised, foster fears
18 of failure and personal inadequacy, and restrict individuals from mobilising full regulatory
19 resources. For example, with regard to the latter point, Muraven, Gagne', and Rosman (2008)
20 have shown that feeling compelled to exert self-control requires more self-control strength
21 and leads to greater energy depletion than exerting self-control for more autonomous reasons.

22 Stress appraisals can also be influenced directly by the satisfaction of the three
23 psychological needs. Skinner and Edge (2002) suggest that the three basic psychological
24 needs are central in shaping how we appraise and cope with stress. These authors view
25 appraisals of stressful situations as challenges or threats to the three psychological needs.

1 However, in our model we adopt Lazarus' view of appraisals as evaluations of goal striving
2 attempts and propose that psychological need satisfaction can play an important role as
3 antecedents of such appraisals. When individuals feel autonomous, competent and related in a
4 particular stressful encounter, they are more likely to appraise demands or constraints on
5 goals as challenges that have to be overcome, as opposed to threats or losses. An example
6 here would be of an overweight individual on an exercise on prescription programme. If the
7 goal of this individual is to lose weight, then difficulties associated with this goal (e.g., slow
8 progress, setbacks due to injury/illness) will be appraised differently depending on the degree
9 to which the individual feels his/her psychological needs have been satisfied in the
10 programme.

11 Psychological need satisfaction is also related to secondary appraisals. Autonomy and
12 competence need satisfaction promote secondary appraisals of situational control because
13 individuals feel a sense of ownership and effectance in terms of their goal striving. Further,
14 feelings of relatedness remind individuals that there is a social network upon which they can
15 rely for emotional support and instrumental advice. In contrast, when the three psychological
16 needs are thwarted, individuals are likely to feel lack of control, helplessness, and alienation.
17 Even relatively minor stressors could be intensified and create pressure and appraisals of fear,
18 insecurity or damage.

19 We also propose that stress appraisals will be shaped by the type of motivation that
20 individuals have in a stressful encounter. This is a possibility also suggested by Amiot et al.
21 (2004) and Skinner and Edge (2002). We believe that motivation plays a role not only in
22 terms of contextual regulatory mechanisms as we have explained earlier (e.g., in terms of
23 whether one is high self-determined or low self-determined in a particular context), but also in
24 terms of the motives that underlie specific goal striving (e.g., whether one is high or low self-
25 determined with regard to the pursuit of a particular goal in a given context). With regard to

1 the latter, Smith, Duda and Ntoumanis (2007), based on Sheldon and Elliot's (1999) self-
2 concordance model, showed that individuals can have different motives for different goals
3 they pursue in the sport context. We believe that self-determined motivation, contextual or
4 goal-specific, will result in more positive stress appraisals than low or non- self-determined
5 motivation. For example, amotivation with regard to a particular diet programme or
6 engagement in it out of feelings of pressure, shame or guilt, can lead one to experience
7 intrapsychic pressure, resulting in appraisals of heightened threat and low situational control
8 when facing obstacles and setbacks. In contrast, engaging in the diet programme because one
9 values its benefits or in an effort to integrate it with one's other higher values and goals (e.g.,
10 being a healthy person), is more likely to lead to adaptive stress appraisals and perceptions of
11 situational control.

12 Our proposed model also emphasises the influence of personality/dispositional factors
13 in shaping stress appraisals, motivation and the choice of coping strategies. As explained
14 earlier on in this article, generalised beliefs about control can influence stress appraisals
15 (Folkman, 1984). Further, autonomous, controlled and impersonal causality orientations can
16 influence the extent to which one will be high, low or non- self-determined in a particular
17 domain or within a particular situation (Deci & Ryan, 2002; Vallerand, 1997). Lastly, coping
18 styles might influence the choice of coping responses in a particular stressful encounter. For
19 example, some individuals are more likely to have an approach coping style and use more
20 direct coping strategies across a wide variety of situations. Although the CMRT of coping
21 downplays the influence of dispositions on coping choices and views coping as being
22 situation-specific, Lazarus (1993, 1999) in his later writings suggested that coping traits or
23 styles may exist, as some coping strategies are more consistently observed across stressful
24 encounters than others. In fact, Lazarus (1993) called for more research to "reveal the degree
25 to which diverse coping strategies are influenced by the social context, personality variables

1 or both” (p. 239). As previously stated in this manuscript, coping styles are advocated by
2 other researchers in the area of coping.

3 Coping responses in a stressful encounter are influenced not only by coping
4 dispositions, but also, as argued by Lazarus (1991), by stress appraisals and associated
5 emotional/physiological responses (e.g., activation of autonomic nervous system and
6 hormonal reactions). Situational appraisals of challenge and perceived control should activate
7 positive emotions (e.g., happiness, pride) and facilitative perceptions of arousal, and should
8 lead to the employment of problem-focused coping strategies (e.g., planning, prioritisation).
9 In contrast, situational appraisals of threat, harm/loss or uncontrollability often lead to
10 negative emotions (e.g., anger, sadness, disgust), unpleasant physiological responses and
11 emotion-focused (e.g., venting of emotions) coping responses (e.g., as often happens when
12 someone receives news about a serious illness of a significant other). Stress appraisals are
13 expected to have direct effects on coping strategies in addition to their indirect effects via
14 emotional/physiological responses.

15 In past research, direct relationships were found between motivational regulations and
16 coping (Ryan & Connell, 1989; Amiot et al., 2004) and between psychological needs and
17 coping (Skinner & Edge, 2003). The general pattern of these relationships was that
18 psychological need satisfaction and self-determined motivation were associated with adaptive
19 coping responses. We have not proposed such direct links in our model because we believe
20 that such relationships are probably mediated by stress appraisals as coping responses always
21 require an evaluation of a stressful encounter (Lazarus, 1991). Empirical evidence is needed
22 to examine the degree of mediation in these relationships.

23 Effective coping responses can lead to a variety of positive outcomes such as physical
24 and psychological health, positive adaptations to illness, subjective well-being, behavioural
25 indicators of persistence or commitment to goal pursuit, goal progress and accomplishment,

1 and positive emotional reactions and cognitions (for an overview of the extant literature, see
2 Aldwin, 2000; Lazarus, 1991). However, concluding that certain coping strategies are
3 effective (or that other strategies are ineffective) should not be carried out on the basis of
4 resultant outcomes. Folkman (1992) outlined several limitations of this approach including
5 the difficulty of identifying adaptive outcomes for diverse contexts, the likelihood that the
6 same coping strategy might not have consistent outcomes across individuals, stress
7 encounters, or different stages of the same encounter (e.g., because of differences in
8 motivation), and the possibility of choosing inappropriate outcome variables. For example,
9 with regard to the latter, it is inappropriate to equate coping with solving of problems and
10 reduction of stress when such outcomes are sometimes impossible (e.g., coping with terminal
11 illness). In such cases more appropriate criteria (e.g., degree of psychological adjustment and
12 accommodation) that give emphasis on processes rather than outcomes are needed. The latter
13 approach is consistent with the goodness of model fit proposed by the CMRT of coping. As
14 explained earlier, this approach gives emphasis on the match between situational appraisals of
15 control and coping choices, as well as the ability of individuals to demonstrate coping
16 flexibility in changing circumstances (Folkman & Moskowitz, 2004). Terry and Hynes'
17 (1998) study of a sample of women dealing with IVF treatment (an uncontrollable stressor)
18 shows the importance of matching appraisals and coping responses. In this study, "problem-
19 management" strategies led to poor psychological adjustment whereas "emotional approach"
20 coping resulted in better adjustment.

21 As we stated in the introduction to our model, we expect that most of its variables will
22 be reciprocally related over time. For example, the outcomes of the coping process should
23 influence evaluations of psychological need satisfaction. To illustrate the point, psychological
24 adjustment, goal attainment or progress and improvements in health should enhance feelings
25 of effectance, control and/or attachment to others. In contrast, less successful outcomes can

1 lead to or exacerbate feelings of psychological need thwarting. Further, coping strategies and
2 coping outcomes will lead to reappraisal of stressors (Lazarus, 1991). For example, effective
3 coping strategies might lead to re-appraisals of challenge for a previously perceived as
4 threatening stressor, resulting in further effective coping efforts to deal with the situation
5 (e.g., chemotherapy treatment). Also, in certain situations, positive outcomes (e.g., improved
6 quality of life) resulting from effective coping (e.g., changing one's priorities, time
7 management strategies) can reduce or eliminate the impact of a particular demand or
8 constraint (e.g., rehabilitating from a heart attack).

9

10 *Conclusions*

11 We hope that this paper and the proposed integrative model will instigate research on how
12 personal and contextual motivational factors affect coping appraisals, coping responses and
13 important outcomes in the health and other life domains. Studying the coping process from a
14 SDT perspective is important because the view of motivation taken by the CMRT of coping is
15 rather restrictive. For example, rather than examining motivation simply in terms of progress
16 or setbacks during the goal striving process, it is imperative to identify whether an individual
17 is high, low or non- self-determined during goal pursuit, whether his/her psychological needs
18 are satisfied or thwarted during this pursuit, and whether the socio-contextual environment
19 plays a supportive or undermining role. From a SDT of motivation perspective, the inclusion
20 of appraisals, emotions and coping responses is also imperative in order to better understand
21 responses and adaptations in situations where individuals experience difficulties, setbacks or
22 losses during their strivings. Although it is claimed (e.g., Vallerand, 1997) that self-
23 determined motivation and psychological need satisfaction lead to more positive outcomes,
24 the mediatory processes that facilitate such outcomes are not well-studied. For example, how

1 can high self-determined versus low-self-determined motivation to caregiving predict
2 variations in the quality and quantity of caregiving, especially during rough periods?

3 We offer our model as an initial platform for generating new research which, besides
4 its theoretical interest, may have important applied implications. For example, it is often
5 argued in the coping literature that psychologists working with individuals who are in
6 stressful situations should help these individuals with how they appraise these situations and
7 how to choose effective coping responses. However, we argue that it is also important that
8 psychologists understand the personal and contextual motivational determinants of their
9 clients' goals which are at stake in these stressful situations. For example, if weight loss is a
10 valued goal at stake, how individuals appraise and cope with difficulties in their goal striving
11 might be determined to a significant extent by whether they pursue this goal for self-
12 determined or controlled reasons and whether their social environment (e.g., family) fosters or
13 thwarts their psychological needs during goal striving. The impetus for this paper was the
14 surprisingly scarce amount of research on how coping and motivational factors interrelate in
15 the health domain. Empirical testing is needed to examine the plausibility of the proposed
16 paths and sequences within a variety of stressful situations (e.g., medical screening tests,
17 caregiving responsibilities, adaptation to illness, weight and body image related problems,
18 etc.), modifying the integrative model where appropriate. The role of individual (e.g., age,
19 gender) and societal factors (e.g., culture), as well as the type of stressors (e.g., acute vs.
20 chronic, single vs. multiple) in the model should also be explored by future research.
21 Experimental (e.g., interventions to promote need supportive contexts) and longitudinal
22 research is particularly important to examine the causal and reciprocal nature of the proposed
23 mechanisms and links.

References

- 1
2 Aldwin, C.A. (2000). *Stress, coping and development: An integrative perspective*. New York:
3 Guildford Press.
- 4 Amiot, C. E., Gaudreau, P., & Blanchard, C. M. (2004). Self-determination, coping, and goal
5 attainment in sport. *Journal of Sport and Exercise Psychology*, 26, 396-411.
- 6 Chatzisarantis, N.L.D., Hagger, M.S., Biddle, S.J.H., Smith, B., & Wang, J.C.K. (2003). A
7 meta-analysis of perceived locus of causality in sport, exercise and physical education
8 contexts. *Journal of Sport and Exercise Psychology*, 25, 284-306.
- 9 Deci, E. L, Eghrari, H, Patrick, B. C., & Leone, D. (1994). Facilitating internalization: The
10 self-determination theory perspective. *Journal of Personality*, 62, 119 – 142.
- 11 Deci, E.L., & Ryan, R.M. (1985). *Intrinsic motivation and self-determination in human*
12 *behavior*. New York, NY: Plenum Press.
- 13 Deci, E. L., & Ryan, R. M. (1991). A motivational approach to self: Integration in personality.
14 In R. Dienstbier (Ed.), *Nebraska symposium on motivation: Vol. 38. Perspectives on*
15 *motivation* (pp. 237-288). Lincoln, NE: University of Nebraska Press.
- 16 Deci, E.L., & Ryan, R.M. (2000). The ‘what’ and ‘why’ of goal pursuits: Human needs and
17 the self-determination of behavior. *Psychological Inquiry*, 11, 227 – 268.
- 18 Deci, E. L., & Ryan, R. M. (Eds.), (2002). *Handbook of self-determination research*.
19 Rochester, NY: University of Rochester Press.
- 20 Edmunds, J., Ntoumanis, N. & Duda, J. L. (2008). Testing a self-determination theory based
21 teaching style in the exercise domain. *European Journal of Social Psychology*, 38,
22 375-388.
- 23 Endler, N.S., & Parker, J.D.A., (1990). Multidimensional assessment of coping: A critical
24 evaluation, *Journal of Personality and Social Psychology*, 58, 844–854.

- 1 Folkman, S. (1984). Personal control and stress and coping processes: a theoretical analysis.
2 *Journal of Personality and Social Psychology*, 46, 839-852.
- 3 Folkman, S. & Lazarus, R.S. (1985). If it changes it must be a process: study of emotion and
4 coping during three stages of a college examination. *Journal of Personality and Social*
5 *Psychology*, 48, 150-170.
- 6 Folkman, S., & Moskowitz, J.T., (2004). Coping: Pitfalls and promise. *Annual Review of*
7 *Psychology*, 55, 745–774.
- 8 Hagger, M. S. & Chatzisarantis, N. L. D. (2007). *Intrinsic motivation and self-determination*
9 *in exercise and sport*. Champaign, Ill: Human Kinetics.
- 10 Holland, K.D. & Holahan, C.K. (2003). The relations of social support and coping to positive
11 adaptation to breast cancer. *Psychology and Health*, 18, 15–29.
- 12 Knee, C. R., Patrick, H., Vietor, N. A., Neighbors, C. T., & Nanayakkara, A. (2002). Self-
13 determination as growth motivation in romantic relationships. *Personality and Social*
14 *Psychology Bulletin*, 28, 609–619.
- 15 Kneebone, I.I., & Martin, P.R. (2003). Coping and caregivers of people with dementia. *British*
16 *Journal of Health Psychology*, 8, 1-17.
- 17 Krohne, H.W. (1996). Individual differences in coping. In: M. Zeidner & N.S. Endler (Ed.),
18 *Handbook of coping: Theory, research, applications*, (pp. 381–409). Wiley, New
19 York.
- 20 Lazarus, R.S. (1966). *Psychological stress and the coping process*. New York: McGraw-Hill.
- 21 Lazarus, R.S. (1991). *Emotion and adaptation*. New York: Oxford University Press.
- 22 Lazarus, R.S. (1993). Coping theory and research: Past, present, and future. *Psychosomatic*
23 *Medicine*, 55, 234 – 247.
- 24 Lazarus, R. S. (1999). *Stress and emotion: A new synthesis*. New York: Springer.
- 25 Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal and coping*. New York: Springer.

- 1 Muraven, M., H. Rosman, & Gagné, M. (2008). Helpful self-control: Autonomy support,
2 vitality, and depletion. *Journal of Experimental Social Psychology, 44*, 573-585.
- 3 Orbell, S., Hagger, M., Brown, V. & Tidy, J. (2004). Appraisal theory and emotional sequelae
4 of first visit to colposcopy amongst women with abnormal cervical smears. *British*
5 *Journal of Health Psychology, 9*, 533-556.
- 6 Pelletier, L. G., Dion, S. C., Slovenic-D'Angelo, M., & Reid, R. (2004). Why do you regulate
7 what you eat? Relationship between forms of regulation, eating behaviors, sustained
8 dietary behavior change, and psychological adjustment. *Motivation and Emotion, 28*,
9 245-277.
- 10 Reeve, J. (2002). Self-determination theory applied to educational settings. In E.L. Deci &
11 R.M. Ryan (Eds.), *Handbook of self-determination research* (pp. 183 – 203).
12 Rochester, NY: University of Rochester Press.
- 13 Ryan, R. M., & Connell, J. P. (1989). Perceived locus of causality and internalization:
14 Examining reasons for acting in two domains. *Journal of Personality and Social*
15 *Psychology, 57*, 749-761.
- 16 Sabiston, C., Sedgwick, W. A., Crocker, P. R. E., Kowalski, K. C., & Mack, D. E. (2007).
17 Social physique anxiety in adolescence: An exploration of influences, coping
18 strategies, and health behaviors. *Journal of Adolescent Health, 22*, 78-101.
- 19 Senécal, C., Nouwen, A., & White, D. (2000). Motivation and dietary self-care in adults with
20 diabetes: Are self-efficacy and autonomous self-regulation complementary or
21 competing constructs? *Health Psychology, 19*, 452-457.
- 22 Sheldon, K.M., & Elliot A.J. (1999). Goal striving, need-satisfaction, and longitudinal well-
23 being: The Self-Concordance Model. *Journal of Personality and Social Psychology,*
24 *76*, 482-497.

- 1 Sheldon, K. M., Williams, G. C., & Joiner, T. (2003). *Self-Determination Theory in the clinic:
2 Motivating physical and mental health*. New Haven, CT: Yale University Press.
- 3 Smith, A. L., Ntoumanis, N., & Duda, J. L. (2007). Goal striving, goal attainment, and well-
4 being: An adaptation of the Self-Concordance Model in sport. *Journal of Sport and
5 Exercise Psychology, 29*, 763-782.
- 6 Skinner, E., & Edge, K. (2002) Self-determination, coping, and development. In Deci, E. L.,
7 & Ryan, R. M. (Eds.), (2002). *Handbook of self-determination research*. Rochester,
8 NY: University of Rochester Press.
- 9 Terry, D.J., & Hynes, G.J. (1998). Adjustment to a low-control situation: Reexamining the
10 role of coping responses. *Journal of Personality and Social Psychology, 74*, 1078–
11 1092.
- 12 Vallerand, R. J. (1997). Toward a hierarchical model of intrinsic and extrinsic motivation. In
13 M.P. Zanna (Ed.), *Advances in experimental social psychology* (pp. 271 – 360). New
14 York: Academic Press.
- 15 Williams, G. C., Rodin, G. C., Ryan, R. M., Grolnick, W. S., & Deci, E. L. (1998).
16 Autonomous regulation and long-term medication adherence in adult outpatients.
17 *Health Psychology, 17*, 269-276.
- 18 Williams, G. C., Gagné, M., Ryan, R. M., & Deci, E. L. (2002). Facilitating autonomous
19 motivation for smoking cessation. *Health Psychology, 21*, 40-50.
- 20 Williams, G.C., Grow, V. M., Freedman, Z. R., Ryan, R. M., & Deci, E. L. (1996).
21 Motivational predictors of weight loss and weight-loss maintenance. *Journal of
22 Personality and Social Psychology, 30*, 115 – 126.
- 23

Figure Captions

1

2

3 *Figure 1.* A schematic representation of the self-determination process (adapted from

4 Vallerand, 1997)

5 *Figure 2.* Integrating central components of the Cognitive-Motivational-Relational Theory of

6 coping (Lazarus, 1991) and Self-Determination Theory of motivation (Deci & Ryan, 1985)

7

1
2
3
4
5
6
7
8
9



