Krzysztof Stanisławski

The Coping Circumplex Model: A Theoretical Synthesis of Coping Constructs and Its Empirical Verification

The Coping Circumplex Model

Krzysztof Stanisławski

The Coping Circumplex Model: A Theoretical Synthesis of Coping Constructs and Its Empirical Verification

Warszawa 2022

Wydawnictwo Naukowe
Uniwersytetu Kardynała Stefana Wyszyńskiego

Scientific reviewers

prof. dr hab. Bogdan Zawadzki
dr hab. Małgorzata Sobol
dr hab. Michał Ziarko

Layout, typeset and cover by

Maciej Faliński

Cover photography by

Marius Venter / pexels.com

ISBN 978-83-8281-137-7

eISBN 978-83-8281-138-4

Printed and bounded by

Volumina.pl Daniel Krzanowski, ul. ks. Witolda 7-9, 71-063 Szczecin

Please cite as:

Stanisławski, K. (2022). *The Coping Circumplex Model: A Theoretical Synthesis of Coping Constructs and Its Empirical Verification*. Wydawnictwo Naukowe UKSW.

"...to myself I seem to have been only like a boy playing on the sea-shore, and diverting myself in now and then finding a smoother pebble or a prettier shell than ordinary, whilst the great ocean of truth lay all undiscovered before me."

Sir Isaac Newton (based on Brewster, 1855, p. 407)

Table of Contents

List of Tables

List of Figures

Acknowledgements

I would like to extend sincere gratitude to my main supervisor, Prof. Jan Cieciuch, for his constructive criticism, which he has continued to offer since my graduate studies and which has influenced my research intuitions. Prof. Cieciuch's fascination with circumplex and circular models aroused my interest in this field and inspired me to search for a circumplex structure in coping.

I am grateful to my auxiliary supervisor, Włodzimierz Strus, PhD, for direct and creative discussions which have helped me refine my understanding of research reality. I would also like to thank him for friendly support, which has greatly aided me in overcoming the problems inherent in stress psychology.

I am obliged to all 1483 respondents without whose help this work could never have been accomplished.

I am grateful to my friend Leszek for all the support he has given me throughout my years of work on this project. Last but not least, I thank my Mom and Dad for being with me in moments of fascination accompanying the formulation of new ideas, in moments of doubt, and during arduous work. Thank you for your reassuring support, which has sustained and enhanced my research motivation. Without you, the completion of this work would have been incomparably more difficult.

Krzysztof Stanisławski

Abstract

The aim of the book is to present the Coping Circumplex Model (CCM), a model that was developed with the aim of integrating a variety of coping constructs. The construct of coping is indispensable for an understanding of the effects of stress on health, psychological functioning, and well-being. Unfortunately, there is little consensus as to the structure of coping, with at least 100 taxonomies and more than 400 categories identified in the literature. The absence of a general agreement on core coping constructs hinders the consolidation of knowledge.

In an attempt to address the above issues, the Coping Circumplex Model (CCM) has been developed and empirically verified in the proposed book. The model contains a total of eight coping styles forming a circumplex: Positive emotional coping, Optimistic action, Problem solving, Preoccupation with the problem, Negative emotional coping, Pessimistic passivity, Problem avoidance and Hedonic disengagement.

The empirical verification of the model was conducted in a series of studies with total sample of 1,483 participants. A full circumplex structure was demonstrated. The vast majority of external coping constructs could be reliably located within the space of the CCM.

Based on the obtained results, this book overcomes some of the existing problems in stress psychology by: (a) providing a foundation for the integration of numerous coping constructs; (b) clarifying linkages between the effectiveness of coping strategies and situation controllability; (c) explaining the relationship between coping and the mechanisms underlying psychological interventions.

Keywords: *Coping with stress, Coping style, Coping strategy, Coping Circumplex Model, Mental health, Emotion regulation*

Introduction

The term "stress" was initially used in a technical context (Lazarus, 1993). Robert Hooke, an influential 17th century physicist and biologist, considered how structures such as bridges should be designed to carry heavy loads while resisting the destructive forces of nature such as earthquakes or strong winds. In his terminology, "load" reflected the force acting on the structure, "stress" referred to the area subjected to the load, and "strain" was the distortion of the structure produced by the load and stress. Hooke's studies affected early medical and psychological models of stress, although his initial terms have been modified: the "load" from Hooke's analysis has been renamed "stress" or "stressor" by psychologists and physicians (Lazarus, 1993).

Cannon (1914) and Selye (1936) were the first researchers to use the concept of stress in the modern sense, although they still represented a biological perspective. The first publication to analyze psychological stress was the 1945 book by Grinker and Spiegel entitled *Men under stress*. Since that year, a huge number of papers have been published on the subject of psychological stress and its effects on health. There is a large body of literature showing that severe or chronic stress leads to disorders or poor health outcomes (Cohen et al., 2007; Dong et al., 2004; Dube et al., 2009; Kivimäki et al., 2006; Mohr et al., 2004). However, it appears that the effects of stress on health and psychological well-being are mediated by coping (Folkman & Lazarus, 1988a; Littleton et al., 2007; Pargament et al., 2004; Penley et al., 2002; Prati & Pietrantoni, 2009).

Having said that, there is a lack of consensus among researchers regarding the structure of coping (Skinner et al., 2003). Moreover, the application of the same coping categories using different questionnaires and samples is problematic (cf. Compas et al., 2001; Skinner et al., 2003), which hinders the aggregation of results from various studies. It is worth noting that there is also a gap between coping research and the practice of psychological interventions (Coyne & Racioppo, 2000). For instance, it is not known how to link some effective interventions with coping theory and explain their positive therapeutic effects (Coyne & Racioppo, 2000). It seems that a comprehensive model integrating the structure of coping with stress

is needed to overcome at least some of the problems outlined above. It is a goal worth pursuing, even if the path leading to it is fraught with difficulties.

Taking into account the problems of coping research described above, an attempt has been made to develop a model deriving from the literature and at the same time containing original solutions to the problems identified there. The key idea of the new proposal is that coping styles have a circumplex structure which enables the integration of many different constructs used to describe coping. The two dimensions defining the circumplex are postulated to be *Problem coping* and *Emotion coping*.

Crucially, the coping construct itself should be grounded in theory, and it seems that in this respect suitable theoretical foundations are provided by stress theories. Therefore, the theoretical part of the dissertation begins with a discussion of the most important theories and models of stress, which is followed by an overview of coping models. Finally a new, original theoretical model is formulated complete with definitions of coping strategy, mode and coping style, as well as descriptions of the two basic dimensions of coping and the corresponding constructs. The empirical part characterizes the methods used to verify the proposed model, presents the obtained results and discusses the findings.

Chapter 1.
Theories of Stress

Abstract. This chapter presents review of various theories of stress. It seems that the three approaches to defining stress presented herein well reflect its conceptual diversity: (a) stress as a nonspecific response (Selye, 1974); (b) stress as a stimulus (Janis, 1958/2016); (c) stress as an interaction between individual and environment (Hobfoll, 1989; Lazarus & Folkman, 1984). The description of each theory contains both applications and critique. The presented review devotes the most space to the transactional model of stress and coping (Lazarus & Folkman, 1984) because it provides the most suitable theoretical foundations for distinguishing the coping constructs. While the other theories focus on various aspects of stress, they do not afford much information about coping with it (Janis, 1958/2016; Hobfoll, 1989; Selye, 1974).
Keywords: *General Adaptation Syndrome, Transactional model of stress and coping, Conservation of resources theory*

The word "stress" in its various meanings is used colloquially to describe people's experiences. In the scientific sense, the notion of stress is of interest not only to psychologists, but also biologists, physicians and sociologists. It seems that the three approaches to defining stress presented herein well reflect its conceptual diversity: (a) stress as a nonspecific response (e.g., Selye, 1974); (b) stress as a stimulus (e.g., Janis, 1958/2016); (c) stress as an interaction between individual and environment (e.g., Hobfoll, 1989; Lazarus & Folkman, 1984). This chapter describes four stress theories within the aforementioned three approaches; one of the theories is biological (Selye, 1974), while the remaining three are psychological (Hobfoll, 1989; Janis, 1958/2016; Lazarus & Folkman, 1984).

These stress theories appear to represent the most prominent stress conceptualizations and are often mentioned in the literature (Carver et al., 2008; Devonport, 2011; Heszen-Niejodek, 2005; Rice, 2000). The presented review devotes the most space to the transactional model of stress and coping (Lazarus & Folkman, 1984) because it provides the most suitable theoretical foundations for distinguishing

the coping construct. While the other theories focus on various aspects of stress, they do not afford much information about coping with it (Janis, 1958/2016; Hobfoll, 1989; Selye, 1974).

Stress Defined as a Nonspecific Response

Selye defined stress as "the nonspecific response of the body to any demand made upon it" (Selye, 1974, p. 27). Stress can lead to nonspecific adaptive reactions collectively known as the general adaptation syndrome (GAS) consisting of three stages: alarm, resistance and exhaustion. In the alarm stage, the defenses of the organism are mobilized and in the resistance stage the organism adapts to the stressor. The stage of exhaustion ensues when the stressor acts for too long or too intensely, and can eventually lead to death. Beyond GAS, stress can produce many specific responses (e.g., the synthesis of specific antibodies in the aftermath of an infection or clot formation as a result of wounding).

Selye distinguished two types of stress: eustress and distress (Selye, 1974). The former refers to stress combined with positive emotions and motivation for action, while the latter is a harmful type of stress associated with unpleasant feelings (Selye, 1974). These two concepts have been widely adopted in psychological stress research. Stress was recognized as an unpleasant emotional reaction already in early psychological writings. For example, Mechanic and Volkart (1961) conceptualized stress as anxiety and a feeling of discomfort and tension emerging in certain situations, e.g., during examinations. Unfortunately, the idea of stress as a nonspecific response is difficult to apply in psychology, because internal responses similar to stress reactions (e.g., a feeling of tension) can be triggered by very different stimuli, e.g., by biological agents or watching a horror movie. At least some of these responses can be related to certain emotions or even automatic processes rather than psychological stress.

Stress Defined as a Stimulus

According to Janis (1958/2016), stress refers to "those changes in the environment which typically – i.e., in the average person – induce a high degree of emotional tension and interfere with normal patterns of response" (p. 13). He also distinguished the stress situation (i.e., disruptive stimuli) from the stress reaction (i.e., changes in behaviors, emotions and attitudes induced by the disruptive stimuli) (Janis, 1958/2016). Janis was one of the first authors to use the term "psychological stress" and to make the aforementioned distinction between stress situations and reactions.

Janis defined three phases of psychological stress evoked by objective danger (Janis, 1958/2016):

1. Threat phase – the individual perceives signs of danger eliciting emotional tension.
2. Danger impact phase – the individual perceives that the threat is imminent and realizes that his or her chances of escaping it depend partly on his or her actions or on those of other people.
3. Post-impact victimization phase – the individual perceives the losses incurred.

An understanding of stress as a stimulus is reflected in the popular theory of life events (Holmes & Rahe, 1967), operationalized with the Social Readjustment Rating Scale (SRRS) – a list of important life events, both those considered positive (e.g., marriage) and negative (e.g., loss of a loved one). According to the authors, life changes are stressful in themselves irrespective of their subjective interpretations. However, that view has been rejected in stress psychology and the operationalization of Holmes and Rahe's (1967) theory has been widely criticized, which has stimulated research on the health effects of life events (Dohrenwend, 2006).

Generally speaking, the conceptualization of stress as a stimulus (e.g., Holmes & Rahe, 1967; Janis, 1958/2016) is ambiguous as the same situation can be stressful for one person, but not for another. Attempts to understand stress either as an external phenomenon in relation to the person or as an individual's reactions to particular stimuli have proved insufficient and prompted further investigations. Currently, the dominant approach in psychology is to treat stress as an interaction of human and environment (e.g., Hobfoll, 1989; Lazarus & Folkman, 1984; Strelau, 1995, 2000).

Stress Defined as an Interaction Between Individual and Environment

The two proposals treating stress as an interaction between person and environment are described below in the chronological order of their development and taking into account the significance of subjective and objective criteria in stress elicitation. The first theory is Lazarus' transactional model of stress and coping (Lazarus, 1966; Lazarus & Folkman, 1984), according to which subjective appraisal plays a key role in the emergence of stress. It is followed by the model of Hobfoll (1989), who argued that stress can be induced both by objective factors and subjective perceptions.

Lazarus' transactional model of stress and coping. Lazarus developed a meta-theoretical cognitive-relational model of emotion and coping with stress (Lazarus, 1966; Lazarus, 1993; Lazarus & Alfert, 1964; Lazarus & Folkman, 1984, 1987; Lazarus & Smith, 1988). In this approach, psychological stress is "a particular

relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (Lazarus & Folkman, 1984, p. 19). Lazarus emphasizes that stress is not an interaction, but a transaction by nature. The term *interaction* suggests that both parties have stable characteristics, in contrast to *transaction*, which indicates that the environment influences the person and vice versa. Second, in an interaction antecedent variables remain unchanged, whereas the constituent elements of a transaction form a new psychological reality. Lazarus claims that stress is neither an external stimulus nor the trait of a person, but rather a *relational concept* (Lazarus, 1998, p. 198).

Role of appraisals. A crucial distinction in the transactional model is that between knowledge and appraisal (Lazarus & Smith, 1988). Knowledge consists of "cognitions about the way things are and how they work" (Lazarus & Smith, 1988, p. 282), while appraisal concerns the evaluation of the significance of this knowledge for well-being (Lazarus & Smith, 1988). Lazarus (2000) pointed out that a substantial proportion of appraisals are processed outside of consciousness. He distinguished two forms of appraisal: primary and secondary (Lazarus & Smith, 1988). The evaluation of the significance of a transaction for one's well-being is termed primary appraisal, with its two components being motivational relevance and motivational congruence (Lazarus & Smith, 1988). Motivational relevance reflects the extent to which a transaction affects personal goals, whereas motivational congruence refers to how consistent or inconsistent it is with personal goals. Configurations of these two components of primary appraisal lead to three possible subtypes of transaction relevance: 1. irrelevant, 2. benign-positive, 3. stressful. Stressful appraisals are further subdivided into 1. harm/loss, 2. threat, 3. challenge (Lazarus & Smith, 1988). Harm/loss pertains to damage or injury already accrued, e.g., the loss of a significant other, of existential meaning, of physical function, etc. Threat refers to an expectation of future harm, e.g., fear of losing one's job. A challenge arises from the difficult demands that a person may encounter. While a challenge entails a risk of harm, it also presents an opportunity for growth and mastery; for instance, the risk of job loss may provide motivation to raise one's qualifications and thus increase one's market value. A threat appraisal is likely when a person perceives the environment as hostile and lacks the resources to cope with the obstacles. In contrast, a challenge emerges when an individual believes that external demands are difficult, but can be dealt with, and he or she has the skills to resolve the problem (Lazarus, 1998; Lazarus & Folkman, 1987).

In the event of a primary appraisal of harm/loss, threat, or challenge, the individual must decide on a coping option. In turn, a secondary appraisal involves evaluation of one's resources and coping options. It consists of the following components: accountability, problem-focused coping potential, emotion-focused coping potential and future expectancy (Lazarus & Smith, 1988). Accountability indicates who "is

to receive the credit (if the encounter is motivationally congruent) or the blame (if it is motivationally incongruent) for the harm or benefit" (Smith & Lazarus, 1990, p. 618). Problem-focused coping potential refers to one's ability to take action and manage the demands of the situation to make it more compatible with one's goals. Emotion-focused coping potential is defined as one's ability to regulate one's emotional responses. Coping potential does not mean the actual coping behavior in a given situation, but rather evaluation of one's own ability to cope with it. The last component of secondary appraisal is future expectancy, which refers to one's expectations of change in the situation, whether favorable or unfavorable (Smith & Lazarus, 1990).

Actually, primary appraisal may not, and often does not, come first in the appraisal process. It is labeled *primary* because it is based on relevance to personal well-being and it can make information emotionally loaded (Lazarus & Smith, 1988). Secondary appraisal may appear before primary appraisal, as when a person ponders how he or she would handle a threat if it should arise, as a precaution. Besides primary and secondary appraisal, people can reinterpret the person-environment relationship. Cognitive reappraisal involves the modification of thoughts about an emotion-eliciting situation in order to alter its emotional impact (Lazarus & Alfert, 1964).

Appraisal processes depend on personal variables and situational factors. Appraisal is determined by two personal sets of variables: beliefs about the self and the environment as well as values and commitments. The most important situational factors influencing the appraisal process are: the imminence of harm, stimulus ambiguity, the power of the environment to do harm and duration (Lazarus, 1998).

Elicitation of emotions. Appraisal processes are connected with core relational themes pursuant to the principle that "each emotion category is considered to be a reaction to distinctive kinds of harm or benefit" (Lazarus & Smith, 1988, p. 290). For example, the core relational theme for anxiety is potential of future harm, especially of unclear and symbolic nature (Lazarus & Smith, 1988). A benign-positive appraisal produces positive emotions, such as joy, relief, contentment, etc. A stressful appraisal leads to negative emotions, e.g., fear, guilt, disgust, anger, etc.

Primary appraisals leading to negative emotions are characterized by high levels of motivational relevance and incongruence. The components of secondary appraisal are needed to differentiate between those emotions (Lazarus & Smith, 1988). In the case of other-accountability, anger is the usual outcome, while in the case of self-accountability, guilt is more likely. A feeling of helplessness (low coping potential) typically leads to sadness, and when one's ability to resolve the problem is uncertain and/or negative outcome is possible but not certain, the tendency to experience anxiety increases (Lazarus & Smith, 1988).

Role of coping. In Lazarus' theory (Lazarus & Folkman, 1984) the various elements of a transaction are interdependent and it would be difficult to present a conceptualization of stress without at least briefly discussing coping functions. Coping is defined as "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (Lazarus & Folkman, 1984, p. 141). Coping is understood as purposeful activity including conscious processes and defense mechanisms. Importantly, in the transactional model coping is triggered by appraisal. Lazarus and Folkman (1984) identified two overarching coping categories, i.e., problem-focused and emotion-focused coping. The former is an instrumental form of coping used in situations where something can be done, whereas the latter is aimed at regulating distress and is preferable in situations that cannot be changed. A favorable outcome of coping elicits positive emotions, while an unfavorable one entails negative emotions. Outcomes contrary to expectations may trigger a repetition of the entire coping cycle (Lazarus & Folkman, 1984). It is worth noting that in the transactional model emotions arise from cognitive appraisal, accompany the coping process (Folkman & Lazarus, 1988a) and are indicators of coping outcomes (Folkman & Lazarus, 1985).

Folkman's revision of the transactional model of stress and coping. Coping studies have been almost solely focused on negative emotions to the exclusion of positive ones. As early as 1980, Lazarus and colleagues published a chapter acknowledging the adaptive role of positive emotions in stressful transactions. However, until 1990 authors did not give much attention to the significance of positive emotions in dealing with stress. Folkman (1997, 2008) proposed an extension of the transactional model of stress and coping by elevating their role. That modification was inspired by findings from a study on the caregiving partners of men with AIDS, who, besides a strong negative affect, also experienced some positive emotions, even in bereavement (Folkman, 1997).

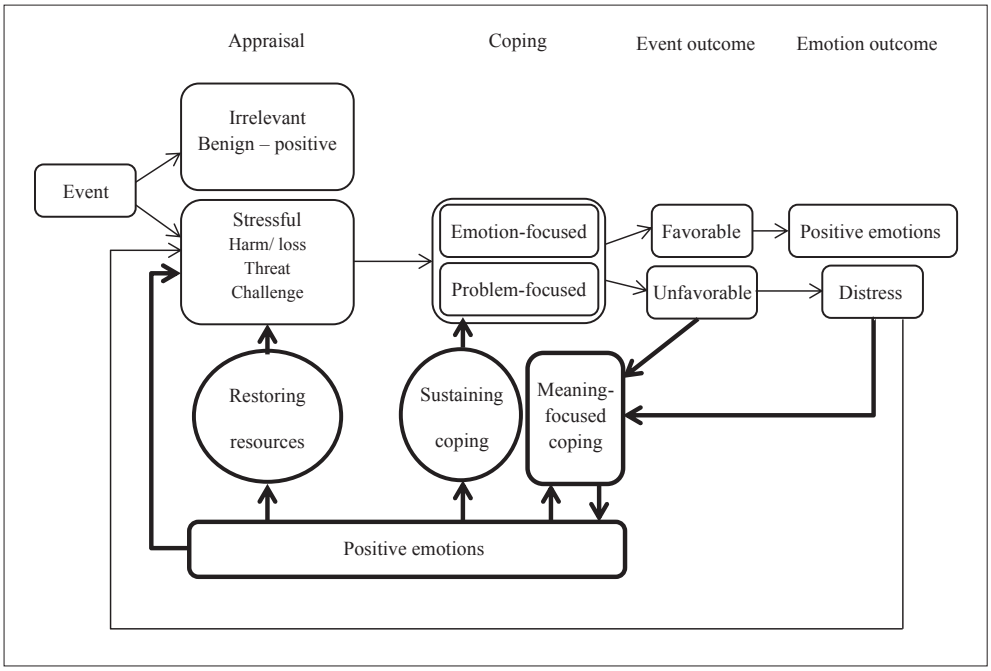
Positive emotions fulfill many adaptive functions: they broaden the range of attention and the spectrum of behavioral responses (Fredrickson & Branigan, 2005), facilitate recovery from the cardiovascular consequences of negative emotional states (Fredrickson et al., 2000), and can stimulate the immune function (Marsland et al., 2007; Steptoe et al., 2009). Interestingly, the beneficial effects of positive emotions on health are independent of depressed mood, which suggests separate underlying biological processes (Steptoe et al., 2009). Moreover, positive affect is associated with adaptation to stressful situations (Fredrickson et al., 2003; Gloria et al., 2013; Ong et al., 2006).

Acknowledging the significance of positive emotions in stress, Folkman (2008) developed a revised transactional model of stress and coping. With the exception of reappraisal, the classical model did not provide a constructive solution when coping results were unfavorable. In the revised model (Folkman, 2008), in such

cases the individual may endorse meaning-focused coping, which is defined as "appraisal-based coping in which the person draws on his or her beliefs (e.g., religious, spiritual, or beliefs about justice), values (e.g., 'mattering') and existential goals (e.g., purpose in life or guiding principles) to motivate and sustain coping and well-being during a difficult time" (Folkman, 2008, p. 7).

Meaning-focused coping is triggered by distress and elicits positive emotions, which, according to the principle of positive feedback, influence meaning-focused coping. At this point, relationships between coping and emotions are reversed as compared to the classical model. Positive emotions generated by meaning-focused coping also facilitate long-term maintenance of other coping efforts (especially problem-focused coping), enable restoration of resources and provide relief from negative experiences (Folkman, 2008). The revised transactional model of stress and coping is shown in Figure 1.

Figure 1
The revised transactional model of stress and coping



Note. The bolded elements were added by Folkman (1997, 2008) to the classical model.
Source: own elaboration based on Folkman (2008).

Critique. This theory is very complex and it is probably impossible to verify the entire model (Hobfoll, 1989). Lazarus' proposal can be treated as a heuristic framework and only some of its elements have been tested (cf. Schwarzer, 2001). Importantly, the basic assumptions underlying the transactional model have been criticized (Heszen, 2013). First, the notion that cognitive appraisal determines

emotions seems to be particularly controversial. In the contemporary literature, there is a consensus that cognitions and emotions are strongly interrelated (e.g., Duncan & Barrett, 2007; Pessoa, 2008; Storbeck & Clore, 2007). Therefore, it is not surprising that in some stress-related studies emotions were found to predict appraisal (Strack & Esteves, 2015). Second, some authors have reported that coping can influence cognitive appraisals (Heszen, 2013), which is contrary to the transactional model. Third, Lazarus' theory claims that emotions result from endorsed coping strategies. However, Carver and Scheier (1994) found that some emotions affect coping and Rovira et al. (2005) demonstrated that emotions are the best predictors of coping. These results are consistent with the general notion that emotions can motivate behavior. Furthermore, the transactional model does not have separate definitions for demands and coping, which makes it tautological. As Hobfoll aptly noted (1989): "demand is that which is offset by coping capacity. Yet, coping capacity is that which offsets threat or demand. Clearly, this reasoning is circular and evolves from the sole emphasis on perceptions" (p. 515). The critique of existing stress conceptualizations prompted Hobfoll to develop his own stress theory.

Hobfoll's theory of conservation of resources. The basic premise postulated by Hobfoll (1989) is that people are motivated to protect their current resources and gain new ones. He conceptualized stress as a "reaction to the environment in which there is (a) the threat of a net loss of resources, (b) the net loss of resources, or (c) a lack of resource gain following the investment of resources" (Hobfoll, 1989, p. 516). Both perceived and actual loss, or lack of gain, of resources are sufficient to trigger stress.

Resources are defined as those "objects, personal characteristics, conditions, or energies that are valued by the individual or that serve as a means for attainment of these objects, personal characteristics, conditions, or energies" (Hobfoll, 1989, p. 516). Four kinds of resources were identified (Hobfoll, 1989):

- Object resources are valuable due to their physical aspects or secondary status which stems from their rarity or expense, e.g., home.
- Conditions are resources in so far as they are valued and sought after, e.g., marriage, professional position.
- Personal characteristics are resources in so far as they enhance stress resistance, e.g., general resistance resources (cf. Antonovsky, 1979).
- Energies are resources enabling the acquisition of other types of resources, e.g., time, money, knowledge.

Hobfoll's (2001) conservation of resources theory contains two major principles: the primacy of resource loss, according to which "resource loss is disproportionally more salient than resource gain" (p. 343) and resource investment positing that "people must invest resources in order to protect against resource loss, to recover from losses, and to gain resources" (Hobfoll, 2001, p. 439). Therefore, the model of conservation of resources allows individuals to use other resources to offset

losses, e.g., through replacement, as in the case of remarriage after divorce (Hobfoll, 1989). The model of conservation of resources can also explain the mechanism of loss spirals, which occur due to the scarcity of resources to offset losses. If resources are employed to prevent the loss of other resources, such a loss could lead to further depletion of resources.

Hobfoll (1989) also considered the role of appraisal of resources which may lead to shifting the focus of attention. Such a shift may serve as way to conserve resources by reinterpretation as individuals may focus on potential benefits instead of losses, turning threats into challenges. Moreover, a person can deal with loss by reevaluating resources (e.g., lowering the value of resources threatened by loss). It should be noted that Hobfoll developed an instrument to measure individual resources based on his theory, that is, the Conservation of Resources Evaluation (COR-Evaluation; Hobfoll & Lilly, 1993).

Critique. The resource category is the most criticized element of the conservation of resources theory (Freund & Riediger, 2001; Halbesleben et al., 2014; Lazarus, 2001). First, Hobfoll (1989, 2001) described striving for resource gain and conservation without explaining the relationship between resources and personal goals (Freund & Riediger, 2001; Lazarus, 2001) – what are resources really needed for and in what ways? Second, the construct of resources is very broad as "nearly anything good can be considered a resource" (Halbesleben et al., 2014, p. 1337), and what is probably most important, it is heterogeneous (Freund & Riediger, 2001; Halbesleben et al., 2014). For example, some resources are depleted as they are invested (e.g., money), while others remain unchanged (e.g., intelligence). Third, the conservation of resources theory says almost nothing about coping and the role of emotions in this process (Lazarus, 2001). The inclusion of coping seems to be necessary for a comprehensive description of response to stress and very useful in predicting stress outcomes (Folkman & Lazarus, 1988a; Knoll et al., 2005; Lazarus, 1993; Prati & Pietrantoni, 2009).

Conclusion: stress as an interaction between individual and environment. The conceptualizations of stress in the approaches of Lazarus and Hobfoll are similar, but the latter author placed a greater emphasis on the role of objective rather than subjective resources. The conservation of resources theory pays little attention to situation appraisal and coping. In contrast, the useful aspects of Lazarus' model include a description of appraisal processes including the categories of harm/loss, threat and challenge, as well as analysis of the process of coping and its relationship to emotions. However, while Hobfoll's model predicts that failure to gain resources after investment produces stress, this category cannot be derived from the transactional model, even though it can be considered the basis of burnout. For instance, in their meta-analysis of work stress and coronary heart disease (CHD), Kivimäki et al. (2006), found that job strain increased the probability

of CHD by 16% while a configuration of high efforts and low rewards at work – by as much as 58%.

Some elements of Hobfoll's theory may be useful in studies on stress (e.g., Park et al., 2014) and some forms of coping (i.e., future-oriented coping; cf. Schwarzer, 2001), but the conservation of resources theory generally focuses on resource management and marginalizes the role of coping. Even in the case of future-oriented coping, Hobfoll's model provides a suitable theoretical framework in conjunction with the transactional model of stress and coping (cf. Schwarzer, 2001).

Some major assumptions of both models have been criticized (Freund & Riediger, 2001; Heszen, 2013), but among all the proposals discussed above Lazarus' approach most fully acknowledges the role of coping in stressful transactions, including appraisals and emotions (Folkman, 2008; Lazarus, 1993; Lazarus & Folkman, 1984). Moreover, Lazarus emphasized the importance of two functions of coping: problem-focused coping and emotion-focused coping (Lazarus, 1993; Lazarus & Folkman, 1984), which can be related to the basic dimensions introduced in this paper (i.e., Problem coping and Emotion coping). The transactional model of stress and coping, including its revised version, constitutes a broad theoretical background for a new coping model, which was developed, presented and verified in this dissertation.

Chapter 2.
Models of Coping Structure[1]

Abstract. This chapter provides an overview of the 13 basic, and most often used, coping models. Each model is discussed in a similar manner: First, its context is delineated, then its tenets and definitions are presented, its significance contribution to the literature are stated, and finally, a critique is provided. Six types of coping models are included: functional models (Carver et al., 1989; Endler & Parker, 1990; Lazarus & Folkman, 1984), topological models (Roth & Cohen, 1986), action models (Band & Weisz, 1988; Brandtstädter & Renner, 1990), models with blended categories (Compas et al., 2001; Gol & Cook, 2004; Tobin et al., 1989), models with a temporal aspect (Aspinwall & Taylor, 1997; Schwarzer, 2001) and models of social forms of coping (Bodenmann, 1997; Lyons et al., 1998). The chapter ends with a description of the problems in the stress and coping literature.
Keywords: *WCQ, COPE, CISS, Problem-focused coping, Emotion-focused coping, Approach coping, Avoidance coping, Proactive coping, Dyadic coping.*

Foundations of Coping Research

The concept of the defense mechanism. Research on coping with stressful situations has a long history. Important remarks on the subject were already made by Sigmund Freud (e.g., 1899/1996), who described unconscious psychological processes, i.e., *repression* and *defense*, protecting people from unwanted thoughts and feelings. In the early and middle periods of his work, Freud used the terms *repression* and *defense* interchangeably (Jarvis, 2004). However, in *Inhibitions, Symptoms and Anxiety* he defined defense as a process that protects ego from instinctual demands, with repression being regarded as one of the defense mechanisms (S. Freud, 1926/1936).

1 "Functional Models of Coping" and "Problems in Coping Research" include small and slightly modified parts of text from Stanisławski (2019).

The next important step in the evolution of this idea was the seminal paper by Anna Freud *Ego and the Mechanisms of Defense* (A. Freud, 1936/2004), which systematized the defense mechanisms described by Sigmund Freud (e.g., repression, sublimation) and described new ones (e.g., identification with the aggressor, intellectualization). According to Anna Freud, people have a tendency to use a limited number of defense mechanisms. This may indicate that each individual has preferred ways of coping with difficult situations, which has had important implications for coping research (e.g., Carver et al., 1989; Endler & Parker, 1990a; Skinner et al., 2003). Moreover, Anna Freud suggested that some defense mechanisms could be more maladaptive than others, which has also inspired many authors to investigate the organization of defenses (e.g., Bond et al., 1983; Haan, 1963; Semrad et al., 1973). This was also reflected in the prominent model of defense mechanism hierarchy by Vaillant (1977), who distinguished four levels: psychotic, immature, intermediate (neurotic) and mature defenses. Psychotic defenses (e.g., denial, distortion, delusional projection) are common in psychosis and in children. Immature defenses (e.g., projection, fantasy, passive-aggressive behavior) are found among patients with severe depression and adolescents. Neurotic defenses (e.g., repression, intellectualization) are common to all people. Mature mechanisms (e.g., sublimation, altruism, humor) are widespread in healthy adults.

The conceptualization of coping. While the idea of coping is rooted in the concept of defense mechanism (Parker & Wood, 2008), the term *coping* is relatively new in psychology, as it first appeared in *Psychological Abstracts* in 1967 (Popplestone & McPherson, 1988 as cited in Coyne & Racioppo, 2000). Coping is "certainly not a unidimensional behavior. It functions at a number of levels and is attained by a plethora of behaviors, cognitions, and perceptions" (Pearlin & Schooler, 1978, pp. 7–8). Generally, coping can be understood in three main ways. Some authors argue that coping refers only to intentional and conscious responses to stress (e.g., Compas et al., 2001), others propose that it stands for intentional responses to stress, whether conscious or unconscious (e.g., Lazarus & Folkman, 1984), while still others claim that it consists of both intentional and automatic responses to stress (e.g., Skinner & Wellborn, 1994). According to the first approach, coping consists of "conscious volitional efforts to regulate emotion, cognition, behavior, physiology, and the environment in response to stressful events or circumstances" (Compas et al., 2001, p. 3). The second approach to coping conceptualization is represented by Lazarus and Folkman (1984); here, coping is a purposeful and changing process elicited by cognitive appraisal and encompasses both conscious responses and unconscious defense mechanisms. However, automatic responses not preceded by appraisal (e.g., reflexes) are not regarded as coping. The third perspective is reflected in the motivational proposal by Skinner and Wellborn (1994), who stated that coping "encompasses peoples' struggles to maintain, restore, replenish and repair the fulfillment of basic psychological needs in the face of experienced assaults

on those needs. Coping is energized by an individual's commitments to relatedness, competence, and autonomy, and is directed by the self-system processes associated with each need" (p. 112). Thus, coping represents "how people regulate their own behavior, emotion, and motivational orientation under conditions of psychological distress" (p. 112).

It should be noted that coping has three semantic connotations: process, strategy and style (Heszen, 2013; Heszen-Niejodek, 1997; Terelak, 2017). A coping style is a stable disposition referring to a certain way of dealing with stress (Wrześniewski, 2000). In turn, a coping process is understood as all actions undertaken by people in stressful situations. This form of coping is dynamic, complex and may take a shorter or longer period of time. Within the coping process, one can distinguish smaller units known as coping strategies, such as planning, positive reinterpretation or distraction (Heszen, 2013; Terelak, 2017).

Approaches to analysis of coping structure. An understanding of coping structure is crucial to explaining the impact of stress on physical and mental health and well-being. It is well established that coping plays an important role as a mediator between stress and its consequences, such as mental health or psychopathology (e.g., Barakat et al., 2007; Dunkley & Blankstein, 2000; Schröder et al., 1998; Weiss et al., 2014). However, there is little agreement as to the structure of coping, with at least 100 coping taxonomies and over 400 categories proposed in the literature (Skinner et al., 2003). Some models are intended for general classification of coping, while others focus on specific events (e.g., rape, illness, or bereavement) or domains (e.g., sport, work, or health). General taxonomies may be divided into hierarchical and single-level ones, with some models designed for adults, and others for adolescents or children. Some proposals refer to how people usually cope with stress, while processual approaches deal with responses to a specific event.

Coping categories can be generated using top-down or bottom-up approaches (Skinner et al., 2003). The bottom-up methodology involves the assignment of coping items to lower-order categories. The pool of items may be obtained in different ways, e.g., derived from open-ended interviews, taken from existing questionnaires, or formulated by researchers. Items are usually classified via exploratory factor analysis (EFA), or, less often, by confirmatory factor analysis (CFA) or rational classification/sorting into categories.

Each of the above methods has some disadvantages (Skinner et al., 2003). In rational classification, researchers could exclude items referring to multiple categories or add new items to facilitate reliable measurement of a selected category. According to Skinner et al. (2003), EFA is not useful in examining the more complex structures of coping (e.g., models involving a hierarchy or matrix). While CFA overcomes some of the shortcomings of EFA, the former is "typically used to test a relatively simple structure of ways of coping, basically a list. These analyses confirm that the categories included are mutually exclusive or are related, but they

do not illuminate more complex relations among categories" (Skinner et al., 2003, p. 222). Common to all bottom-up strategies is that "more complex structures of coping are rarely considered." (Skinner et al., 2003, p. 222). Using bottom-up methods it is difficult to extract conceptually clear, meaningful and comprehensive categories (Skinner et al., 2003). According to Skinner et al. (2003), bottom-up strategies are not sufficient for the creation of a coping taxonomy, but they can be useful for generating a list of lower-order categories, which should be clearly linked with higher-order ones.

In contrast, the first step in top-down approaches is to define a set of higher-order categories (e.g., problem- and emotion-focused coping), which organize the lower-order ones. In practice, higher order categories have been often developed through rational classification of lower order categories in combination with theoretical analysis (Skinner et al., 2003). It would be difficult to identify some general strengths and limitations of top-down approaches, because each model is different. Thus the advantages and weaknesses of particular theories must be discussed separately.

The diversity of coping models. This chapter provides an overview of selected coping models. Each model is discussed in a similar manner: first, its context is delineated, then its tenets and definitions are presented, its significance for the literature and contribution to research are stated, and finally a critique is provided. Six types of coping models are included: functional models, topological models, action models, models with blended categories, models with a temporal aspect and models of social forms of coping (see the summary in Table 1).

The first three types of coping models are described following a framework derived from Skinner et al. (2003), who used three distinctions for higher-order coping categories based on 1) coping functions, 2) topological features, and 3) action types (Skinner et al., 2003). The first distinction refers to functionalism, which analyzed internal processes and behaviors in terms of adaptation to the environment, i.e., from the perspective of their functions (e.g., James, 1890). The most common distinction reflecting coping functions is problem-focused and emotion-focused coping (Lazarus & Folkman, 1984), which has inspired the development of other models (Carver et al., 1989; Endler & Parker, 1990a).

The second set of categories concerns the topological features that describe coping; these are, e.g., active, passive, cognitive, and behavioral. Examples of this distinction are approach and avoidance coping (Roth & Cohen, 1986) and cognitive and behavioral coping (Latack & Havlovic, 1992). Approach and avoidance coping (Roth & Cohen, 1986) is the most influential distinction among topological models. The third type of coping models refers to action theories (Brandtstädter, 1998). They assume that analysis of transactions between individuals and their social environment should be based on actions rather than behaviors alone. Given that various behaviors can be organized around the same goal, actions denote flexible

patterns of cognitive processes, behaviors and emotions enabling the achievement of specific goals (Brandtstädter, 1998). The idea of action theories is reflected in the distinction of primary, secondary and relinquished control (Band & Weisz, 1988) and assimilative and accommodative coping (Brandtstädter & Renner, 1990).

Table 1
Coping Models Included in the Overview

Coping models and their basic categories	Authors
Functional models	
Problem-focused and emotion-focused coping	Lazarus & Folkman (1984)
Coping dimensions grouped as problem-focused, emotion-focused or "less useful"	Carver et al. (1989)
Task-oriented, emotion-oriented and avoidance-oriented coping	Endler & Parker (1990a)
Topological models	
Approach and avoidance coping	Roth & Cohen (1986)
Action models	
Primary, secondary and relinquished control	Band & Weisz (1988)
Assimilative and accommodative coping	Brandtstädter & Renner (1990)
Models with blended categories	
Voluntary vs. involuntary Engagement vs. disengagement Primary control vs. secondary control	Compas et al. (2001)
Engagement vs. disengagement Problem-focused vs. emotion-focused coping	Tobin et al. (1989)
Approach vs. avoidance Emotional equilibrium vs. emotional disequilibrium	Gol & Cook (2004)
Models with a temporal aspect	
Proactive coping	Aspinwall & Taylor (1997)
Reactive, anticipatory, preventive and proactive coping	Schwarzer (2001)
Models of social forms of coping	
Communal coping	Lyons et al. (1998)
Dyadic coping	Bodenmann (1997)

The three remaining types of coping models are models with blended categories, models with a temporal aspect and models of social forms of coping. In models with blended categories, lower-order constructs can be assigned to more than one higher-order/basic dimensions. For instance, self-management/relaxation refers to avoidance and emotional equilibrium (Gol & Cook, 2004), whereas cognitive restructuring reflects engagement coping and secondary control (Compas et al., 2001) or engagement coping and problem-focused coping (Tobin et al., 1989). In addition to overlapping categories, the common feature of these models is a relatively large potential to integrate different coping strategies. According to their authors, two of these models are hierarchical, being developed using both top-down and bottom-up criteria (Compas et al., 2001; Tobin et al., 1989) and one is based on a bottom-up concept mapping procedure (Gol & Cook, 2004). Finally, proposals taking

a completely different perspective are described: models with a temporal aspect (Aspinwall & Taylor, 1997; Schwarzer, 2001) and models of social forms of coping (Bodenmann, 1997; Lyons et al., 1998).

Functional Models of Coping

Problem-focused and emotion-focused coping by Lazarus and Folkman (1984). Lazarus (1998, p. 207) noted that "coping is not a single act but a constellation of many acts and thoughts engendered by a complex set of demands that may stretch out over time." The coping process contains two elements: "an actual interchange between the person and the environment (or among forces within the person)" and "the flow and transformation of the interchange over time" (Lazarus, 1998, p. 189). Moreover, Lazarus (1996) emphasized that coping plays an important role in sustaining normal, non-stressful situations and preventing negative events.

Lazarus and Folkman (1984) distinguished two major functions of coping: problem-focused and emotion-focused. In practice these functions were used to create overarching coping categories, i.e., problem-focused and emotion-focused coping aimed at "managing or altering the problem causing the distress" and "regulating emotional responses to the problem," respectively (Lazarus & Folkman, 1984, p. 150). Folkman and Lazarus (1980, 1985) demonstrated that people use problem- and emotion-focused coping in almost all stressful situations, which suggests that both functions are necessary for a complete description of coping. Lazarus (1998) explained the two functions in more detail: "first, to change the situation for the better if we can, either by changing one's own offending action (focus on self) or by changing the damaging or threatening environment; and second, to manage the somatic and subjective components of stress-related emotions themselves, so that they do not get out of hand and do not damage or destroy morale and social functioning" (pp. 202–203). These functions can be conflicting in face of a threat, e.g., in the event of denial or substance abuse. Such responses can elevate mood without affecting the relationship between person and environment (Lazarus, 1998).

Lazarus is known as a critic of the dispositional approach (coping style) in stress research (Folkman & Lazarus, 1985). His position was shaped under the influence of Mischel's criticism of the trait concept in psychology as a result of low cross-situational consistency of behaviors found in his studies (Mischel, 1968). Eventually, Lazarus (1998) admitted that it is possible to identify coping styles, but they include a combination of different acts rather than a single act.

Lazarus' approach is clearly focused on the process. According to him, the usefulness of a coping strategy depends on the type of stressful situation, personality traits and outcome variables analyzed (e.g., well-being or somatic health). Strategies effective under some conditions may be counterproductive under others (Lazarus, 1993). Lazarus argued that coping strategies change from one stage

of a stressful situation to another. A combination of stages may lead to false and oversimplified results of coping processes (Lazarus, 1993).

To measure coping during a specified period of time, Folkman and Lazarus (1980) developed the Ways of Coping Checklist (WCCL) with items generated based on the coping literature and grounded in problem-focused and emotion-focused coping. Unfortunately, the two-dimensional structure did not reflect the complexity of coping and some of the statements were ambiguous. Subsequently, Folkman and Lazarus (1985) excluded some items from the WCCL, reworded unclear statements and added others to create the Ways of Coping Questionnaire (WCQ).

Table 2
Definitions of Coping Strategies from the WCQ

Coping strategy	Definition
Planful problem-solving	Deliberate problem-focused efforts to alter the situation
Escape–avoidance	Wishful thinking and behavioral efforts to escape or avoid
Accepting responsibility	Acknowledging one's own role in the problem with a concomitant theme of trying to put things right
Positive reappraisal	Efforts to create positive meaning by focusing on personal growth
Confrontive coping	Aggressive efforts to alter the situation
Distancing	Efforts to detach oneself; creating a positive outlook
Self-controlling	Efforts to regulate one's own feelings and actions
Seeking social support	Efforts to seek informational support and emotional support

Note. All definitions are derived from Folkman et al. (1986, p. 995).

Solutions with different numbers of WCQ factors have been extracted: four (Chan, 1994; Van Liew et al., 2016), five (Sørlie & Sexton, 2001), seven (Mishel & Sorenson, 1993) and eight (Folkman & Lazarus, 1985; Folkman et al., 1986). Folkman et al. (1986, p. 995) identified eight factors (Table 2). Five of the scales had reliabilities of .70 or greater, while the internal consistencies of the remaining three scales were lower. Test-retest reliabilities were not presented (Folkman et al., 1986).

Conclusion and critique. Lazarus and Folkman made an important step in the conceptualization and structural elucidation of coping, and influenced the development of many other coping models (e.g., Carver et al., 1989; Endler & Parker, 1990; Tobin et al., 1989). However, their approach is fraught with some contradictions. As it was mentioned, they understood coping as a constantly changing process. If this were the case, measurement of coping would be difficult if not impossible. Furthermore, the WCQ was developed within a structural perspective (with coping scales identified through factor analysis), which stands in contrast to the extremely processual tenets of their theory.

The WCQ is the second most popular coping measure among scholars (Kato, 2015). However, its factor structure varies between studies with some analyses

revealing low reliabilities. Moreover, the distinction between problem- and emotion-focused coping has been criticized (Compas et al., 2001; Lazarus, 1996; Skinner et al., 2003). Towards the end of his career, Lazarus (1996) admitted that the aforementioned distinction "led to an oversimple conception of the way coping works" (p. 292). Furthermore, there is a broad consensus that coping acts can serve both functions (Compas et al., 2001; Lazarus & Folkman, 1987; Skinner et al., 2003). This was illustrated by the following example by Skinner et al. (2003, p. 227): "making a plan not only guides problem solving but also calms emotion. Venting not only escalates negative emotion but also interferes with implementing instrumental actions." The next limitation is that problem- and emotion-focused coping is not conceptually clear (Skinner et al., 2003); particularly problematic is emotion-focused coping, which is composed of very diverse coping categories (Compas et al., 2001). For instance, in some taxonomies emotion-focused coping includes the tendency to calm oneself (e.g., "not worrying", Tolor & Fehon, 1987), whereas in other models it contains emotional discharge. Finally, this distinction is not exhaustive (cf. Band & Weisz, 1988; Carver et al., 1989) as it leaves out, e.g., social support seeking (Skinner et al., 2003).

Interestingly, in 1997 Folkman proposed a revised transactional model of stress and coping incorporating a third coping category, i.e., meaning-focused coping, which sustains coping (e.g., problem-focused efforts) while contributing to the rebuilding of resources. While the inclusion of meaning-focused coping makes the model more comprehensive, the critique of emotion-focused coping remains valid.

Coping dimensions derived theoretically by Carver et al. (1989). In their study, Carver et al. (1989) used a framework founded on a transactional model of stress (Lazarus & Folkman, 1984) and a model of behavioral self-regulation (Scheier & Carver, 1988). The problem-focused and emotion-focused distinction was deemed useful but not sufficient. Initially, Carver et al. (1989) identified 13 dimensions of coping based on the literature. The first five constructs were interpreted as subdimensions of problem-focused coping (i.e., active coping, planning, suppression of competing activities, restraint coping, seeking social support for instrumental reasons), another five represented subdimensions of emotion-focused coping (seeking social support for emotional reasons, positive reinterpretation and growth, acceptance, denial, turning to religion), and three were categorized as "less useful" coping categories (focus on and venting of emotions, behavioral disengagement, mental disengagement) (Carver et al., 1989).

To measure these 13 coping constructs, Carver et al. (1989) developed the COPE, which has since been expanded by its authors to include two additional scales: humor and substance use (Carver, 2013). The definitions of all COPE scales are shown in Table 3. Unfortunately, some scale reliabilities were unsatisfactory (six

were below .70), while the remaining seven scales revealed higher internal consistency indicators. The test-retest correlations were between .42 and .89 (Carver et al., 1989).

While Carver et al. (1989) adopted a top-down approach, the postulated structure was not fully confirmed. Principal axis factoring (PAF) on items resulted in 11 factors, as active coping and planning were fused into one factor and both types of seeking social support also loaded one factor. The second analysis, which was carried out on scales, revealed four factors. The first factor incorporated active coping, planning and suppression of competing activities. The second one included both types of seeking social support and focus on and venting of emotions. The third factor was composed of denial and mental and behavioral disengagement. The fourth factor incorporated acceptance, restraint coping and positive reinterpretation and growth. Turning to religion had a low loading only on factor four.

Table 3
Definitions of COPE Constructs

Coping category	Definition
Problem-focused coping	
Active coping	The process of taking active steps to try to remove or circumvent the stressor or to ameliorate its effects. Active coping includes initiating direct action, increasing one's efforts, and trying to execute a coping attempt in stepwise fashion
Planning	Thinking about how to cope with a stressor. Planning involves coming up with action strategies, thinking about what steps to take and how best to handle the problem
Suppression of competing activities	Putting other projects aside, trying to avoid becoming distracted by other events, even letting other things slide, if necessary, in order to deal with the stressor
Restraint coping	Waiting until an appropriate opportunity to act presents itself, holding oneself back, and not acting prematurely
Seeking social support for instrumental reasons	Seeking advice, assistance, or information
Emotion-focused coping	
Seeking social support for emotional reasons	Getting moral support, sympathy, or understanding
Positive reinterpretation and growth	Construing a stressful transaction in positive terms
Acceptance	Functional response of acceptance of the reality of a stressful situation[a]
Denial	Refusal to believe that the stressor exists or trying to act as though the stressor is not real
Turning to religion	Tendency to turn to religion in times of stress
"Less useful"	
Focus on and venting of emotions	Tendency to focus on whatever distress or upset one is experiencing and to ventilate those feelings
Behavioral disengagement	Reducing one's effort to deal with the stressor, even giving up the attempt to attain goals with which the stressor is interfering
Mental disengagement	Wide variety of activities that serve to distract the person from thinking about the behavioral dimension or goal with which the stressor is interfering
Two additional scales	
Humor	Dealing with negative emotions through humor[a]
Substance use	Use of alcohol or drugs to disengage from a stressor or feel better[a]

Note. Definitions were taken from Carver et al. (1989; pp. 268–270) or were formulated by the author of this dissertation based on the scale items (denoted with [a]).

Conclusion and critique. The COPE is the most widely used coping inventory in academic journals (Kato, 2015). Its major drawbacks are a weak higher-order structure (the distinction between problem-focused and emotion-focused coping was not confirmed) and the low reliabilities of some of its scales. Furthermore, exploratory analyses of the COPE scales demonstrated solutions with different numbers of factors: three (e.g., Stowell et al., 2001), four (e.g., Carver et al., 1989) and five (e.g., Deisinger et al., 1996; Sica et al., 1997). The main advantages of the COPE seem to be a wide range of coping categories included, the existence of two versions of the questionnaire (dispositional and situational) and utility proven in many studies (e.g., Fontaine et al., 1993; Maltby & Day, 2000; Scheier et al., 1994; Sonnentag & Fritz, 2007).

Task-oriented, emotion-oriented and avoidance-oriented coping by Endler and Parker (1990a). Parker and Endler (1992) started with the criticism of existing coping measures, and especially the WCQ. They noted that WCQ scales demonstrated low to moderate reliabilities and their factor structure varied between studies. Furthermore, Folkman and Lazarus (1988b) encouraged users to make modifications to items, which is contrary to the idea of standardized psychometric measurement.

Endler and Parker (1994) developed their own theoretical model on the assumption that coping arises from interactions between personal dispositions and situational factors. In contrast to the mostly unconscious defense mechanism, here coping was regarded as a conscious response to stress (Endler & Parker, 1990b). Moreover, the authors accepted that coping can be considered both as a style and strategy (Endler & Parker, 1994; Parker & Endler, 1992). They conceptualized coping styles as cognitive/behavioral modes typically used by a person in different stressful situations.

In order to develop a coping inventory that would overcome the drawbacks of existing measures, they distinguished three coping styles: task-oriented, emotion-oriented and avoidance-oriented, with the first two referring to problem- and emotion-focused coping (Lazarus & Folkman, 1984). Parker and Endler (1992) noted that problem-focused coping strategies are related to task-orientation, whereas emotion-focused coping strategies reflect person-orientation. "Task-orientation refers to strategies used to solve a problem, reconceptualize it (cognitively), or minimize its effects," while "person-orientation refers to strategies that may include emotional responses, self-preoccupation, and fantasizing reactions" (Parker & Endler, 1992, p. 325). According to Parker and Endler (1992), many coping models contain a third basic dimension – avoidance-oriented coping. They pointed out that avoidance is similar to constructs such as repression-sensitization (Byrne, 1961) or attentional diversion (Krohne, 1986). Avoidance comes in two forms: task-oriented and person-oriented strategies (Parker & Endler, 1992). Task-oriented avoidance consist in distraction, while person-oriented avoidance corresponds to social diversion. Therefore a person can avoid a stressful situation by engaging in substitute

activities (distraction such as watching TV) or seeking out other people (social diversion). "In task-oriented coping, the person is confronting the stressful task. In distraction coping, the person is substituting an alternative task of his or her choosing" (Parker & Endler, 1992, p. 326). On the other hand, social diversion "is person-oriented in that the individual tries to 'lose himself or herself' by being with other persons rather than confronting the stressful situational task" (p. 326).

To measure the three coping styles, Endler and Parker (1990a) developed the Coping Inventory for Stressful Situations (CISS), initially named the Multidimensional Coping Inventory (MCI; Endler & Parker, 1990b). The construction of the CISS reconciled both top-down and bottom-up approaches. The initial pool of items was based on existing coping measures and was generated by students and psychologists (Endler & Parker, 1990b). The structure postulated by the theoretical model was confirmed by principal component analysis (PCA) with low to moderate correlations between coping styles (Endler & Parker, 1994). The CISS revealed satisfactory reliabilities (all Cronbach's alphas above .70) and test-retest correlations were from .51 to .73 (Endler & Parker, 1990a). It is worth noting that based on the three coping styles, Endler et al. (1994) developed an instrument measuring responses to specific stressful situations (Coping Inventory for Stressful Situations–Situation Specific Coping; CISS-SSC).

Conclusion and critique. In contrast to most coping inventories, the CISS showed satisfactory psychometric properties and a stable factor structure, which was confirmed in different cultures, including Polish (Strelau et al., 2005), Icelandic (Rafnsson et al., 2006), Turkish (Boysan, 2012) and Japanese (Watanabe et al., 2015). Moreover, it seems that CISS styles have a substantial genetic component (Kozak et al., 2005). In a study of 612 Polish adult twin pairs, Kozak et al. (2005) found the following heritability coefficients for the coping styles: 35% for emotion-oriented coping, 34% for task-oriented coping, 33% for distraction and 39% for social diversion. On the other hand, the most significant limitation of the CISS theoretical model is that it encompasses only three coping categories while leaving out many other coping responses (cf. Schwarzer & Schwarzer, 1996), such as positive reinterpretation and humor.

Topological Models of Coping

Approach and avoidance coping by Roth and Cohen (1986). Approach and avoidance is one of the oldest distinctions and is widely used in stress psychology. Roth and Cohen (1986, p. 813) conceptualized approach and avoidance coping as "cognitive and emotional activity that is oriented either toward or away from threat." Roth and Cohen (1986) argued that the idea of approach and avoidance is fundamentally based on the processing of threatening information, with the construct

of sensitization vs. repression (Byrne, 1961) being its prototype (sensitization and repression involve a low and high threshold for anxiety-related stimuli, respectively). Roth and Cohen (1986) also referred to Miller (1987), who distinguished monitoring vs. blunting. The monitors seek threatening information, while the blunters tend to distract themselves from it. Sensitization and monitoring are oriented toward a stressor, whereas repression and blunting reflect an orientation away from it. In addition to the categories introduced by Byrne (1961) and Miller (1987), constructs similar to approach and avoidance include vigilance and avoidance (Cohen & Lazarus, 1973) as well as engagement coping and disengagement coping (Compas et al., 2001).

According to Roth and Cohen (1986), both types of coping have their benefits and costs. Approach coping produces adaptive action and results in the ventilation of negative emotions. Furthermore, approach coping strategies can lead to the assimilation of difficult experiences. On the other hand, approach can increase distress and promote unproductive worrying. In turn, avoidance strategies may result in adaptive outcomes by reducing tension and dosing threat-related information. These strategies provide time for assimilating stressful content and mobilizing resources to change the situation. Moreover, minimal use of avoidance coping may increase hope and courage. However, avoidance entails significant costs. It can hinder the actions that should be taken to solve the problem. It can also foster emotional numbness and intrusive thoughts. Avoidant strategies can prevent awareness of the casual relationship between a traumatic event and psychological symptoms, limiting the possibility of appropriate treatment. The most adaptive way of coping with stress should involve approach and avoidance with maximizing benefits and minimizing costs (Roth & Cohen, 1986). It should be underlined that the basic coping categories of approach and avoidance can be further subdivided into multiple subtypes (Roth & Cohen, 1986).

Conclusion and critique. Approach and avoidance is one of the most commonly used coping distinctions (e.g., Anshel et al., 2010; Finset et al., 2002; Herman-Stahl et al., 1995). Skinner et al. (2003) noted that the approach/avoidance concept can serve "as an antidote to widespread assumptions that the only adaptive response to stress is problem solving" (p. 228). Nevertheless, definitions of approach and avoidance are not sufficiently clear. For instance, emotional discharge is often considered avoidance coping (e.g., Ebata & Moos, 1991), but it may also be regarded as an approach strategy if the individual is oriented towards the experience induced by the stressor (Skinner et al., 2003).

Action Models of Coping

Primary, secondary and relinquished control (Band & Weisz, 1988; Rudolph et al., 1995). Rudolph et al. (1995) focused on how children cope with stress, especially during painful medical procedures. They argued that a complete description of a coping episode should include three elements: a coping response, a coping goal and an outcome. Rudolph et al. (1995) made a distinction between the stress response and the coping response. The former reflects an automatic emotional or behavioral reaction to stress, whereas the latter is understood as an "intentional physical or mental action, initiated in response to a perceived stressor, which is directed toward external circumstances or an internal state" (Rudolph et al., 1995, p. 329). The coping goal is conceptualized as the objective or intent of a coping response usually involving some reduction in the severity of stress or of the noxiousness of a stressor. Furthermore, the authors distinguished between stress outcomes (immediate results of stress responses not involving coping) and coping outcomes (results of volitional and deliberate coping efforts) (Rudolph et al., 1995).

Band and Weisz (1988) noted that problem- and emotion-focused coping are insufficient to describe coping in children. Band and Weisz (1988) as well as Weisz et al. (1994) applied the model of primary and secondary control (Rothbaum et al., 1982) to analysis of coping. Primary control is defined as "coping aimed at influencing objective conditions or events" and secondary control reflects "coping aimed at maximizing one's goodness of fit with conditions as they are" (Band & Weisz, 1988, p. 247). Furthermore, Band and Weisz (1988) recognized relinquished control, which is conceptualized as "no apparent goal-directed behavior and no apparent effort to enhance rewards or reduce punishments" (p. 248). The various types of control have their counterparts in coping goals.

Band and Weisz (1988) developed a structured interview investigating children's coping responses consisting of situational scenarios (e.g., separation from a friend, medical procedure). Primary, secondary and relinquished control items was derived from the theoretical model. The authors identified four strategies for primary control, five for secondary control and one for relinquished control (see Table 4). Importantly, coping responses and coping goals were assessed simultaneously. One coping response (e.g., crying) may reflect a primary control goal (e.g., crying to elicit instrumental support from others – problem-focused crying) or a secondary control goal (e.g., crying to release negative emotions – emotion-focused crying). The coefficients of inter-rater agreement (Kappa) obtained on the basis of three randomly selected children were above .80. The authors did not provide information about the internal structure of coping responses collected during the interview (Band & Weisz, 1988).

Table 4
Primary, Second ary and Relinquished Control Coping Strategies

Coping category	Definition
Primary control strategies	
Direct problem solving	Efforts to change stressful circumstances in an immediate way
Problem-focused crying	Crying to elicit instrumental assistance from others
Problem-focused aggression	Efforts to resolve problems through physical or verbal aggression
Problem-focused avoidance	Efforts to directly avoid experiencing a stressful situation (e.g., keep far away from a fight)
Secondary control strategies	
Social/spiritual support	Efforts to buffer distress through social or spiritual means (e.g., praying, seeking social support)
Emotion-focused crying	Crying to release pent-up feelings or to elicit comfort from others
Emotion-focused aggression	Physical or verbal aggression to release pent up feelings
Cognitive avoidance	Efforts to avoid thinking about a stressful situation (e.g., watching TV)
Pure cognition	Efforts to reduce stress through fantasy or a shift in one's way of thinking (e.g., daydreaming)
Relinquished control	
Doing nothing	Giving up or making no effort to deal with the stressful circumstances or to reduce their stressful impact

Note. Definitions based on Band & Weisz (1988, pp. 248–249).

Subsequently, Weisz et al. (1994) designed a structured interview for children with leukemia. The obtained indices of inter-rater agreement (Kappa) for 20 randomly selected children were above .80. Two of three intercorrelations between the overarching coping categories were substantial: primary control – secondary control (r = –.50), primary control – relinquished control (r = –.86), secondary control – relinquished control (r = –.02) (Weisz et al., 1994).

Conclusion and critique. While the idea of primary, secondary and relinquished control coping has inspired many authors (e.g., Connor-Smith et al., 2000; Hardy et al., 1993; Morling & Evered, 2006), this distinction has also met with criticism (Skinner et al., 2003). Both primary and secondary control are oriented toward a stressor and relinquished control is an only passive alternative. Therefore, other higher categories are necessary to distinguish between passive strategies, e.g., wishful thinking and avoidance (cf. Connor-Smith et al., 2000). Moreover, at least in some studies primary, secondary and relinquished control reveal strong intercorrelations (Weisz et al., 1994).

Assimilative coping and accommodative coping by Brandtstädter and Renner (1990). Brandtstädter and Renner (1990) distinguished two coping modes balancing gains and losses across developmental changes: assimilative coping (tenacious goal pursuit) and accommodative coping (flexible goal adjustment). The first is defined as "transforming developmental circumstances in accordance with personal

preferences" while the latter one involves "adjusting personal preferences to situational constraints" (Brandtstädter & Renner, 1990, p. 58). Assimilative and accommodative strategies are not mutually exclusive, but can be used simultaneously in the same stressful situations. According to the authors, assimilative tendencies are likely to predominate in the first phase of coping, and accommodative coping is triggered when assimilative efforts are ineffective (Brandtstädter & Renner, 1990).

Assimilative and accommodative tendencies are slightly similar to primary and secondary control or problem-focused and emotion-focused coping. However, the motivation underlying assimilative and accommodative strategies is not the desire to maintain control, but rather striving for consistency between actual and intended courses of development (Brandtstädter & Renner, 1990). The two constructs are measured with the scales Tenacious Goal Pursuit (TGP) and Flexible Goal Adjustment (FGA), with items generated on the basis of the theoretical model. The scales demonstrated satisfactory reliabilities (Cronbach's alphas ≥ .80) and were uncorrelated (Brandtstädter & Renner, 1990). The authors did not provide information about test-retest correlations.

Conclusion and critique. The idea of assimilative and accommodative coping has influenced other authors (Schmitz et al., 1996; Skinner et al., 2003). Skinner et al. (2003) preferred the term *assimilation* over *primary control* and *accommodation* over *secondary control*. They organized 12 families of coping according to three processes, with two referring to the concepts of assimilation and accommodation defined as: "adaptive processes that coordinate an individual's actions with the contingencies in the environment" (p. 246) and "adaptive processes that coordinate an individual's preferences with the options available in the environment" (p. 246), respectively. In their assessment of coping responses to pain, Walker et al. (1997) included accommodative coping as one of three broad categories encompassing acceptance, self-encouragement, minimizing pain and ignoring pain. According to those authors, accommodative coping strategies "enable the individual to adapt to unchangeable stressful conditions" (p. 393).

Furthermore, assimilative and accommodative coping strategies offer an interesting perspective on risk factors for depression (Brandtstädter & Rothermund, 2002) as depressive symptoms may result from an impaired ability to switch between them. Beside the loss of a valued goal, the inability to free oneself from unattained commitments can add to the severity and duration of depression (Brandtstädter & Rothermund, 2002). Despite many advantages, the distinction between assimilative and accommodative strategies is not comprehensive, leaving out forms of coping such as social diversion and confrontive coping.

Models with Blended Categories

Hierarchical model of responses to stress by Compas et al. (2001). The model of responses to stress developed by Connor-Smith et al. (2000) is based on three distinctions: voluntary vs. involuntary, engagement vs. disengagement and primary control vs. secondary control. The first one represents a first-order category including "responses to stress that involve volition and conscious effort by the individual and responses that are automatized and not under conscious control" (Compas et al., 2001, pp. 89–90). Compas et al. (2001) give four arguments for identifying voluntary vs. involuntary as categories of response to stress. First, according to the authors, this distinction makes it possible to overcome a very broad and inaccurate definition of coping which includes every person's reactions to stressful situations. Second, volitional and automatized responses differ in the way they are experienced (the first are under personal control and the latter are outside control). Third, conscious and unconscious responses to stress may appear at different stages of personal development. Fourth, volitional and involuntary processes are associated with different responses to interventions. Therapists often try to modify patients' maladaptive conscious cognitive processes and behaviors, but the modification of processes outside personal control is only indirect and possible to a limited extent (Compas et al., 2001).

The second level of the hierarchical model reflects engagement vs. disengagement. "Engagement coping includes responses that are oriented either toward the source of stress or toward one's emotions or thoughts," whereas disengagement coping involves "responses that are oriented away from the stressor or one's emotions or thoughts" (Compas et al., 2001, p. 92). The third level represents primary vs. secondary control. The former is interpreted as efforts aimed to change objective events or regulate one's emotions, while the latter refers to attempts to adapt to the environment (Compas et al., 2001).

Connor-Smith et al. (2000) divided both voluntary and involuntary responses to stress into subtypes involving engagement or disengagement, hypothesizing that voluntary engagement and disengagement can be further subdivided based on orientation towards either primary or secondary goals (Connor-Smith et al., 2000). Connor-Smith et al. (2000) identified four voluntary coping categories: primary control engagement coping (consisting of problem solving, emotional expression and emotional regulation), secondary control engagement coping (cognitive restructuring, positive thinking and acceptance), primary control disengagement coping (avoidance and denial) and secondary control disengagement coping (wishful thinking and distraction). Among involuntary responses, they distinguished involuntary engagement (containing rumination, intrusive thoughts, physiological arousal, emotional arousal and impulsive action) and involuntary disengagement (emotional numbing, cognitive interference, inaction and escape).

This hierarchical model can be assessed using the Responses to Stress Questionnaire (RSQ; Connor-Smith et al., 2000), which was designed to measure responses to recent stressors. The RSQ was developed using mainly top-down criteria – most items were generated on the basis of the theoretical model and some were adapted from other coping questionnaires. The properties of the RSQ were analyzed on three samples of adolescents. Some reliabilities for the lower-order scales were above .70, but most were lower, including a few very low (<.40). Cronbach's alphas for the higher-order factors were greater than .70 for most samples. The test-retest reliabilities were above .70 for nine out of the 21 lower-order categories, but lower for 12 categories. The test-retest correlations for four out of five higher-order factors were above .70 (Connor-Smith et al., 2000).

The structure of the whole hierarchical model was not investigated; it was split into voluntary and involuntary components, which were tested separately using CFA. Contrary to the conceptual model, analyses revealed deviations in the voluntary response model: wishful thinking had a strong loading on primary control disengagement and distraction had a strong loading on secondary control engagement. Primary and secondary control disengagement categories were combined into one disengagement factor. Thus, the authors found three voluntary response factors: primary control engagement coping, secondary control engagement coping and disengagement coping. The empirically verified hierarchical structure of coping responses is presented in Table 5. The model for voluntary coping exhibited a satisfactory fit to the data, which was better than that of alternative models (problem- vs. emotion-focused or engagement vs. disengagement coping). Engagement and disengagement coping were orthogonal (r = .13), but involuntary engagement and disengagement were strongly correlated (r = .90). The CFA model for involuntary responses to stress was adequately fitted to the data (Connor-Smith et al., 2000).

Table 5
Hierarchical Model of Responses to Stress by Connor-Smith et al. (2000)

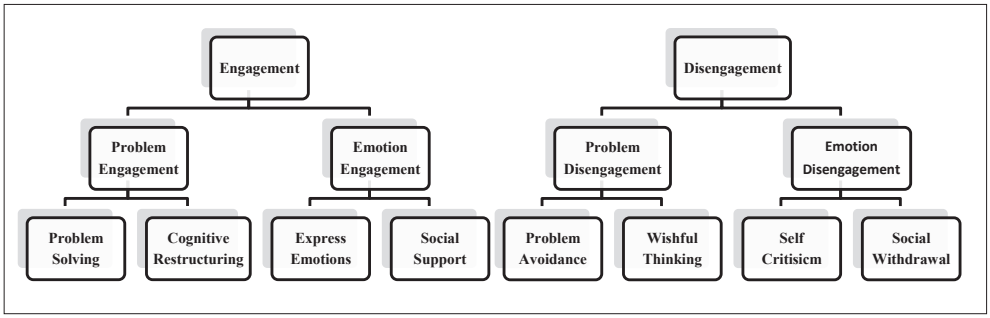
Higher coping category	Lower coping categories
Voluntary responses to stress	
Primary control engagement coping	Problem solving, emotional expression, emotional regulation
Secondary control engagement coping	Cognitive restructuring, positive thinking, acceptance, distraction
Disengagement coping	Avoidance, denial, wishful thinking
Involuntary responses to stress	
Involuntary engagement	Rumination, intrusive thoughts, physiological arousal, emotional arousal, impulsive action
Involuntary disengagement	Emotional numbing, cognitive interference, inaction, escape

Conclusion and critique. Skinner et al. (2003) noted that the classification of stress responses as solely volitional or involuntary is problematic. Many ways of coping,

including adaptive ones, such as problem solving, are to some extent automatized. On the other hand, numerous involuntary responses to stress may become more or less conscious over time or in different situations. Finally, some scale reliabilities were very weak and CFA was not conducted for the whole model.

The hierarchical model of coping by Tobin et al. (1989). Tobin et al. (1989) attempted to integrate two coping distinctions: approach vs. avoidance (e.g., Roth & Cohen, 1986) and problem-focused vs. emotion-focused coping (Lazarus & Folkman, 1984). The resulting model is hierarchical and consists of three levels: the highest represents two general categories (tertiary factors) of engagement and disengagement. Both categories encompass factors resembling problem-focused vs. emotion-focused coping, which gives four secondary factors (each containing two primary factors): problem engagement (composed of problem solving and cognitive restructuring), emotion engagement (express emotions and social support), problem disengagement (problem avoidance and wishful thinking) and emotion disengagement (self-criticism and social withdrawal) (Tobin et al., 1989). The hierarchical model of coping by Tobin et al. (1989) is shown in Figure 2.

Figure 2
Hierarchical model of coping by Tobin et al. (1989)



Source: own elaboration based on Tobin et al. (1989).

The model can be measured with the Coping Strategies Inventory (CSI; Tobin et al., 1989), which examines responses to a specific stressor. The CSI was developed using both top-down and bottom-up methods. The pool of items was derived from various sources: some from the WCCL (Folkman & Lazarus, 1980), others from open-ended questionnaires, structured interviews concerning responses to stress and brainstorming sessions with graduate students of clinical psychology. The properties of the CSI were evaluated across three independent samples. Cronbach's alphas for primary, secondary and tertiary scales were satisfactory (>.70) with all test-retest reliabilities above .60. The hypothesized structure was confirmed by means of hierarchical factor analysis (HFA; Wherry, 1984), which is now rarely used.

Conclusion and critique. The properties of the CSI were scrutinized using CFA (Rubio et al., 2016). In hierarchical CFA for the Spanish version of the CSI, the problem avoidance scale was problematic, but after removing two items from it the fit became satisfactory (Rubio et al., 2016). The hierarchical structure of coping was generally confirmed and reliabilities were acceptable. The proposal of Tobin et al. (1989) is interesting, but not comprehensive; it has no room for humor or social diversion.

Approach-avoidance and emotional equilibrium-disequilibrium by Gol and Cook (2004). According to Gol and Cook (2004), while the dimensions used in theoretical coping models and items from coping instruments can reflect the researchers' understanding of coping, their meaning for respondents may be vague. In order to comprehensively assess coping, Gol and Cook (2004) employed concept mapping, which involved item generation and sorting by participants (Trochim, 1989). The participants also filled out a questionnaire consisting of the same statements. The sorted items were subjected to cluster analysis and multidimensional scaling (MDS). Concept mapping yielded nine clusters located in the space defined by two dimensions: approach-avoidance and emotional equilibrium-disequilibrium (Gol & Cook, 2004). Approach-oriented coping involves, e.g., seeking the cause of the problem and attempting to change the situation, whereas avoidance-oriented coping includes distracting oneself from the problem (e.g., going out with a friend) and doing nothing. Emotional disequilibrium refers to an uncontrolled release of emotions and suppression of emotions, while emotional equilibrium corresponds to experiencing emotions in a calmer and more stable way (Gol & Cook, 2004).

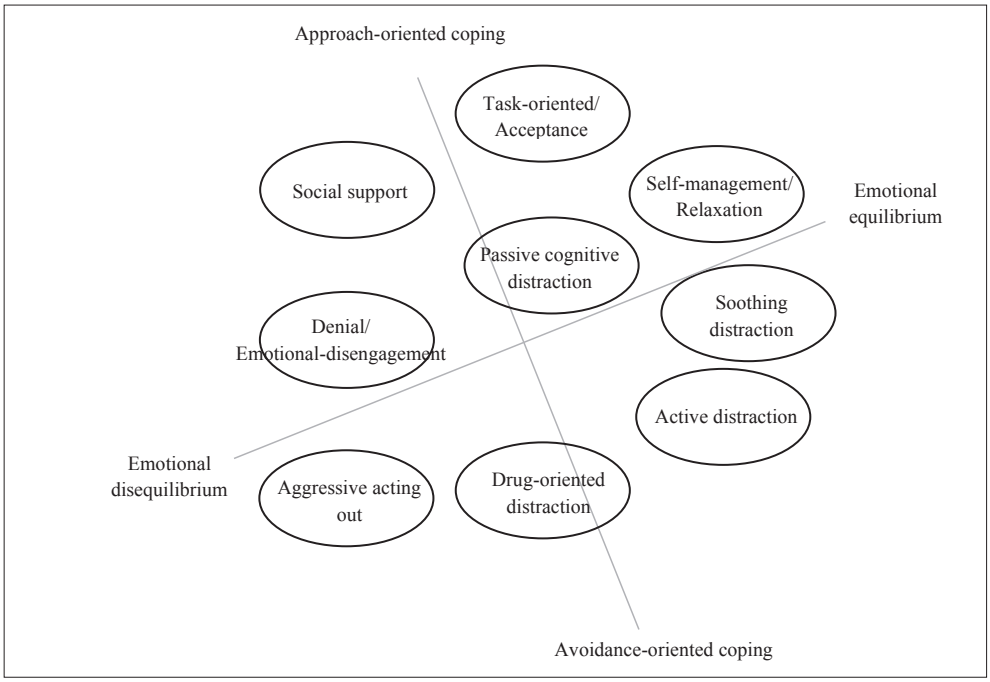
Except for one cluster (i.e., passive cognitive distraction) occupying the center of the concept map, the eight remaining clusters formed conceptual transitions from one to another (starting from the top cluster and moving in the counter-clockwise direction): task-oriented/ acceptance, social support, denial/emotional-disengagement, aggressive acting out, drug-oriented distraction, active distraction, soothing distraction and self-management/relaxation. Only two clusters evinced approach-oriented coping (i.e., task-oriented/acceptance and social support), with the others corresponding to avoidance-oriented coping (Gol & Cook, 2004). Table 6 presents the nine clusters with their definitions, while Figure 3 shows empirical spatial relations between the identified constructs. Five clusters demonstrated reliabilities equal to or above .70, but the internal consistency of four others was below .70 (Gol, 1994).

Table 6
The Definitions of Coping Clusters from Gol (1994)

Cluster	Definition
Task-oriented/acceptance	Problem-focused cognitive appraisal and solution-oriented items with acceptance of the problem
Social support	Seeking social interaction for advice, assistance, and/or understanding
Denial/emotional-disengagement	Disengaging or suppressing emotion
Aggressive acting out	Physically violent release of emotion towards others or inanimate objects
Drug-oriented distraction	Use of alcohol or other drugs to deal with problems
Active distraction	Physical or mental distraction from a problem without a soothing aspect
Soothing distraction	Focused on a calming, relaxing, inanimate focused distraction
Self-management/relaxation	Specific cognitive and behavioral interventions aimed at controlling emotions and increasing ability to focus cognitively
Passive cognitive distraction	Cognitively-oriented attempt to deny, escape or distract oneself

Note. Definitions were taken from Gol (1994; pp. 56 and 61).

Figure 3
Model of coping by Gol and Cook (2004)



Source: own elaboration based on Gol and Cook (2004).

Conclusion and critique. According to Gol and Cook (2004), emotional equilibrium-disequilibrium is a new dimension in the coping literature. On the other hand, the approach-avoidance distinction has been adopted by many authors (Anshel et al., 2010; Herman-Stahl et al., 1995; Roth & Cohen, 1986), but its interpretation by Gol and Cook (2004) seems interesting. In their seminal review of approach and avoidance coping, Roth and Cohen (1986) suggested that both types of coping can co-occur. In contrast, Gol and Cook (2004) conceptualized approach-oriented and avoidance-oriented coping as opposites, but in line with those authors who found that approach and avoidance formed one bipolar dimension (Finset et al., 2002). While the proposal of Gol and Cook (2004) is thought-provoking, it has some serious limitations: a small sample size (N = 51) and low reliabilities for some clusters.

Models of Coping with a Temporal Aspect

This section presents views on coping models with a temporal aspect: Aspinwall and Taylor's (1997) concept of proactive coping and Schwarzer's (2001) Proactive Coping Theory.

Proactive coping by Aspinwall and Taylor (1997). Aspinwall and Taylor (1997) conceptualized proactive coping as "efforts undertaken in advance of a potentially stressful event to prevent it or to modify its form before it occurs" (p. 417). It is different from coping with stress and anticipatory coping (Aspinwall & Taylor, 1997) in that coping with stress is aimed at managing specific demands appraised as taxing or overwhelming (Lazarus, 1993) and anticipatory coping involves preparation for the stressful consequences of an approaching event (Folkman & Lazarus, 1985). In turn, proactive coping involves the accumulation of general resources, and so it temporally precedes both coping and anticipatory coping. Moreover, proactive coping requires different skills than coping with specific stressors because proactive coping efforts are not directly related to a particular stressor, but rather aimed at building up general resources (Aspinwall & Taylor, 1997).

Proactive coping has important potential advantages. It can reduce the distress experienced during a stressful situation. Furthermore, the amount of resources needed to cope with stress is lower in its early stages. However, proactive coping also has some shortcomings. A distant stressor may be unclear and ambiguous, so initial coping efforts may be ineffective or may aggravate the problem. If a person makes preliminary coping efforts and the problem turns out to be different from the anticipated one, the individual may substantially deplete his or her resources when they are most needed.

Proactive Coping Theory by Schwarzer (2001). Coping modes can be distinguished using the time perspective of demands and the perceived certainty

of events. Schwarzer (2001; Schwarzer & Taubert, 2002) developed a system with four modes of coping: reactive, anticipatory, preventive and proactive.

Reactive coping is conceptualized as an "an effort to deal with a stressful encounter that has already happened or is still ongoing, with the aim to compensate for or to accept harm or loss" (Schwarzer, 2001, p. 405). The individual who uses this type of coping may adjust his or her goals to the situation or search for meaning in an experience. Reactive coping can include problem-focused, emotion-focused, or social-focused efforts (Schwarzer, 2001). What reactive copers need is "recovery self-efficacy," a resource involving the optimistic belief of being able to overcome failure (Schwarzer, 2001).

Anticipatory coping is defined as an "effort to deal with imminent threat" (Schwarzer, 2001, p. 405). It can involve solving the problem, seeking out social support, reinterpreting the situation, or distraction. Here, a useful resource is "specific coping self-efficacy" – the belief in one's own ability to deal successfully with a particular stressful situation.

Preventive coping can be conceptualized as an "effort to build up general resistance resources that result in less strain in the future (minimizing severity of impact), less severe consequences of stress, should it occur, and less likely onset of stressful events in the first place" (Schwarzer, 2001, p. 405). Preventive coping refers to a difficult situation that may or may not happen in the distant future. Such an event is perceived as a threat and elicits anxiety. Preventive actions require "general coping self-efficacy" and include the improvement of general resistance resources, skills and social networks.

Finally, proactive coping is defined as an "effort to build up general resources that facilitate promotion toward challenging goals and personal growth" (Schwarzer, 2001, p. 406). In proactive coping, demands are perceived as challenges and stress is appraised as *eustress*. Instead of managing risk, proactive individuals manage their own goals. Proactive coping gives rise to personal growth and improves life by expanding personal resources.

Preventive and proactive coping can be expressed in very similar activities (e.g., accumulation of resources, development of skills, etc.). The key difference is the motivation – a proactive person is moved to act not by threat but by the need for personal growth. Proactive individuals need "action self-efficacy," or the belief that they are able to initiate and sustain difficult courses of action (Schwarzer, 2001).

It should be noted that Schwarzer's conceptualization of proactive coping (Schwarzer, 2001; Schwarzer & Taubert, 2002) differs from that by Aspinwall & Taylor (1997) as the latter is closer to preventive rather than proactive coping in terms of Proactive Coping Theory (Schwarzer, 2001; Schwarzer & Taubert, 2002). Proactive and preventive coping constructs are measured by corresponding scales in the Proactive Coping Inventory (PCI, Greenglass et al., 1999). The items forming this measure were derived from an earlier version of the PCI (Greenglass &

Schwarzer, 1998) and the scales were created on the basis of Proactive Coping Theory in a top-down approach. The PCI was designed as a comprehensive measure of various forms of coping and consists of seven scales; in addition to proactive coping and preventive coping, these are reflective coping, strategic planning, instrumental support seeking, emotional support seeking and avoidance coping (Greenglass et., 1999). The PCI revealed good internal validity, and all scales except for avoidance coping had satisfactory reliabilities (Cronbach's α >.70) (Greenglass et., 1999).

Conclusion and critique. The idea of future-oriented coping (Aspinwall & Taylor, 1997; Schwarzer, 2001; Schwarzer & Taubert, 2002) enriches stress psychology, and indeed both proactive and preventive coping constructs have been widely studied (Gan et al., 2010; Greenglass & Fiksenbaum, 2009; Ouwehand et al., 2006; Straud et al., 2015). Nevertheless, in the literature there is a debate about the distinction between the two, and also about the general factor structure of the PCI (Almássy et al., 2014; Drummond & Brough, 2016; Renard & Snelgar, 2013; Roesch et al., 2009). In some studies scrutinizing the seven-factor structure of the PCI, the fit of the CFA model was unacceptable (Almássy et al., 2014). Other researchers found that while the seven-factor model had a good fit, three factors represented the data more parsimoniously. Those three factors were logical analysis/problem solving (consisting of proactive coping, preventive coping, reflective coping and strategic coping), social support and avoidance (Roesch et al., 2009). Renard and Snelgar (2013), who performed analysis on the scales omitting avoidance, obtained two factors identical to logical analysis/problem solving and social support. As can be seen, in both investigations proactive coping and preventive coping formed one construct (Renard & Snelgar, 2013; Roesch et al., 2009). Others authors focused only on proactive and preventive coping and excluded other scales. Drummond and Brough (2016) revealed that proactive and preventive coping were distinct constructs, but their relationships with external criteria were inconsistent between the samples. It seems that the current state of knowledge is insufficient to unambiguously determine the relationship between proactive and preventive coping.

Models of Social Forms of Coping

Coping has often been studied from an individual perspective, albeit numerous authors have emphasized the importance of a social orientation in coping (e.g., Berg et al., 1998; Bodenmann, 1997; Lyons et al., 1998). There are many possible relationships between the individual, other people and the stressor. For instance, other people can be stressors which may require specific coping strategies, such as coping with discrimination (Wei et al., 2010) and coping with sexual harassment (Malamut & Offermann, 2001). However, other people can also provide social

support, which is a resource that facilitates coping with stress (Boyd, 2002; Ozbay et al., 2007; Prati & Pietrantoni, 2009).

Some social responses to stress, i.e., seeking social support, have been interpreted in different ways (Connor-Smith et al., 2000; Parker & Endler, 1992). Parker and Endler (1992) argued that social support is a social resource that can be used in conjunction with various coping strategies, but not a distinct coping category. A slightly different position on that issue was presented by Connor-Smith et al. (2000), according to whom social support may be available for many reasons. They included items referring to social support on different scales, such as problem solving, emotional regulation and emotional expression (Connor-Smith et al., 2000). Similarly, Skinner et al. (2003) noted that all individual coping responses may have social equivalents. However, some models adopt a social perspective as fundamental and useful. Below are presented two approaches focusing on the social aspect: communal coping (Lyons et al., 1998) and dyadic coping (Bodenmann, 1997).

Communal coping by Lyons et al. (1998). Communal coping is conceptualized as a "process in which a stressful event is substantively appraised and acted upon in the context of close relationships" (Lyons et al., 1998, p. 583). Communal coping can be distinguished from other forms of coping using the appraisal dimension (the problem is perceived as shared vs. individual) and the action dimension (coping attempts engaging partners vs. individualistic). Therefore, four combinations are possible:

- individualistic coping orientation – the person perceives the problem as one's own and makes individual efforts to cope with it;
- communal coping – the difficult situation is appraised as shared and coping attempts involve person and others;
- individual help/support provision – the problem is defined as *common*, but efforts to deal with the stressor are handled by only one individual (e.g., the spouse of a person with dementia);
- help/support seeking – the problem is perceived as *mine*, but the individual mobilizes others to receive support.

Dyadic coping by Bodenmann (1997). Dyadic coping is understood as a "process in which the stress signals of one partner and the coping reactions of the other partner to these signals (both verbal and nonverbal) are taken into consideration" (Bodenmann, 1997, p. 138). Dyadic coping is aimed to maintain homeostasis between partners. A couple is interpreted as a unit in which the well-being of one partner is strongly determined by that of the other. Therefore, both partners should have a tendency to support each other in coping attempts. It is worth noting that this is not altruism; indeed, efforts to help one's spouse are aimed at diminishing one's own perceived strain (Bodenmann, 1997). The following forms of dyadic coping are postulated by the model:

- common (joint) dyadic coping – both partners make attempts to deal with the problem together (e.g., joint problem solving, joint relaxation exercises);
- supportive dyadic coping – one partner provides instrumental or emotional support to the other;
- delegated dyadic coping – one partner takes over some tasks of the other one in order to relieve that person from stress;
- ambivalent coping – one partner helps the other in dealing with the stressor, but has low motivation or assumes that support is unnecessary;
- hostile dyadic coping – stress signals from one person evoke hostile reactions from the other;
- superficial dyadic coping – superficial instrumental or emotional support (Bodenmann, 1997).

Importantly, ambivalent coping, hostile dyadic coping and superficial dyadic coping form one construct – negative dyadic coping. The aforementioned types of coping are measured with the Dyadic Coping Inventory (DCI; Bodenmann, 1997), which was developed using top-down criteria. In addition to coping scales, the DCI also contains scales of stress communication and evaluation of dyadic coping (quality of self-perceived dyadic coping). Respondents are asked about their own coping and their perceptions of their partner's supportive, delegated and negative dyadic coping as well as stress communication. The structure of dyadic coping was replicated in another German-speaking sample as well as in Italian- and French-speaking groups, although satisfactory reliabilities (Cronbach's alpha >.70) were found only for the original German version of the DCI (Ledermann et al., 2010).

Conclusion and critique. Communal coping and dyadic coping acknowledge that coping can be a communal process, which appears to be neglected by many other authors (Compas et al., 2001; Endler & Parker, 1990a; Lazarus & Folkman, 1984; Roth & Cohen, 1986). Dyadic coping is a useful construct as it is consistently associated with relationship satisfaction (Falconier et al., 2015). On the other hand, it seems that dyadic coping can be confounded with the dyadic system type, e.g., as conceptualized by Olson (2000). Some items from the scales of family and couple system type are similar to the DCI. Examples include items from the balanced flexibility scale: "Our family tries new ways of dealing with problems" or "When problems arise, we compromise" (Olson et al., 2004). In turn, the endorsement of a statement from the DCI, e.g., "We try to cope with the problem together and search for practical solutions" (Bodenmann, 1997) is ambiguous as it is not clear whether such a response to stress reflects coping or is an indicator of a couple system present in various non-stressful situations.

Problems in Coping Research

In 2000 there was a debate in *American Psychologist* about the state of coping research and stress psychology (Coyne & Racioppo, 2000; Folkman & Moskowitz, 2000; Lazarus, 2000; Somerfield & McCrae, 2000; Tennen et al., 2000). Tennen et al. (2000) emphasized the usefulness of designs employing within-person process methods in studying responses to stress over time. On the other hand, Folkman and Moskowitz (2000) claimed that the limited progress in stress psychology is due to ignoring positive emotions in stressful transactions. According to Somerfield and McCrae (2000), researchers should not have excessive expectations as to the construct of coping. They observed that in some situations individuals have limited possibilities to choose a coping strategy. Moreover, coping is strongly affected by personality traits. They postulated that one-time studies using omnibus questionnaires should be replaced with longitudinal designs embedded in context (Somerfield & McCrae, 2000). However, it should be noted that associations between coping and personality have been found to be low to moderate (Connor-Smith & Flachsbart, 2007).

Coyne and Racioppo (2000) presented a very critical image of coping research: "there is a profound crisis in the existing descriptive research using standardized checklists, stemming from its chronic failure to produce credible, substantive findings that cannot be dismissed as truisms, trivia, or the product of a confounding of stress, coping, and distress" (p. 656). According to those authors, that could be remedied by focusing research on well-defined situations, where the number of possible coping responses is limited and criteria for coping outcomes are clear. They blame "omnibus checklists" (such as the WCQ) for limited progress in stress psychology. "Hundreds of studies have established that use of this instrument is unlikely to yield findings of substantive importance and that the risk of confounded and otherwise spurious results is high" (p. 659).

According to Lazarus (2000), Coyne and Racioppo's critique (2000) is overdrawn. While questionnaire methods have some limitations (e.g., studying unconscious processes is problematic), they can be useful, especially in the initial stages of research. Lazarus (2000) emphasized that the psychometric approach enables the use of large samples and the quantification of coping, which has benefits for stress psychology. The acknowledgement of the role of positive emotions in stressful transactions (Folkman & Moskowitz, 2000) is promising. He noted that the number of sophisticated studies is increasing and "the field of coping research is maturing" (Lazarus, 2000, p. 673).

There is a large body of critique against coping theory and methods, and many issues are debatable. The following paragraphs present the basic assumptions of coping models, problems with coping structure, confounding items in coping instruments, difficulties with the integration of coping and emotion regulation

processes, as well as specific problems referring to processual and structural approaches in coping studies.

Basic assumptions of coping models. As already mentioned, there are a large number of coping models and naturally they are based on widely differing assumptions. Most coping models adopt a functional perspective, an action theory or a "topological" perspective (i.e., approach and avoidance). The first two correspond to influential theoretical approaches in psychology and are discussed at length in the context of goal-directed and emotion-elicited coping.

It is obvious that the same coping act may have different intentions, e.g., one can seek information about the stressor to calm down, but it may also facilitate problem solving. Therefore, it is not surprising that many authors claim that knowledge of coping goals is necessary for the interpretation of coping acts (Band & Weisz, 1988; Coyne & Racioppo, 2000; Schwarzer & Schwarzer, 1996). According to Schwarzer and Schwarzer (1996), to determine the hierarchy of coping one needs to identify coping intentions (cf. Leventhal et al., 1993). Skinner et al. (2003) pointed out that "ways of coping are *not* functions. They are action types that *have* functions" (p. 227). They further argued that action theories provide very useful solutions in the field of coping research (e.g., in the identification of coping structure; Skinner et al., 2003). Some coping taxonomies and measures, and especially those developed within the framework of action theory (e.g., Band & Weisz, 1988) acknowledge the role of coping goals.

On the other hand, functional coping models usually focus on a description of coping activity with reference to its functions, omitting the reasons why the activity is undertaken. Interestingly, there is a growing body of literature claiming that coping can also be a reactive response not induced by goals, but rather directed by emotions (e.g., Carver & Scheier, 1994; Gruszczyńska, 2013), in which case a functional approach seems to be more appropriate. In short, the functional perspective ignores coping goals, and action theories do not include coping responses that are not directed by goals. One must not underestimate the contribution of both approaches to psychology, but their limitations are quite obvious. Indeed, stress psychology needs a model recognizing that coping can be both a reflective, goal-oriented action and a reactive, emotion-induced response.

Problems with coping structure. The next serious problem is a lack of consensus about the structure of coping (Compas et al., 2001; Skinner et al., 2003). The two most popular higher-order coping categories, that is, problem- and emotion-focused coping (Compas et al., 2001; Lazarus, 1996; Skinner et al., 2003) and approach and avoidance (Skinner et al., 2003), have been criticized. Moreover, researchers have pointed out that coping measures reveal problems with the replication of structure across samples (Compas et al., 2001; Schwarzer & Schwarzer, 1996; Skinner et al., 2003; Sveinbjornsdottir & Thorsteinsson, 2008) and it is difficult

to apply the same coping categories across different questionnaires and samples (cf. Compas et al., 2001; Skinner et al., 2003). A detailed comparison of coping scales is needed to determine whether the findings obtained thereby can be aggregated. A lack of agreement on core coping categories hinders the consolidation of knowledge, which has been recognized by the authors of several reviews (Christensen & Kessing, 2005; Nicholls & Polman, 2007; Zimmer-Gembeck & Skinner, 2011).

At least part of this problem is attributable to item quality and selection (cf. Compas et al., 2001). In their meta-analysis of associations between coping and health, Penley et al. (2002) suggested that WCQ and WCCL items do not encompass a wide range of coping responses. According to these authors, this is reflected in an unstable factor structure and different assignments of the same items. An individual can use one item, e.g., "I tried not to act too hastily or follow my first hunch" in facilitating problem solving efforts or regulating emotions and actions. In fact, while this item loaded problem-focused coping in a study of Folkman and Lazarus (1985), it measured self-controlling coping in a work of Folkman et al. (1986). It should be noted that self-controlling and planful problem-solving (which is very similar to problem-focused coping) are weakly correlated (r = .37) (Folkman et al. 1986).

Confounding items in coping instruments. Many authors have noted that some coping measures include items which may be confounded with distress or psychopathology (Compas et al., 2001; Coyne & Racioppo, 2000; Stanton et al., 1994), appraisal and resources (Schwarzer & Schwarzer, 1996), coping goals (Compas et al., 2001; Coyne & Gottlieb, 1996), or outcomes (Coyne & Gottlieb, 1996). Researchers have observed that some items refer to coping results, such as the one from the WCQ (Folkman & Lazarus, 1985): "I changed or grew as a person in a good way" (Coyne & Gottlieb, 1996). Indeed, in the case of a number of statements it is difficult to unambiguously decide whether they reflect solely coping or also an outcome, e.g., "I laugh about the situation" (humor, COPE; Carver et al., 1989), "I accept that this has happened and that it can't be changed" (acceptance, COPE), or "I learn something from the experience" (positive reinterpretation and growth, COPE). It seems that the possibility to separate some strategies from their outcomes is limited (e.g., acceptance vs. reconciliation with loss). Lazarus et al. (1985) posited that a degree of confounding is inevitable and trying to remove the overlap between the various elements of a stressful transaction can lead to oversimplification.

According to Schwarzer & Schwarzer (1996), of major importance is the risk of confounding coping measures with appraisal and resources (e.g., dispositional optimism, self-efficacy). For instance, when a situation is appraised as a loss, the individual may use reinterpretation to moderate the perceived loss. Then, coping and appraisal cannot be distinguished in practice. Similarly, in some cases it is impossible to make a distinction between coping and resources. For example, an optimistic

statement can evince dispositional optimism or indicate how the person copes with stress (Schwarzer & Schwarzer, 1996).

Compas et al. (2001) pointed out to an overlap between coping items and distress. At the same time, in a paper by Connor-Smith et al., 2000 (which Compas co-authored) the RSQ included among involuntary stress responses, e.g., the rumination scale (sample item: "When problems with my family come up, I can't stop thinking about how I am feeling") and the intrusive thoughts scale (sample item: "When we're having problems getting along, I can't stop thinking about the problems when I try to sleep, or I have bad dreams about them"). However, it should be remembered that, according to Compas et al. (2001) and Connor-Smith et al. (2000), involuntary responses to stress are not regarded as coping.

Coyne and Racioppo (2000) posited that the relationship between emotion-focused coping and distress is one of the most consistent findings in coping research. Indeed, in virtually all studies using CISS emotion-oriented coping or COPE focus on and venting of emotions, these scales are correlated with maladjustment (Stanton et al., 2002). On the other hand, some techniques (e.g., expressing emotions), which might be regarded as emotion-focused coping, are related to health and other adaptive outcomes (Frattaroli, 2006; Harris, 2006; Pennebaker & Beall, 1986; Zhou et al., 2015).

Stanton et al. (1994) gave three hypothetical explanations for this state of affairs. First, the emotion-focused coping scales are confounded by self-depreciation or distress; for example, "I get upset and let my emotions out" (Carver et al., 1989), which inflates the association between coping and outcome. Second, these scales lack items related to acknowledging, understanding and expressing emotions. Third, since emotion-focused coping encompasses various coping responses, from approach to avoidance, some of these are negatively correlated (e.g., Scheier et al., 1986).

To overcome the above limitations, Stanton and colleagues conceptualized emotional approach coping as a construct including emotional processing and emotional expression (Austenfeld & Stanton, 2004; Stanton et al., 1994) and developed an operationalization of this construct uncontaminated by distress (Stanton et al., 1994). In this model, emotional processing reflects "active attempts to acknowledge, explore meanings, and come to an understanding of one's emotions" (Austenfeld & Stanton, 2004, p. 1342) with sample items being "I acknowledge my emotions," "I realize that my feelings are valid and important," and "I delve into my feelings to get a thorough understanding of them." In turn, emotional expression refers to "active verbal and/or nonverbal attempts to communicate or symbolize one's emotional experience" (Austenfeld & Stanton, 2004, p. 1342) with sample items being "I feel free to express my emotions," "I take time to express my emotions," and "I allow myself to express my emotions."

However, this proposal of emotional approach coping is also fraught with some problems. First, items from emotional approach coping scales are very general,

they refer to *emotions*, and they may sound abstract. People do not experience *emotions*, but states with positive or negative valence. It might be presumed that respondents can interpret such items differently depending on the situation or individual differences. Second, individuals endorsing such items may think about anger, excitation, or mixed emotional states, which was acknowledged by Stanton et al. (1994). Third, the relationship between distress and emotional approach coping is not clear (Stanton & Low, 2012). Stanton et al. (1994) found that emotional approach coping "is beneficial under specific conditions" (p. 350), while in other cases it can be maladaptive (Stanton & Low, 2012). Some moderators have been found and others are yet to be verified (Stanton & Low, 2012).

As mentioned above, it is necessary to include a broader spectrum of positive emotional regulation items in coping inventories (Compas et al., 2001; Stanton et al., 1994) and recognize the role of positive emotions in stressful situations (Folkman, 2008; Folkman & Moskowitz, 2000). The contradictory results concerning the positive and negative consequences of endorsing strategies regarded as emotion-focused should be explained (Coyne & Racioppo, 2000; Stanton et al., 1994). Finally, the coping construct is integrated with emotion regulation processes only to a very limited extent (e.g., Compas et al., 2017).

Coping and emotion regulation processes. While coping and emotion regulation are distinct categories, they reveal meaningful commonalities (Compas et al., 2017). Emotion regulation can be defined as "the extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions, especially their intensive and temporal features, to accomplish one's goals" (Thompson, 1994, pp. 27–28). The shared feature of coping and emotion regulation is that they are both regarded as regulatory processes (e.g., Compas et al., 2017). Some categories are included both in coping strategies and emotion regulation processes, e.g., reappraisal, acceptance, problem solving, rumination and avoidance (Aldao et al., 2010; Skinner et al., 2003). However, despite numerous similarities, coping and emotion regulation are distinct constructs. Coping refers to processes elicited by a stressor, whereas emotion regulation processes are activated both in stressful situations and during normal daily experiences. Both coping and emotion regulation are very useful, e.g., in predicting the risk of psychopathology, but there is limited possibility of integrating these two constructs (cf. Compas et al., 2017). Nevertheless, it seems that a comprehensive model of coping structure should be developed to elucidate the links between coping and emotion regulation.

Specific problems with coping. This section outlines other problems related to coping research, such as theoretically meaningful prediction of external variables using the coping construct, coping effectiveness depending on situational conditions and the mechanisms underpinning interventions aimed at coping improvement.

It is often reported that some external variables (e.g., mental health indicators) are quite consistently related to the configuration of specific constructs distinguished in a given model, but this combination cannot be directly predicted by the theoretical model. For example, in some studies distress is associated with a configuration of three CISS categories (Endler & Parker, 1990a): the low task-oriented style, the high emotion-oriented style and high distraction (a subscale of the avoidance-oriented style), with this particular combination labeled "maladaptive coping" (Dunkley & Blankstein, 2000). However, in the study of Dunkley and Blankstein (2000) the latent variable of maladaptive coping exhibited a strong loading only for emotion-oriented coping. Other studies have indicated a positive correlation of state anxiety with emotion-oriented coping (Cohan et al., 2006; McWilliams et al., 2003) and distraction, as well as its negative correlation with task-oriented coping (Cohan et al., 2006). Depression has been found to be associated with emotion-oriented coping (Cohan et al., 2006; McWilliams et al., 2003) and inversely with task-oriented coping (Cohan et al., 2006). In agreement with Dunkley and Blankstein (2000), other authors have demonstrated that, among the CISS styles, emotion-oriented coping reveals the strongest correlation with distress (Cohan et al., 2006; Leandro & Castillo, 2010; McWilliams et al., 2003). However, the fact that the configuration of three CISS variables predicting distress cannot be simply derived from the Endler and Parker model (1990a) suggests the existence of a new coping category.

Likewise, in some other measures one external variable is associated with more than one coping category. For instance, self-esteem is correlated with at least five of the 15 constructs included in the COPE (Carver et al., 1989; Gudjonsson & Sigurdsson, 2003; Scheier et al., 1994): positively with active coping, planning and positive reinterpretation and growth, and negatively with denial and behavioral disengagement. Active coping and planning have been classified as problem-focused coping (Litman, 2006; O'Connor & O'Connor, 2003), task coping (Kallasmaa & Pulver, 2000) or the active factor (Stowell et al., 2001), whereas denial and behavioral disengagement have been associated with avoidant coping (Kallasmaa & Pulver, 2000; Litman, 2006; O'Connor & O'Connor, 2003; Stowell et al., 2001). In turn, positive reinterpretation and growth has been linked to cognitive reconstruction (O'Connor & O'Connor, 2003) or active coping/rational coping (Lyne & Roger, 2000; Stowell et al., 2001).

It is not known why self-esteem is correlated with the aforementioned coping categories. In addition, different authors may assign the same coping constructs to different higher order categories (Carver et al., 1989; Kallasmaa & Pulver, 2000; Litman, 2006; O'Connor & O'Connor, 2003; Stowell et al., 2001). The relationship between self-esteem and the COPE constructs as well as between distress and the CISS scales cannot be easily explained within the existing basic coping categories. Currently, it seems impossible to elucidate the general mechanism

of associations between coping and external variables (e.g., self-esteem) and to test it irrespective of the instruments used.

The next problem concerns the effectiveness of the coping strategies used with regard to situational variables (cf. Lazarus & Folkman, 1984). While in some studies problem-focused coping was positively related to distress in uncontrollable situations (e.g., Terry & Hynes, 1998), in other investigations the correlation was negative under similar conditions (e.g., Taylor et al., 2008). These contradictory findings cannot be reconciled using the current approaches.

Finally, there is a gap between coping theory and practice (Coyne & Racioppo, 2000). At least some interventions aimed at coping improvement seem to be effective (e.g., Steenkamp et al., 2015), but their mechanisms are perplexing. Little is known about the essential elements of change under intervention and barriers to development (Coyne & Racioppo, 2000). It seems impossible to solve at least some of the above problems without a theoretical model integrating the various coping constructs. The development of a comprehensive model of coping structure is a challenge worth pursuing, even if the path leading to it is fraught with difficulties.

Chapter 3.
Theoretical Basis of the Coping Circumplex Model[2]

Abstract. This chapter presents the Coping Circumplex Model (CCM), which is a theoretical proposal designed to systematize diverse coping constructs. The CCM is based on the bipolar dimensions of Problem coping and Emotion coping as well as on the idea of a circumplex continuum of coping styles. The CCM is based on the assumption that in stressful situations individuals can have two major goals: instrumental (i.e., solving the problem at hand) and hedonic (i.e., they need to regulate their emotions). The two goals correspond to two dimensions: Problem coping and Emotion coping. These dimensions define a space for coping categories within the circumplex. The CCM contains eight coping styles: Problem solving, Problem avoidance, Positive emotional coping, Negative emotional coping, Optimistic action, Pessimistic passivity, Preoccupation with the problem and Hedonic disengagement. After presenting the CCM coping styles, their relati onships with selected coping models are discussed.
Keywords: *Coping with stress, Coping style, Coping strategy, Coping mode,* Coping *Circumplex Model, Circumplex Model, Structure of coping*

Defining the Concept of Coping

As noted in the previous chapter, coping can be conceptualized as intentional and conscious responses to stress (e.g., Compas et al., 2001), intentional conscious or unconscious responses to stress (e.g., Lazarus & Folkman, 1984), or both intentional and automatized responses to stress (e.g., Skinner & Wellborn, 1994).

2 The following sections contain extensive and slightly modified passages from Stanisławski (2019): "Defining the Concept of Coping," "Problem Coping and Emotion Coping," Concepts of Coping Strategy and Coping Mode," "Coping Style Definition," "The Coping Circumplex Model," "Problem Coping: Problem Solving vs. Problem Avoidance," "Emotion Coping: Positive Emotional Coping vs. Negative Emotional Coping," "Efficiency vs. Helplessness," "Preoccupation with the Problem vs. Hedonic Disengagement," "The Prospect of Integrating Various Coping Constructs within the CCM."

In accordance with the third approach, the presented theoretical model adopts the broad view that coping refers to both volitional and automatic cognitive, emotional, and behavioral responses to stress.

Therefore, in contrast to many authors claiming that coping is a purposeful activity (Compas et al., 2001; Lazarus & Folkman, 1984; Rudolph et al., 1995; Snyder & Pulvers, 2001), the presented model assumes that although coping can be a manifestation of goal-oriented efforts, there is convincing evidence that at least some coping strategies might be reactive responses induced by emotions, and especially negative ones (Carver & Scheier, 1994; Gruszczyńska, 2013) under conditions of severe stress (Heszen, 2011, 2013). There are three other arguments for defining the concept of coping as including both volitional and automatic responses to stress:

1. It is difficult to decide unequivocally whether a given response to stress is conscious or automatic (cf. Coyne & Gottlieb, 1996; Skinner et al., 2003; Snyder & Pulvers, 2001). According to Skinner et al. (2003), one stress response can be more or less conscious or automatic under different circumstances. Moreover, deliberate behavior can become more automatic with repetition (Snyder & Pulvers, 2001). Snyder and Pulvers (2001) noted that consciousness itself is a vague concept, criticizing its application in coping definitions: "Consciousness as judged by whom? And what is it?" (p. 5).
2. It is problematic or downright impossible to determine which items on coping measures refer to deliberate or automatic responses to stress (Coyne & Gottlieb, 1996); for example: "I sleep more than usual" from the COPE (Carver et al., 1989) and "Become very upset" from the CISS (Endler & Parker, 1990a).
3. The removal of involuntary responses from coping research would place those variables in the area of unexplained variation, which would impede a more comprehensive account of the relationship between coping and its outcomes (cf. Coyne & Gottlieb, 1996).

As shown above, it is reasonable to regard both volitional and automatic responses to stress as coping, but other elements of the definition also require some comment. Similarly to the one presented above, some coping conceptualizations contain cognitive, emotional, and behavioral components (e.g., Snyder & Pulvers, 2001), but many definitions encompass cognitive and behavioral elements to the exclusion of emotions (e.g., Aldwin & Revenson, 1987; Billings & Moos, 1981; Lazarus & Folkman, 1984; Pearlin & Schooler, 1978). The arguments for including all three types of responses in the concept of coping are as follows. First, cognitive and emotional processes are strongly interdependent on the psychological (Pessoa, 2008; Storbeck & Clore, 2007) and neurobiological levels (Duncan & Barrett, 2007). Second, some items on coping measures correspond not so much to cognitive and behavioral activities, but to emotional responses to stress, e.g., "I get upset and let my emotions out" from the COPE (Carver et al., 1989), "I let my feelings out somehow" from the WCQ (Folkman et al., 1986). It therefore seems that the presented

definition of coping is simple and consistent with the current state of knowledge about stress psychology.

Problem Coping and Emotion Coping

In stressful situations individuals can have two major and relatively independent goals: an instrumental one (i.e., solving the problem at hand) and a hedonic one (i.e., regulation of emotions; cf. Lazarus & Folkman, 1984; Tamir, 2009), which correspond to two dimensions: Problem coping (solving or avoiding the problem) and Emotion coping (regulating one's emotions under stress through eliciting positive or negative emotions). These dimensions are similar to problem-focused coping and emotion-focused coping from the processual approach developed by Lazarus and Folkman (1984), but they also take into account the criticism leveled against it (e.g., Skinner et al., 2003).

It seems that the identified coping goals require some comment. While the motivational value of positive emotions is clear, the elicitation of negative emotions can also be beneficial. Tamir (2009) posits that people want to experience unpleasant feelings when they could facilitate the attainment of long-term goals. For example, a configuration of a high instrumental goal (i.e., solving the problem) and a high hedonic one (i.e., elicitation of positive emotions) reflects proactive coping (Schwarzer, 2001), whereas a combination of a high instrumental goal (i.e., solving the problem) and a low hedonic one (i.e., elicitation of negative emotions) resembles some form of preventive coping (cf. Schwarzer, 2001). It seems that the instrumental and hedonic goals of emotion regulation identified by Tamir (2009) and interpreted in the current paper as two relatively independent and bipolar goals of coping can optimally describe the motivational underpinning of various forms of coping.

Problem coping and Emotion coping, corresponding to instrumental and hedonic goals, may be connected to the two bipolar dimensions introduced by Gol and Cook (2004), defining the space for locating coping categories. These dimensions are approach-avoidance and emotional equilibrium-disequilibrium. Approach-oriented coping stands for, e.g., cognitive efforts aimed at finding a solution to the problem, understanding its causes, and accepting it, while avoidance-oriented coping implies distracting oneself from the stressor. Emotional disequilibrium involves an uncontrolled release of emotions and suppressing emotions, whereas emotional equilibrium includes strategies of emotion control, relaxation, and calming down (Gol & Cook, 2004).

Similarly, a notion of bipolarity of coping dimensions was adopted by Finset et al. (2002) as well as Livneh et al. (2000). Finset et al. (2002), who used the Brief Approach/Avoidance Coping Questionnaire (BACQ), a dispositional inventory, found that approach and avoidance form one bipolar dimension. In their proposal,

approach represents efforts to solve the problem, seeking social support, and optimism toward the problem, while avoidance is associated with resignation and withdrawal (Finset et al., 2002). Interestingly, Livneh et al. (2000), who analyzed the dispositional Brief COPE as well as selected scales from Tobin et al. (1989), identified active/confrontive vs. passive avoidance coping – a bipolar factor resembling the aforementioned approach-avoidance dimension (Finset et al., 2002). One pole of that factor includes active coping, planning, positive reframing and acceptance, whereas the opposite one contains substance use, self-criticism, and social withdrawal. Presumably, approach vs. avoidance from Finset et al. (2002) and active/confrontive coping vs. passive avoidance from Livneh et al. (2000) are similar to approach-oriented coping/emotional equilibrium vs. avoidance-oriented coping/emotional disequilibrium, respectively, from Gol and Cook's (2004) model. Indeed, the findings reported by Finset et al. (2002) and Livneh et al. (2000) partially corroborate Gol and Cook's (2004) proposal.

In reference to Gol and Cook's (2004) model, Problem and Emotion coping may be interpreted as two bipolar dimensions. A high level of Problem coping denotes Problem solving (implying active cognitive and behavioral efforts to solve the problem causing the distress), whereas low Problem coping indicates Problem avoidance (avoiding thinking about the problem and reduced efforts to deal with the stressor). The individual may regulate emotional responses to the problem via Positive emotional coping (e.g., using humor or reinterpretation) or Negative emotional coping (e.g., focusing on negative emotions, rumination). A high level of Emotion coping is synonymous with Positive emotional coping, while the opposite is indicative of Negative emotional coping.

The Emotion coping dimension should reflect the issues articulated in the literature, e.g., "broadening models of stress and coping to include positive as well as negative affect will change the kinds of questions psychologists ask about coping" (Folkman & Moskowitz, 2004, p. 652). Furthermore, Emotion coping corresponds to one of the two general activation systems of affect, that is, negative activation (Watson & Tellegen, 1985; Watson et al., 1999). High negative activation refers to fear, hostility, and guilt, whereas low negative activation includes serenity and calmness (Watson et al., 1999). Therefore, Negative and Positive emotional coping correspond to high and low levels of negative activation, respectively. Moreover, Emotion coping can be related to a combination of two dimensions from the circumplex model of affect: valence and arousal (Heller, 1990; Russell, 1980; Stanisławski et al., 2021; Yik et al., 2011). Negative emotional coping is linked to negative valence and high arousal, whereas Positive emotional coping is conceptually associated with positive valence and low arousal.

Concepts of Coping Strategy and Coping Mode

Different authors seem to use various terms for very similar or identical constructs, e.g., coping strategy (Carver et al., 1989; Skinner et al., 2003), way of coping (Skinner et al., 2003; Zimmer-Gembeck & Skinner, 2011), or specific coping response (Pearlin & Schooler, 1978). Skinner et al. (2003, p. 216) equated coping strategies with ways of coping, defining them as "basic categories used to classify how people cope. They capture the ways people actually respond to stress." Importantly, coping strategies "refer to recognizable action types" (p. 217) and have to be conceptually clear and mutually exclusive. Similarly, specific coping responses can be defined as "behaviors, cognitions, and perceptions in which people engage when actually contending with their life problems" (Pearlin & Schooler, 1978, p. 5). However, many authors use the notion of coping strategy without defining it (Amirkhan, 1990; Band & Weisz, 1988; Carver et al., 1989; De Boo & Wicherts, 2009; Worthington & Scherer, 2004), which may lead to confusion, given the large number of coping categories, many of which are similar (Skinner et al., 2003),.

A valuable guideline in developing the concept of coping strategy is the observation by Skinner et al. (2003) that homogeneous coping categories should enable the pursuit of the same goals. Furthermore, it has been emphasized that an understanding of coping goals is necessary to gain an insight into coping acts (Band & Weisz, 1988; Coyne & Racioppo, 2000; Schwarzer & Schwarzer, 1996). A coping goal can be defined following Rudolph et al. (1995) as the "objective or intent of a coping response, which generally entails some form of stress reduction or reduction in some aversive aspect of a stressor" (p. 329). Specific coping goals are realized by corresponding coping functions, e.g., the goal of problem solving can be implemented by the function of problem solving.

In this dissertation, "coping strategy" is defined as a cognitive, emotional, and/or behavioral response to stress associated with a particular function, e.g., calming down or solving the problem. The above conceptualization is more precise than the definition proposed by Pearlin and Schooler (1978) and involves coping functions. It is similar to Skinner et al. (2003), but more explicitly includes the coping function and drops the criterion of mutual exclusiveness of coping strategies (as discussed further on).

While some strategies may involve very similar cognitive, emotional, or behavioral responses, they can nevertheless fulfill different functions. This variability may be addressed by the notion of coping mode understood as a set of coping strategies which include very similar cognitive, emotional, and/or behavioral responses to stress, but are associated with different functions. Both coping strategies and coping modes can be interpreted as states or dispositions.

Coping strategies representing the same coping mode can be distinguished in terms of Problem and Emotion coping dimensions. For instance, using the processual approach Band and Weisz (1988) distinguished between problem-focused

crying (i.e., crying to receive support in resolving the problem) and emotion-focused crying (i.e., crying to release feelings or elicit emotional support from others). While crying may be interpreted as coping mode, emotion-focused crying is example of negative emotional coping strategy, while problem-focused crying is strategy reflecting both Problem solving and Negative emotional coping.

Another example of a coping mode is reinterpretation or reappraisal, which is an emotion regulation process involving a mental transformation which may either improve or aggravate a stressful situation (Ochsner et al., 2004). In their work on religious coping, Pargament et al. (2000) made a distinction between benevolent religious reappraisal (i.e., reformulating the situation as an opportunity for spiritual growth) and punishing God reappraisal (i.e., reinterpreting the stressor as God's punishment). The former strategy corresponds to Problem solving and Positive emotional coping, whereas the latter to Problem avoidance and Negative emotional coping.

Positive reinterpretation or reappraisal has been incorporated in many coping measures, both dispositional and situational (Carver et al., 1989; Coleman, 1992; Ebata & Moos, 1991; Folkman et al., 1986). Carver et al. (1989) developed the COPE inventory which includes a scale of positive reinterpretation and growth with items such as "I look for something good in what is happening" (positive reinterpretation) and "I learn something from the experience" (growth). Interestingly, Fontaine et al. (1993), who conducted PCA on dispositional COPE items, demonstrated that growth and positive reinterpretation formed two separate factors. Furthermore, growth was correlated with perceived control over stress, while positive reinterpretation was associated with optimism (Fontaine et al., 1993). The same two items measuring positive reinterpretation by Fontaine et al. (1993) were included in positive reframing in the Brief COPE (Carver, 1997). Thus, COPE growth indicates Problem solving and Positive emotional coping, whereas COPE positive reinterpretation reflects Positive emotional coping.

A further example of coping mode is COPE restraint coping (Carver et al., 1989). Lyne and Roger (2000) observed that some items on this scale referred to non-impulsiveness (e.g., "I restrain myself from doing anything too quickly"), while others represented procrastination (e.g., "I hold off doing anything about it until the situation permits"). They found that two restraint items loaded the rational/active coping factor, while the other two – the avoidance factor. Thus, these forms of restraint coping could be labeled "problem restraint" and "avoidant restraint," respectively.

The coping mode concept could be adopted in analysis of defense mechanisms, such as internalization (Meissner, 1981; Winnicott, 1988), which itself may be regarded as a coping mode. An internalization strategy particularly useful in predicting adjustment in minorities experiencing discrimination (Wei et al., 2010) is the "tendency to attribute the cause or responsibility of a discriminatory incident to oneself" (p. 331) with a sample item being "I wonder if I did something to provoke this incident". The aforementioned conceptualization of internalization can

be formulated more generally as a coping mode: internalization is the attribution of the causes of adverse events or control over stressors to oneself when in fact they are outside one's control or are only slightly controllable. Also some forms of self-deception (Taylor & Armor, 1996) may be interpreted as an internalization strategy, e.g., exaggerated control in traumatic events (Zoellner & Maercker, 2006) or perceived control in uncontrollable serious illness, e.g., cancer (Barez et al., 2007; Lowery et al., 1993; Taylor et al., 1984). The attribution of responsibility for discrimination to oneself constitutes the internalization of negative aspects of a situation, whereas self-generated feelings of control in serious illness tend to be related to an expectation of improvement. The internalization of the cause of discrimination is thought to be correlated with maladjustment (Wei et al., 2010), while exaggerated control in illness may be adaptive (Barez et al., 2007; Lowery et al., 1993; Taylor et al., 1984). The internalization of negative aspects of a situation is associated with Problem avoidance and Negative emotional coping, whereas self-generated feelings of control in illness are linked to Problem avoidance and Positive emotional coping (cf. Maercker & Zoellner, 2004).

The existing typology of coping categories (process-strategy-style) has played an important role in stress psychology, but seems insufficient. The introduction of a fourth coping category, i.e., coping mode, which can be considered alongside process, strategy, and style, makes it possible to better organize coping constructs.

Coping Style Definition

According to Heszen-Niejodek (1997), a coping style is a repertoire of strategies available for coping with stressful encounters, specific to an individual. Similarly, Endler and Parker (1990a) define coping styles as cognitive/behavioral modes typically used by an individual in various stressful situations.

New light on the concept of coping styles was shed by Skinner et al. (2003), who proposed criteria for the homogeneity and distinctiveness of coping categories, that is, "the extent to which different ways of coping are equifinal, that is, lead to the same goals... Ways of coping that are functionally homogeneous should be able to be substituted for each other" (Skinner et al., 2003, p. 247). An integrative perspective can be taken to explore coping styles in greater detail. Coping strategies representing different coping modes can coexist together, creating one coping style. Thus, a coping style is a set of coping strategies fulfilling a specific function and relatively stable over time and across a range of circumstances. The definitions of all coping categories (i.e., style, mode, strategy and process) are shown in Table 7. Similarly to other conceptualizations (Endler & Parker, 1990a; Heszen-Niejodek (1997), the coping style as defined above has broad content and is relatively stable across different situations. As in the proposal of Heszen-Niejodek (1997), here a coping style is taken to consist of a set of coping strategies. It should be noted

that the key element distinguishing the presented definition from other proposals (Endler & Parker, 1990a; Heszen-Niejodek, 1997) is a focus on the coping function.

Table 7
Coping Categories and Their Definitions

Coping category	Definition
Process	A sequence of strategies changing over time, related to changes in the characteristics of the situation and changes in the psychophysical state of the individual[a]
Strategy	Cognitive, emotional and/or behavioral response to stress associated with a particular function, e.g., calming down or solving the problem
Mode	Set of coping strategies which include very similar cognitive, emotional, and/or behavioral responses to stress, but are associated with different functions
Style	Set of coping strategies fulfilling a specific function and relatively stable over time and across a range of circumstances

Note. [a] based on Wrześniewski (2000, p. 47).

The Coping Circumplex Model (CCM)

As noted by Schwarzer and Schwarzer (1996, p. 107), "coping with an adversity includes innumerous ways of dealing with diverse person-environment transactions. Thus, coping does not represent a homogeneous concept. Instead, it is a diffuse umbrella term." This line of reasoning is reflected in the Coping Circumplex Model (CCM) proposed in this dissertation, which is based on the bipolar dimensions of Problem coping and Emotion coping as well as on the idea of a circumplex continuum of coping styles.

The circumplex tradition in psychology. The term *circumplex* was introduced by Guttman (1954), being derived from the expression "circular order of complexity." A circumplex model should meet the following criteria (Gurtman, 1994): 1. Differences between variables are represented by two and only two dimensions; 2. Each variable is equidistant from the center of the circle; 3. All variables are uniformly distributed (evenly spaced) within the hypothetical circle. Furthermore, all possible rotations of the circumplex represent the construct equally well (Acton & Revelle, 2004; Larsen & Diener, 1992).

Within a circumplex, variables form a circular continuum with an arbitrary number of constructs. According to Wiggins (1979, p. 400), depending on the required level of precision, it is possible to "slice the circumplex pie" into broad or narrow categories (e.g., fourths, eighths, sixteenths, etc.). For example, the circumplex of vocational interest may contain six (Holland, 1997) or eight types (Tracey & Rounds, 1996). Similarly, eight (Russell, 1980) and 12 constructs (Yik et al., 2011) have been distinguished within the affect circumplex. Due to their properties, circumplex models are not tested by CFA, but by special statistical methods (Acton &

Revelle, 2004; Gurtman & Pincus, 2003; Tracey, 1997). Furthermore, circumplexes should reveal a sinusoidal pattern of correlations with external criteria (Gurtman, 1992; Wright et al., 2009).

Circumplex models have been applied to describe the structure of emotional states (Russell, 1980; Yik et al., 2011), interpersonal traits (Leary, 1957, Wiggins, 1995), interpersonal values (Locke, 2000), interpersonal problems (Alden et al., 1990), Big Five personality traits (Hofstee et al., 1992), personality metatraits (Strus & Cieciuch, 2017; Strus et al., 2014), and vocational interests (Tracey & Rounds, 1996).

Circumplex structure of coping styles. It seems clear that one coping response may serve various functions (Band & Weisz, 1988; Compas et al., 2001; Schwarzer & Schwarzer, 1996; Skinner et al., 2003). Lazarus (1996) and Skinner et al. (2003) argued that a coping strategy may be simultaneously focused on problem and emotions. Furthermore, Skinner et al. (2003) stated "consistent with Lazarus (1996), we argue that ways of coping cannot be classified by function because functional 'categories' are not mutually exclusive" (p. 226). The question arises as to whether it would be possible to develop a comprehensive model of coping based on completely independent and mutually exclusive categories. It seems more reasonable to strive for a model explaining relationships between coping categories rather than identify pure and mutually exclusive dimensions. Schwarzer and Schwarzer (1996, p. 114) pointed out that "theoretical cross-linked relationships between scales are not considered" in coping measures involving many factors. In the case of the WCQ, Schwarzer and Schwarzer (1996) noted that:

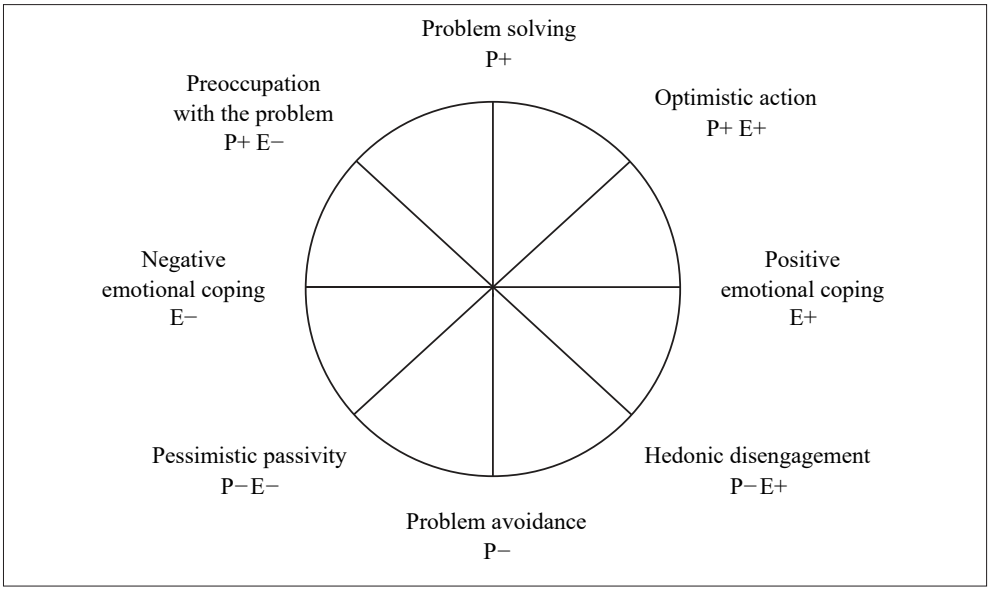
> Another difficulty with a high number of extracted factors is that they do not appear to be all of the same weight or of the same theoretical level. Some may be closer to a higher-order factor or to a general factor, accounting for a larger amount of variance, whereas others may be rather peripheral. It remains undetermined in what way the eight factors are embedded into the initial dimension of problem-focused and emotion-focused functions. There seems to be no empirical evidence for testing such a hierarchy with confirmatory factor analysis (Schwarzer & Schwarzer, 1996, p. 115).

A solution to the above problems may be provided by the CCM. Within the circumplex, categories are not mutually exclusive, some being related to one dimension, and others to both dimensions. Furthermore, in some circumplexes, variables may differ in terms of the strength of their relationship with the two structural dimensions (e.g., the Abridged Big Five Dimensional Circumplex; Hofstee et al., 1992).

Given that individuals in stressful situations can have two goals – instrumental (i.e., solving the problem) and hedonic (i.e., regulating their emotions), one can distinguish two dimensions of coping interpreted as orthogonal axes: Problem coping and Emotion coping. In the presented model, these dimensions define the space

for other coping categories within the circumplex: Optimistic action vs. Pessimistic passivity[3] and Preoccupation with the problem vs. Hedonic disengagement. The CCM contains four bipolar dimensions, which consist of eight coping styles. Each coping style is marked with a symbol derived from the names of the two structuring dimensions. P+ and P– refer to high and low Problem coping, while E+ and E– stand for high and low Emotion coping, respectively. The following coping styles were identified: Problem solving (P+), Problem avoidance (P–), Positive emotional coping (E+), Negative emotional coping (E–), Optimistic action (P+ E+), Pessimistic passivity (P– E–), Preoccupation with the problem (P+ E–) and Hedonic disengagement (P– E+). The CCM is shown in Figure 4.

Figure 4
The Coping Circumplex Model



Note. This figure was modified from Stanisławski (2019). Original figure is licensed under CC 4.0.

Problem Coping: Problem Solving vs. Problem Avoidance

Definition of Problem solving. Problem solving involves cognitive and behavioral efforts to deal with a problem. It consists of acknowledging various thoughts concerning the problem, making an effort to understand the situation, predicting the course of events, choosing the most appropriate solutions, planning to solve the problem, as well as taking consistent action to solve the problem.

3 The original names of this pair of coping styles were Efficiency vs. Helplessness (Stanisławski, 2019).

Problem-solving relies on one's own efforts, e.g., it does not involve instrumental manipulation to get others to deal with one's problems. Of course, in the case of an interpersonal problem, solving it may involve interacting with the people concerned and reasoning with them by presenting rational arguments (rather than exerting a social influence based on assertiveness or Machiavellianism). Several constructs described in the literature share some common characteristics with Problem solving. Some of them are regarded as dispositions, e.g., task-oriented coping (Endler & Parker, 1990a), while others can be interpreted both as states and dispositions, e.g., active coping and planning (Carver et al., 1989). Problem solving is also similar to some coping responses understood as a state: problem-focused coping (Folkman & Lazarus, 1980; Folkman & Lazarus, 1985), planful problem-solving (Folkman et al., 1986), and problem solving (Amirkhan, 1990; Connor-Smith et al., 2000; Tobin et al., 1989).

Factor analysis of COPE items showed active coping and planning to form one factor (Carver et al., 1989; Fontaine et al., 1993). Moreover, analysis of their scales indicated that active coping, planning, and suppression of competing activities load the same higher order factor (Carver et al., 1989; Sica et al., 1997), labeled "problem solving" by Clark et al. (1995). After analyzing the properties of three coping measures: one dispositional (COPE; Carver et al., 1989) and two situational (Coping Strategy Indicator, CSI; Amirkhan, 1990; WCQ, Folkman & Lazarus, 1985), they noted that both COPE and CSI problem solving as well as WCQ problem-focused coping were strongly correlated with each other (Clark et al., 1995). Furthermore, Endler and Parker (1990b) found a significant correlation between WCQ problem-focused coping and MCI task-oriented coping. This shows the convergence of the various constructs related to Problem solving derived from different coping inventories.

Definition of Problem avoidance. This coping style involves the avoidance of thinking about the problem (e.g., by engaging in substitute activities), decreased efforts to solve the problem, postponing tasks, and giving up attempts to attain the goal. It consists of cognitive problem avoidance (i.e., avoidance of thinking about the problem) and behavioral problem avoidance (i.e., reduced efforts to solve the problem, postponing tasks, and giving up). Both cognitive and behavioral problem avoidance are represented in the construct of problem avoidance as defined by Tobin et al. (1989). Cognitive problem avoidance exhibits similarities with distraction (Endler & Parker, 1990a), active distraction, passive cognitive distraction (Gol & Cook, 2004), and mental disengagement and denial (Carver et al., 1989), whereas behavioral problem avoidance resembles behavioral disengagement (Carver et al., 1989). Importantly, denial refers to rejecting the fact that the problem exists or acting as though the problem were not real (Carver et al., 1989), which is similar, but not identical, to cognitive problem avoidance. Problem avoidance from the model of Tobin et al., (1989) is a state, while denial and behavioral and mental disengagement can be interpreted as both dispositions and states (Carver et al.,

1989), and distraction is a dispositional construct (Endler & Parker, 1990a). Active distraction and passive cognitive distraction cannot be unequivocally classified as a disposition or state (as extracted using the sorting procedure) (Gol & Cook, 2004).

Using second-order factor analysis, the authors of the COPE demonstrated that both mental and behavioral disengagement as well as denial constitute one factor (Carver et al., 1989), which has been replicated and labeled as *avoidance* (Deisinger et al., 1996; Stowell et al., 2001). This construct is very similar to the aforementioned Problem avoidance. It should be noted that the coping constructs connected to Problem solving, i.e., active coping and planning, are negatively correlated with Problem avoidance categories, i.e., behavioral disengagement and denial (Carver et al., 1989).

Theoretical relationships of Problem solving and Problem avoidance with other psychological constructs. Desire for control has revealed positive and negative correlations with active problem solving and avoidance strategies, respectively (Gebhardt & Brosschot, 2002). Problem-focused coping is linked to an internal locus of control (Arslan et al., 2009), whereas avoidance to an external one (Lengua & Stormshak, 2000; Scott et al., 2010). Furthermore, problem-focused coping is correlated positively, and avoidance negatively, with perceived control over stress (Carver et al., 1989; Fontaine et al., 1993).

Task-oriented/problem-focused coping is associated with goal motivation (Gaudreau et al., 2012; Matthews et al., 2001; Struthers et al., 2000) as well as academic goal progress (Gaudreau et al., 2012; Saklofske et al., 2012; Struthers et al., 2000). Problem-focused coping (i.e., active action) is predictive of better job performance (i.e., job attendance and job knowledge), whereas avoidance (i.e., passive adaptation) is a predictor of inferior performance, that is, lower quantity and quality of work (Lu et al., 2010). Among the COPE constructs, behavioral disengagement and active coping reveal the strongest positive and negative correlations with procrastination, respectively (Sirois & Kitner, 2015). It seems that the correlates of Problem solving and Problem avoidance are consistently negatively correlated, which is consistent with the idea of bipolarity of the Problem coping dimension.

Emotion Coping: Positive Emotional Coping vs. Negative Emotional Coping

Definition of Positive emotional coping. Positive emotional coping involves being kind and understanding to oneself as one tries to solve a problem on one's own regardless of success, as well as using cognitive transformations that can elicit positive emotions and have a calming effect (through reinterpretation and humor).

As mentioned above, reinterpretation can be understood as a coping mode. Positive emotional coping includes positive reframing (Carver, 1997) and positive

reinterpretation (Carver et al., 1989; cf. Fontaine et al., 1993), but not growth (Carver et al., 1989). Moreover, Positive emotional coping contains humor (Carver, 1997; Carver et al., 1989), coping humor (Martin & Lefcourt, 1983), and self-kindness (Neff, 2003). These constructs are considered dispositions (self-kindness, Neff, 2003; coping humor, Martin & Lefcourt, 1983) or both dispositions and states (humor, Carver, 1997; Carver et al., 1989; positive reframing, Carver, 1997).

Positive emotional coping incorporates humor, which can be interpreted as a coping mode analogous to reinterpretation. Some items on the COPE humor scale (Carver et al., 1989) reflect the tendency to calm down (e.g., "I make jokes about it"), whereas others express calming down in conjunction with disregard of the problem (e.g., "I make fun of the situation"). The first humor strategy is very similar to Positive emotional coping, while the other one can impede problem resolution by combining Positive emotional coping with Problem avoidance. Thus, the former can be labeled positive humor and the latter hedonic humor. Items referring to the two humor strategies are represented both in the COPE (Carver et al., 1989) and the Brief COPE (Carver, 1997).

Coping humor is also operationalized with the Coping Humor Scale (CHS; Martin & Lefcourt, 1983). While some CHS items resemble Positive emotional coping ("I can usually find something to laugh or joke about even in trying situations"), others seem to be problematic and can be interpreted as, e.g., perceived effectiveness of using humor as a coping strategy ("It has been my experience that humor is often a very effective way of coping with problems"; Martin & Lefcourt, 1983). In this operationalization coping humor can be in some ways regarded as partially similar to Positive emotional coping.

Humor facilitates coping and emotion regulation through positive reinterpretation (Kuiper et al., 1993; Samson & Gross, 2012). Therefore, it is not surprising that in psychometric analyses humor and positive reinterpretation are connected (Doron et al. 2014; Hastings et al., 2005; Knoll et al., 2005; Prati et al., 2011). Positive reframing, humor and acceptance form one factor in both the situational (Knoll et al., 2005) and dispositional (Doron et al., 2014; Knoll et al., 2005) versions of the Brief COPE. According to Hastings et al. (2005), in the situational Brief COPE, items from the positive reframing and humor scales as well as one item each from the scales of acceptance and using emotional support load the same latent construct. Using the same version of the Brief COPE, Prati et al. (2011) identified a factor composed of positive reframing and humor.

Furthermore, Positive emotional coping encompasses some form of self-kindness, which is regarded as a component of self-compassion (vs. self-judgment; Neff, 2003). Self-compassion is in turn defined as "being open to and moved by one's own suffering, experiencing feelings of caring and kindness toward oneself, taking an understanding, nonjudgmental attitude toward one's inadequacies and failures, and recognizing that one's own experience is part of the common human experience" (Neff, 2003, p. 224). Self-compassion is usually conceptualized

as an attitude toward oneself rather than a way of coping (Neff, 2003), but some authors claim that it can be interpreted as a coping strategy (Allen & Leary, 2010). Self-compassion is associated with situational positive reframing (Sirois et al., 2015) and situational positive reinterpretation and growth (Neff et al., 2005). Facets of self-compassion are correlated with dispositional humor, with self-kindness revealing the strongest relationship to self-enhancing humor (Aydan, 2015). Furthermore, both self-kindness (Hardin & Larsen, 2014) and dispositional humor (Kuiper & Martin, 1993) are inversely associated with actual-ideal self-discrepancies. It seems that one latent tendency (i.e., Positive emotional coping) is at the root of self-kindness, humor, and positive reframing.

It is worth noting that self-kindness is associated with positive affect (Hardin & Larsen, 2014; Phillips & Ferguson, 2013). Similarly, greater positive affect is predicted by dispositional positive reinterpretation and growth (Schanowitz & Nicassio, 2006). Positive reframing is linked to satisfaction at the end of the day (Stoeber & Janssen, 2011). According to Knoll et al. (2005), situational focus on the positive (positive reframing, humor and acceptance) is related to higher positive affect in patients undergoing cataract surgery. While some authors have reported that dispositional humor is not significantly associated with positive affect (Clark et al., 1995), others have presented evidence to the contrary (Kuiper et al., 1995). Generally, constructs similar to Positive emotional coping are found to be related to positive affect.

Definition of Negative emotional coping. Negative emotional coping includes self-criticism when dealing with a problem, focusing attention on the negative aspects of stressful situations (e.g., rumination), and on negative emotions (e.g., feelings of tension, pressure, or anger). Among the constructs thought to be related to Negative emotional coping, some are regarded as states, e.g., self-criticism (Tobin et al., 1989), accepting responsibility (Folkman et al., 1986), and emotional discharge (Billings & Moos, 1984), some are considered stressor-specific responses, e.g., rumination (Connor-Smith et al., 2000), whereas others are deemed both dispositions and states (e.g., focus on and venting of emotions, Carver et al., 1989; venting, Carver, 1997).

Rumination disposition has been reported to be positively related to self-criticism (O'Connor & Noyce, 2008) and negatively to self-compassion (Raes, 2010). Dispositional focus on and venting of emotions is associated with rumination after stressful events (Cann et al., 2011). Both rumination disposition (Randles et al., 2010) and dispositional focus on and venting of emotions (Litman, 2006) are correlated with the behavioral inhibition system.

Furthermore, rumination disposition has been shown to be related to state anxiety (Vălenaş et al., 2017), while rumination following a stressful event – to hyperarousal (Cann et al., 2011). Both test anxiety and social anxiety are associated with self-criticism (Cunha & Paiva, 2012). Long-term anxiety can be predicted from

focus on and venting of emotions (Liverant et al., 2004). More generally, negative affect is associated with self-criticism (Compas et al., 1999), rumination (Kvillemo & Bränström, 2014; Mor & Winquist, 2002), focus on and venting of emotions (Kato, 2015), as well as venting (Kvillemo & Bränström, 2014). Self-criticism, rumination, and focus on and venting of emotions have very similar correlates and may be underpinned by the same construct, i.e., Negative emotional coping.

While Negative emotional coping is associated with distress, it also involves focus on negative emotions and seems to be linked to expression of those emotions, with some potential benefits (Forgas & East, 2008; Kashdan et al., 2007; Koch et al., 2013). For example, people in a negative mood better comply with conversational norms during speech (Koch et al., 2013) and are more effective in detecting deception than people in a positive mood (Forgas & East, 2008). Interestingly, for people who are not socially anxious, relationship intimacy is greater when negative emotions are expressed openly (Kashdan et al., 2007). Moreover, afflicted individuals expressing negative emotions tend to receive more help from other people (Graham et al., 2008). This is consistent with exploratory analyses of the COPE in which focus on and venting of emotions and seeking social support for instrumental and emotional reasons form one factor (e.g., Carver et al., 1989; Deisinger et al., 1996; Stowell et al., 2001).

Bipolarity of Emotion coping. It is expected that constructs resembling the Emotion coping poles can be distinguished and that they are negatively correlated. A pair of opposite facets included in self-compassion, i.e., self-kindness and self-judgment (Neff, 2003), resemble Positive and Negative emotional coping, respectively, and may be regarded as distinct constructs (Klimecki et al., 2013; Longe et al., 2010; Muris & Petrocchi, 2017). In their neuroimaging investigations, Longe et al. (2010) found that self-reassurance (similar to self-kindness) and self-criticism (resembling self-judgment) are correlated with the activity of different brain structures. Interestingly, self-compassion training tends to improve positive affect without reducing negative affect (Klimecki et al., 2013). This is consistent with findings from correlational studies in which self-kindness, but not self-judgment, was related to positive affect (Hardin & Larsen, 2014; Phillips & Ferguson, 2013). Moreover, Muris and Petrocchi (2017) showed self-judgment to be more strongly linked to psychopathology as compared to self-kindness (r = .47 vs. r = –.34).

Similarly, other components of Negative and Positive emotional coping, i.e., rumination and reappraisal (cf. positive reinterpretation) have revealed inverse relationships with psychopathology, but varied in the strength of their respective correlations (Aldao et al., 2010). In their meta-analysis, Aldao et al. (2010) found rumination to be more strongly associated with psychopathology than reappraisal (r = .49 vs. r = –.14). Interestingly, rumination seems to be associated with negative affect more consistently than reappraisal, while the latter reveals a more consistent association with positive affect as compared to rumination (Brans et al.,

2013; Brans & Verduyn, 2014; Bushman, 2002; Kraaij et al., 2009). In their study on recalling recently experienced episodes of negative emotions, Brans and Verduyn (2014) found that rumination, but not reappraisal, increased the intensity and duration of negative emotions. A weak influence of reappraisal on the intensity and duration of negative emotions was observed only when mean emotion regulation was controlled for. Brans et al. (2013) reported from a processual study that rumination was related to increased negative and decreased positive affect, whereas reappraisal was associated with greater positive affect. In turn, Kraaij et al. (2009) found that specific stressor reappraisal was associated with improvement in positive affect, but not with reduction in negative affect. Experimentally induced rumination increased negative affect, but did not influence positive affect (Bushman, 2002). In conclusion, elements of Negative emotional coping (i.e., self-criticism and rumination) are more consistently or more strongly related to negative affect or psychopathology than those of Positive emotional coping (i.e., self-kindness and positive reinterpretation). On the other hand, the aforementioned forms of Positive emotional coping reveal a more consistent relationship with positive affect than elements of Negative emotional coping. Positive emotional coping and Negative emotional coping represent opposite, but distinct, constructs containing additional psychological qualities.

Optimistic Action vs. Pessimistic Passivity[4]

Some forms of coping focus both on problems and regulating one's emotions; for example, Lyne and Roger (2000) and Stowell et al. (2001) identified a higher-order dispositional category of active coping/rational coping encompassing both problem-focused coping and coping focused on emotions, such as positive reinterpretation and growth and acceptance. In this dissertation, a configuration of Problem solving and Positive emotional coping is labeled Optimistic action. The opposite pole, combining Problem avoidance with Negative emotional coping, corresponds to Pessimistic passivity. Optimistic action vs. Pessimistic passivity can be related to the personality dimension of ego-resiliency vs. ego-brittleness (Block et al., 1986; Block & Kremen, 1996; cf. trait resilience, Fletcher & Sarkar, 2013).

Definition of Optimistic action[5]. Optimistic action is a combination of Problem solving and Positive emotional coping. It involves acknowledging the thoughts and feelings associated with the stressor, using cognitive transformations that

4 This pair of coping styles were originally named as Efficiency vs. Helplessness (Stanisławski, 2019). However, these names can erroneously suggest confounding with coping effects and were modified.

5 The name "Optimistic action" was used by Pearlin and Schooler (1978) for an occupational coping strategy. However, "Optimistic action" from Pearlin and Schooler (1978) is more similar to Problem solving than to a configuration of Problem solving and Positive emotional coping.

can help to find new ways of solving the problem and elicit positive emotions, as well as harboring positive expectations about the possibility of solving the problem. An important element of Optimistic action is actually taking action to solve the problem.

The coping strategies subsumed under Optimistic action enable flexible adaptation to changing situations, which makes it a likely counterpart of ego-resiliency (Block et al., 1986) in the field of coping. Ego-resiliency is conceptualized as "the dynamic capacity of an individual to modify his or her modal level of ego control, in either direction, as a function of the demand characteristics of the environmental context" (Block et al., 1986, p. 830; cf. trait resilience, Fletcher & Sarkar, 2013). Ego-resilient persons are characterized by the ability to bounce back from difficult experiences and adapt resourcefully to the changing demands of the environment (Block et al., 1986). Smeekens et al. (2007) found that during low quality interactions with parents low ego-resilient children reveal increased cortisol secretion, whereas high ego-resiliency children do not. Resilient individuals use positive emotions to recover from stressful experiences (Tugade & Frederickson, 2004), and trait resiliency is positively associated with task-oriented coping and negatively with emotion-oriented coping and distraction (Litwic-Kaminska & Izdebski, 2016).

Other constructs similar to Optimistic action include positive reinterpretation and growth (Carver et al., 1989), problem engagement (Tobin et al., 1989), active coping/rational coping (Lyne & Roger, 2000; Stowell et al., 2001) and proactive coping (Schwarzer, 2001). It seems that growth reflects Optimistic action and Problem solving, whereas positive reinterpretation evinces Positive emotional coping and, to a lesser extent, Optimistic action. These strategies can be considered either separately or as complementary ways of coping with stress. Positive reinterpretation and growth involves a combination of both Problem solving and Positive emotional coping. According to Carver et al. (1989), "construing a stressful transaction in positive terms should intrinsically lead the person to continue (or to resume) active, problem-focused coping actions" (pp. 269–270). Similarly, problem engagement from the processual model of Tobin et al. (1989) encompasses problem solving and cognitive restructuring, which seems to directly refer to a configuration of Problem solving and Positive emotional coping.

Importantly, exploratory analysis of both the situational (Fortune et al., 2002) and dispositional (Lyne & Roger, 2000; Stowell et al., 2001) versions of COPE scales corroborated the existence of a construct similar to Optimistic action. Lyne and Roger (2000), Stowell et al. (2001), as well as Fortune et al. (2002) identified a factor consisting of active coping, planning, suppression of competing activities, restraint coping, acceptance, and positive reinterpretation and growth, which was labeled active coping/rational coping (Lyne & Roger, 2000; Stowell et al., 2001).

Another construct resembling Optimistic action is proactive coping (Schwarzer, 2001). Both kinds of copers, the ones endorsing Optimistic action and proactive individuals, are active and tend to interpret difficulties as eustress. Proactive persons

perceive life as "full of abundant resources" (Greenglass et al., 1999, p. 5) and people preferring Optimistic action reinterpret situations in terms of positive expectations about the possibility to solve the problem. Importantly, proactive behavior aims at improving life and may partially solve problems even before they emerge (Schwarzer, 2001). Proactive coping may be a future-oriented counterpart of Optimistic action.

Definition of Pessimistic passivity. In the CCM, Pessimistic passivity is a configuration of Problem avoidance and Negative emotional coping. Pessimistic passivity involves suppressing thoughts and feelings associated with the problem, using cognitive transformations eliciting negative expectations as to the possibility of overcoming the problem as well as negative emotions (e.g., internalization of the negative aspects of the problem and preoccupation with one's exaggerated limitations and the negative aspects of the situation).

Constructs resembling Pessimistic passivity as defined above are: ego-brittleness (Block et al., 1986; Block & Kremen, 1996), emotion-oriented coping (Endler & Parker, 1990a), maladaptive coping (Dunkley & Blankstein, 2000), and internalization of the negative aspects of stressful situations (American Psychological Association, APA, 2007; Wei et al., 2010). Pessimistic passivity is similar to ego-brittleness, which stands in opposition to ego-resiliency (Block et al., 1986; Block & Kremen, 1996). In contrast to the other variables mentioned above, ego-brittleness does not directly refer to coping, but is a personality construct. Ego-brittle individuals manifest "little adaptive flexibility and tend to either perseverate or fall apart under stress" (Block et al., 1986, p. 830).

Pessimistic passivity evinces emotion-oriented coping, defined as self-oriented efforts aimed at reducing stress through emotional responses (e.g., anger, blaming oneself for being too emotional), self-preoccupation, and fantasizing (daydreaming), which may increase stress (Endler & Parker, 1990a). It might be presumed that Pessimistic passivity and emotion-oriented coping from Endler and Parker's model (1990a) have a similar conceptual scope. Emotional responses typical of emotion-oriented coping seem akin to Negative emotional coping, whereas self-preoccupation and fantasizing are related to Problem avoidance. Some CISS items, such as "Worry about being unable to cope" and "Focus on my inadequacies" (Endler & Parker, 1990a) directly correspond to Pessimistic passivity. Moreover, emotion-oriented coping is associated with strategies involving Problem avoidance and Negative emotional coping (Boysan, 2012; Endler & Parker, 1990b). Emotion-oriented coping is correlated with focus on and venting of emotions, avoidance (Boysan, 2012), wishful thinking, as well as self-blame (Endler & Parker, 1990b).

Pessimistic passivity may also be expected to exhibit correlations with some other CISS coping styles. As mentioned above, task-oriented coping is similar to Problem solving, whereas distraction resembles Problem avoidance. Thus, Pessimistic passivity should be negatively related to task-oriented coping and positively

to distraction. Maladaptive coping (high emotion-oriented coping, high distraction, low task-oriented coping) has been identified on the basis of the CISS (Dunkley & Blankstein, 2000). It is intriguing that a configuration of the same CISS constructs with opposite signs is associated with trait resilience (Litwic-Kaminska & Izdebski, 2016).

Moreover, Pessimistic passivity is reflected in the internalization of negative aspects of stressful situations, e.g., causes of discrimination (Wei et al., 2010) or oppression (APA, 2007). In the feminist model of psychological practice (APA, 2007), the internalization of persecution is a major contributor to distress among women. Moreover, members of ethnic minorities with greater internalization of discrimination score higher on self-blame and behavioral disengagement as measured by the situational Brief COPE (Wei et al., 2010).

It should be noted that results from various analyses of the dispositional Brief COPE can be related to the CCM (see Doron et al., 2014; Knoll et al., 2005; Snell et al., 2011). Snell et al. (2011) found that denial, behavioral disengagement, venting and self-blame form one factor. In turn, Doron et al. (2014) reported a factor loaded by denial, behavioral disengagement, self-blame and substance use. Finally, Knoll et al. (2005) identified a factor composed of denial, self-blame, and venting. Indeed, it seems that all these Brief COPE categories are underpinned by the construct of Pessimistic passivity (Doron et al., 2014; Knoll et al., 2005; Snell et al., 2011).

What is more, analysis of dispositional Brief COPE scales and selected scales from the CSI (Tobin et al., 1989) enabled Livneh et al. (2000) to find three bipolar dimensions, with the first one encompassing the greatest number of coping scales. Active coping, planning, positive reframing, and acceptance reflected the positive pole of the first dimension, while substance use, CSI self-criticism, and CSI social withdrawal represented its opposite pole. Analogously, Finset et al. (2002), who used their own dispositional questionnaire (i.e., BACQ), reported that approach and avoidance formed one bipolar dimension. Approach included solving the problem, seeking social support, and optimism towards the problem, whereas avoidance was associated with resignation and withdrawal (Finset et al., 2002). The bipolar dimensions from the studies of Finset et al. (2002) and Livneh et al. (2000) are reflected in the distinction between Optimistic action and Pessimistic passivity.

Theoretical relationships of Optimistic action and Pessimistic passivity with other psychological constructs. Optimistic action and Pessimistic passivity from the CCM are expected to be linked to constructs representing a plethora of psychological models and approaches. This can be illustrated with ego-resiliency and ego-brittleness (Block et al., 1986; Block & Kremen, 1996), which provide a theoretical basis for linking Optimistic action and Pessimistic passivity to external variables. Trait resilience has been shown to be positively correlated with mindfulness (Mantzios et al., 2015), emotion regulation (i.e., trait reappraisal; Waugh et al., 2008), hope, and self-esteem (Mak et al., 2011), and negatively with mental

health problems (Hu et al., 2015). Similarly to ego-resiliency vs. ego-brittleness, Optimistic action vs. Pessimistic passivity are thought to be related to mindfulness, emotion regulation, hope, self-esteem and mental health problems. Furthermore, Optimistic action and Pessimistic passivity seem to be associated with action vs. state orientation (Kuhl, 1981, 2000).

Mindfulness. Mindfulness is defined as "paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally. This kind of attention nurtures greater awareness, clarity, and acceptance of present-moment reality" (Kabat-Zinn, 1994, p. 4). Bishop et al. (2004) identified two components of mindfulness: self-regulation of attention and orientation to experience. The first is characterized by focusing attention on current experience and being alert and fully present in the moment. The second component refers to an attitude of acceptance and curiosity towards one's experience. Two factors resembling those components have been reported from research (Kohls et al., 2009; Tran et al., 2014).

Those components can also be interpreted in the CCM. Self-regulation of attention is likely to be located between Problem solving and Optimistic action, while orientation to experience is similar to Optimistic action and Positive emotional coping. Thus, overall mindfulness is expected to be associated with Optimistic action.

Mindfulness is related both to coping with a specific event (Weinstein et al., 2009) and dispositional coping (Palmer & Rodger, 2009). Mindful individuals have been found to be more likely to employ approach coping (i.e., active coping, acceptance, positive reinterpretation and growth), and less likely to use avoidance coping (i.e., denial and behavioral and mental disengagement, Weinstein et al., 2009). Palmer and Rodger (2009) reported positive correlations of mindfulness with rational coping (a kind of problem-solving coping) and negative relationships with emotional and avoidance coping. Mindfulness-based intervention reduces the use of disengagement coping (Cousin & Crane, 2016) and emotion-oriented coping (Messer et al., 2016). In conclusion, a combination of coping constructs similar to Optimistic action and Pessimistic passivity has been found to demonstrate positive and negative relationships with mindfulness, respectively

Cognitive reappraisal and expressive suppression. Gross and John (2003) distinguished two emotion regulation processes: cognitive reappraisal and expressive suppression. Cognitive reappraisal is conceptualized as a "form of cognitive change that involves construing a potentially emotion-eliciting situation in a way that changes its emotional impact" (Gross & John, 2003; cf. Lazarus & Alfert, 1964). In turn, expressive suppression is a "form of response modulation that involves inhibiting ongoing emotion-expressive behavior" (Gross & John, 2003). Reappraisal is an antecedent-focused process, while suppression is a response-focused emotion regulation strategy. Reappraisal appears early in the emotion generation process

and effectively changes the entire subsequent emotion route. In turn, suppression occurs late in the process of emotion generation. It is not useful in decreasing negative emotion experience, but it can successfully limit the expression of negative emotions. However, as a side effect, it can also suppress positive emotions. By contrast, reappraisal efficiently reduces the experience and behavioral manifestation of negative emotions (Gross & John, 2003).

Cognitive reappraisal is linked to dispositional positive reinterpretation and growth from the COPE (Balzarotti et al., 2010; Gross & John, 2003). Cognitive reappraisal and expressive suppression are associated with dispositional problem-focused coping and avoidance, respectively (Williams & Hasking, 2010). In addition, according to Amstadter and Vernon (2008), they are related to situational coping: problem engagement (including problem solving and cognitive restructuring) and emotion disengagement (encompassing self-criticism and social withdrawal), respectively.

Cognitive reappraisal and mindfulness may share a common underlying mechanism, possibly decentering (Hayes-Skelton & Graham, 2013), which was conceptualized by Safran and Segal (1996, p. 117) as the ability to "step outside of one's immediate experience, thereby changing the very nature of that experience." Indeed, both mindfulness (Gecht et al., 2014) and positive reappraisal (Fresco et al., 2007; Naragon-Gainey & DeMarree, 2017) have been reported to be associated with decentering. Interestingly, suppression reveals a negative correlation with decentering (Fresco et al., 2007). Hayes-Skelton and Graham (2013) posited that decentering may be a mechanism underpinning both cognitive reappraisal and mindfulness. Decentering is positively correlated with self-esteem (Fresco et al., 2007; Naragon-Gainey & DeMarree, 2017) and negatively with rumination (Naragon-Gainey & DeMarree, 2017). Thus, decentering can be assumed to be associated with Optimistic action.

Action and state orientation. Kuhl (1981, 2000) developed the concept of action vs. state orientation. The former refers to a focus on task-relevant cognitions, while the latter involves ruminating after a failure. Kuhl (1981), who investigated the moderating role of action vs. state orientation in learned helplessness, found state-orientation to be associated with deterioration in task performance upon exposure to uncontrollable failure. In turn, there was no evidence for any effect of action orientation on learned helplessness (Kuhl, 1981). Kuhl (1992) distinguished three dimensions of state- vs. action-orientation: preoccupation (vs. disengagement), hesitation (vs. initiative), and volatility (vs. persistence). In his research, Kuhl focused mainly on the first two components. Hesitation (vs. initiative) was conceptualized as "an inability to initiate intended actions even when no rational reason seems to prevent one from doing so" (Kuhl, 1992, p. 109). This component refers to dealing with inhibited positive affect. According to Kuhl's theory (Koole et al., 2005), when an individual fails to obtain the desired outcome, intention

memory should be activated to enable the formulation of intentions, planning, and implementing appropriate actions.

Preoccupation (vs. disengagement) is the second component of state- vs. action orientation, which is characterized by "an inability to stop thinking about an event, especially an aversive one, even when one cannot do anything about it and, indeed, intends to focus on a new activity not related to it" (Kuhl, 1992, p. 108). Preoccupation (vs. disengagement) is related to dealing with negative emotions. Experiencing emotions, especially those with negative valence, is strongly linked with access to extension memory, which is conceptualized as a central executive system based on parallel processing (Kuhl, 2000). Its parallel nature enables the integration of many different self-representations, preferences, and feelings, so that an individual can choose a goal, optimize the ways of its implementation, as well as more effectively regulate his or her emotions. Negative emotions limit access to extension memory, impeding task performance (cf. Bolte et al., 2003). When a high preoccupation person is confronted with stress, his or her extension memory becomes dissociated from lower-level processes (Koole et al., 2005). Therefore, overarching goals and self-knowledge are detached from new experiences causing inferior task performance (Brunstein & Olbrich, 1985), rumination (Kuhl & Baumann, 2000), and a tendency to attribute others' actions to oneself (Kuhl, 1992).

It seems reasonable that hesitation vs. initiative resembles Problem avoidance vs. Problem solving, whereas preoccupation vs. disengagement has some commonalities with Negative emotional coping/ Pessimistic passivity vs. Positive emotional coping/ Optimistic action. Generally, action vs. state orientation is similar to Optimistic action vs. Pessimistic passivity. The flexibility of Optimistic action requires good access to extension memory, while Pessimistic passivity represents inhibited access to it.

Hope and hopelessness. Both Optimistic action and Pessimistic passivity entail expectations about the effects of actions and certain elements of the conceptualizations of these constructs are evocative of hope and hopelessness. Snyder et al. (1991, p. 570) defined hope as "a cognitive set that is composed of a reciprocally derived sense of successful (a) agency (goal-directed determination) and (b) pathways (planning of ways to meet goals)". In turn, various conceptualizations and operationalizations of hope were found to be related to both dispositional and situational problem-focused coping (Caretta, 2011; Litman, 2006; Snyder et al., 1991) as well as dispositional and situational positive reinterpretation (Caretta, 2011; Litman, 2006). Inverse associations have been found between hope and the use of avoidance and self-blame when faced with a specific stressor (Caretta, 2011).

It is worth looking into the relationship between coping and hopelessness. The latter denotes negative expectations about future life (Beck et al., 1974). Individuals scoring high on hopelessness prefer greater use of emotion-focused disengagement and lower use of problem-focused engagement (Taft et al., 2007).

Hopelessness is positively correlated with avoidance and inversely with cognitive reconstruction (O'Connor & O'Connor, 2003). It is also conceptually related to other variables, such as diminishment (Litman & Lunsford, 2009).

Self-esteem and diminishment. Diminishment is defined as decreased self-esteem, feelings of helplessness, and higher pessimism (Litman & Lunsford, 2009), and can be predicted from situational focus on and venting of emotions and behavioral disengagement (Litman & Lunsford, 2009). Self-esteem exhibits an inverse pattern of correlations with situational coping (Clements et al., 2004; Smith et al., 1996). Self-esteem is correlated positively with positive reinterpretation and growth and problem-focused coping (Smith et al., 1996), and negatively with self-blame (Clements et al., 2004) and avoidance (Clements et al., 2004; Smith et al., 1996). Similar relationships have been found between self-esteem and dispositional coping (Carver et al., 1989; Geyh et al., 2012; Leandro & Castillo, 2010; Nieśpiałowski & Terelak, 2016; Scheier et al., 1994). Individuals with higher self-esteem demonstrate greater positive reinterpretation and growth (Carver et al., 1989; Leandro & Castillo, 2010; Scheier et al., 1994) and less emotion-oriented coping (Geyh et al., 2012; Leandro & Castillo, 2010; Nieśpiałowski & Terelak, 2016). People with higher self-esteem show a greater preference for problem-focused coping (Carver et al., 1989; Scheier et al., 1994) and task-oriented coping (Geyh et al., 2012; Leandro & Castillo, 2010) and use less distraction (Nieśpiałowski & Terelak, 2016) or avoidance coping (Carver et al., 1989; Leandro & Castillo, 2010; Scheier et al., 1994).

Mental health problems. As it was mentioned above, a combination of CISS categories, i.e., high emotion-oriented coping, high distraction, and low task-oriented coping, forms the construct of maladaptive coping, which strongly predicts distress (Dunkley & Blankstein, 2000). Maladaptive coping is thought to manifest Pessimistic passivity. The above interpretation of CISS styles is reflected in results from other studies (Cohan et al., 2006; Endler & Parker, 1994; Leandro & Castillo, 2010). Depression is associated positively with emotion-oriented coping (Cohan et al., 2006; Endler & Parker, 1994; Leandro & Castillo, 2010; McWilliams et al., 2003) and avoidance-oriented coping (Endler & Parker, 1994; Leandro & Castillo, 2010), and negatively with task-oriented coping (Cohan et al., 2006; Leandro & Castillo, 2010). Symptoms of anxiety have been linked to greater preference for emotion-oriented coping and distraction, and lower use of task-oriented coping (Cohan et al., 2006). In conclusion, a configuration of CISS coping styles resembling Pessimistic passivity predicts mental health problems.

In Kato's meta-analysis (2015), eight COPE constructs were correlated with general distress ($r > .10$): active coping, positive reinterpretation and growth (negatively), focus on and venting of emotions, self-blame, denial, mental and behavioral disengagement, and restraint coping (positively). A configuration of these constructs excluding restraint coping reflects the Optimistic action–Pessimistic passivity

dimension. Similarly, in a meta-analysis of psychopathological morbidity in carers of people with dementia, dysfunctional coping (containing, e.g., avoidance, denial, emotional discharge) was correlated with proneness to anxiety and depression (Li et al., 2012). It seems that the Optimistic action–Pessimistic passivity concept provides the most parsimonious explanation of relationships between distress and a variety of coping constructs from different inventories (e.g., Cohan et al., 2006; Kato, 2015; Leandro & Castillo, 2010; Li et al., 2012).

Conclusion. Optimistic action vs. Pessimistic passivity are related to mindfulness (Kabat-Zinn, 1994) in an inverse manner, and have some commonalities with the constructs of cognitive reappraisal–expressive suppression (Gross & John, 2003), action orientation–state orientation (Kuhl, 1981, 2000), hope–hopelessness (Beck et al., 1974; Snyder et al., 1991), and self-esteem–diminishment (Geyh et al., 2012; Litman & Lunsford, 2009; Myers & Rosen, 1999). Optimistic action is expected to be negatively associated with mental health problems, while Pessimistic passivity demonstrates a positive relationship with them (Kato, 2015; Li et al., 2012).

Interestingly, mindfulness and action orientation–state orientation (Kuhl, 1981, 2000) include categories similar to the basic CCM dimensions: Problem coping and Emotion coping. The variables associated with Problem coping are self-regulation of attention (a form of mindfulness; Bishop et al., 2004) and initiative (a form of action orientation; Kuhl, 1992). Finally, the constructs representing a conceptual range similar to Emotion coping are orientation to experience (a form of mindfulness; Bishop et al., 2004) and disengagement (a form of action orientation; Kuhl, 1992).

Optimistic action (Pessimistic passivity), representing both Problem coping and Emotion coping, seems to be also linked with the social forms of coping. Optimistic action is connected to the flexible investing of social resources (e.g., trust-based collaboration to resolve the problem). Conversely, Pessimistic passivity is reflected in rigid ways of investing social resources. It can be interpreted as engaging in a relationship with a person who reduces the available resources rather than provide support (e.g., an egoistic individual exploiting others). Optimistic action vs. Pessimistic passivity provides a theoretical anchor for integrating flexible vs. rigid forms of coping, both individualistic and social.

Preoccupation with the Problem vs. Hedonic Disengagement

Some coping strategies can be correlated with the dimensions of Problem coping and Emotion coping with opposite signs. For instance, in their processual approach Band and Weisz (1988) identified problem-focused crying, which is similar to Problem solving and Negative emotional coping. Analogously, a combination of Problem avoidance and Positive emotional coping may result in, e.g., hedonistic escapism (including dispositional humor and substance use; Deisinger et al., 1996).

A configuration of Problem solving and Negative emotional coping is identified as Preoccupation with the problem, while Problem avoidance concurrent with Positive emotional coping is termed Hedonic disengagement. Given that coping styles can be related to constructs representing personality dimensions, Optimistic action vs. Pessimistic passivity is associated with ego-resiliency, while Preoccupation with the problem vs. Hedonic disengagement – with ego-control (Block & Block, 1980).

Definition of Preoccupation with the problem. Preoccupation with the problem corresponds to a combination of Problem solving and Negative emotional coping. An individual preoccupied with a problem exhibits a high tendency to take action to solve the problem and a low tendency to maintain his or her momentary well-being. Faced with a stressor, such a person is alert, actively focuses on the information about the problem (including unpleasant facts) and blocks distracting thoughts (even those concerning his or her own needs). The individual does not want to miss the opportunity at hand for fear that something bad will happen if he or she does not solve the problem right away. The individual tries to thoroughly understand the problem and makes comprehensive preparations to find a solution promptly.

Coping strategies underpinned by Preoccupation with the problem reflect restraining impulses and delaying gratification; in coping research these characteristics make it a reasonable equivalent of ego-control (i.e., a high level of ego-control) defined as the "degree of impulse control and modulation" (Block & Block, 1980, p. 41).

In line with this reasoning, Preoccupation with the problem is thought to reveal commonalities with different constructs being interpreted as dispositions or states: suppression of competing activities (Carver et al., 1989), problem-focused processing of negative emotions (e.g., problem-focused worrying; cf. Davey et al., 1992; Siddique et al., 2006), and conformity (interpreted as a response to stress; cf. DeYoung, 2010; DeYoung et al., 2002). Preoccupation with the problem includes a specific, problem-focused form of worry, and thus it is somewhat similar to general worry, which is in turn related to distress (Calmes & Roberts, 2007; Stober & Joormann, 2001) and, after controlling for trait anxiety, it has been shown to facilitate problem-focused coping (Davey et al., 1992) and promote academic performance (Siddique et al., 2006). The other construct which shares some common characteristics with Preoccupation with the problem is suppression of competing activities, which is part of problem-focused coping (Carver et al., 1989) and reveals a weak correlation with higher levels of depression (Kato, 2015). More precisely, suppression of competing activities is expected to be associated with Preoccupation with the problem and Problem solving.

Furthermore, Preoccupation with the problem as a construct representing strong control of impulses can be connected with conformity (cf. DeYoung, 2010; DeYoung et al., 2002), especially as a response to stress. Preoccupation with the problem includes strategies representing a potentially useful problem-focused component

(cf. Davey et al., 1992), but they are also linked to at least transient negative emotions (cf. Davey et al., 1992) or conformity, which is socially costly in many situations (cf. DeYoung et al., 2002).

The other construct reflecting the overly controlling nature of Preoccupation with the problem is perfectionism (cf. Flett et al., 2012; Gong et al., 2015) Interestingly, Preoccupation with the problem is expected to reveal some relationship with the type A behavior pattern (TABP; Carver et al., 1989) and provide an insight into psychosis (Cooke et al., 2007).

The two components of perfectionism are perfectionistic concerns and perfectionistic strivings. The latter reflect self-oriented perfectionism and personal standards (Frost et al., 1993; Gotwals et al., 2012). Perfectionistic strivings are similar to Preoccupation with the problem and are positively associated with problem-focused coping (Dunkley et al., 2000; Flett et al., 2012), socioemotional coping, i.e., seeking social support and focus on and venting of emotions (Gong et al., 2015), and internalizing responses to stress (Flett et al., 2012). In their review of the role of perfectionism in athletes, Gotwals et al. (2012) reported that slightly more studies found perfectionistic strivings to be adaptive (e.g., positively correlated with goal achievement) relative to the number of studies that found them dysfunctional. Perfectionistic strivings displayed a weak negative or non-significant relationship with burnout (Hill & Curran, 2016) and a small positive but consistent correlation with depression (Smith et al., 2016). This is yet another argument supporting the view that Preoccupation with the problem may contain both adaptive and dysfunctional elements.

The next variable postulated to be correlated with Preoccupation with the problem and also with Negative emotional coping is the TABP. Spence et al. (1987) demonstrated that the TABP contained two relatively independent components: achievement striving (cf. competitive drive; Houston et al., 1986) and impatience irritability (cf. speed and impatience; Houston et al., 1986). Achievement striving, but not impatience irritability, has been found to be correlated with problem-focused coping (Lee et al., 1993). Furthermore, achievement striving is positively associated with course grades (Lee et al., 1993), job satisfaction (Day & Jreige, 2002), and well-being (Day et al., 2005), whereas impatience irritability is positively correlated with distress (Lee et al., 1993), perceived stress (Day & Jreige, 2002), and negatively with well-being (Day et al., 2005). Achievement striving reveals commonalities with Problem solving/Optimistic action, while impatience irritability seems to be related to Negative emotional coping/Pessimistic passivity.

Some studies have used two components of the TABP, while others have scrutinized the correlates of the overall score. The overall TABP has been associated with problem-focused coping (e.g., suppression of competing activities) and focus on and venting of emotions (Carver et al., 1989), and has been consistently linked to distress (Søgaard et al., 2008; Suls & Wan, 1989). Presumably, the TABP is located between Preoccupation with the problem and Negative emotional coping,

and its impatience irritability component can indicate problems with excessive self-control and/or a form of emotional reactivity.

It appears reasonable that greater awareness of symptoms in psychosis could be connected to a focus on information concerning threats or unpleasant situations. Indeed, insight factors in schizophrenia are positively correlated with the suppression of competing activities, planning, and seeking social support for instrumental and emotional reasons, but negatively with mental and behavioral disengagement as well as positive reinterpretation and growth (Cooke et al., 2007). A combination of all of these strategies excluding seeking social support reflects Preoccupation with the problem.

Preoccupation with the problem is a new construct which creates a common framework for the integration of coping and personality variables representing high levels of problem-focused control, often associated with the processing of negative emotions, such as: problem-focused worrying (cf. Davey et al., 1992; Siddique et al., 2006), suppression of competing activities (Carver et al., 1989), perfectionistic strivings (cf. Dunkley, 2000; Flett et al., 2012), and conformity (cf. DeYoung, 2010; DeYoung et al., 2002). It seems that endorsing Preoccupation with the problem in controllable conditions can be adaptive (cf. Osowiecki & Compas, 1998; Park et al., 2001), but it could increase distress in uncontrollable situations (cf. Ben-Zur & Zeidner, 1995). Preoccupation with the problem requires an investment of resources, and it can lead to their temporary depletion (e.g., situationally diminished self-esteem), which may elicit negative emotions. On the other hand, Preoccupation with the problem can enable a successful implementation of important but laborious projects. Optimally, Preoccupation with the problem should be used together with some form of Emotion coping (e.g., Optimistic action).

Definition of Hedonic disengagement. Hedonic disengagement is a combination of Problem avoidance and Positive emotional coping. It involves avoiding information about the problem and a strong tendency to maintain momentary well-being. Individuals endorsing it use cognitive transformations that lead to an exaggerated sense of control over the problem (a form of internalization) and diminish its importance (problem devaluation). Hedonic disengagement also includes disregard of the problem, low problem-solving engagement, postponing the task at hand, or giving up efforts to find a solution.

Hedonic disengagement reflects low ego-control (Block & Block, 1980) in the area of coping – it is associated with succumbing to impulses and seeking immediate gratification. Hedonic disengagement is similar to numerous constructs conceptualized as dispositions and states: exaggerated perception of control (Taylor et al., 1984; Zoellner & Maercker, 2006), hedonistic escapism (Deisinger et al., 1996; cf. Sica et al., 1997), humor (Carver et al., 1989), social diversion (Endler & Parker, 1990a), seeking relaxing diversions (Frydenberg & Lewis, 1993), relaxing (Patterson & McCubbin, 1987), and soothing distraction (Gol & Cook, 2004). Hedonic

disengagement involves a tendency for exaggerated perception of control in stressful encounters, which has been analyzed and discussed at length by several authors (Lowery et al., 1993; Taylor et al., 1984; Zoellner & Maercker, 2006). While a self-generated feeling of control is associated with better adjustment in cancer (Barez et al., 2007; Lowery et al., 1993; Taylor et al., 1984), it may not be adaptive when the beliefs concerning the disease are not borne out by the facts (Christensen et al., 1991; Tomich & Helgeson, 2006). Exaggerated internal control is negatively correlated with depression and trait anxiety, but positively with mania (Berrenberg, 1987).

Moreover, the definition of Hedonic disengagement resembles hedonistic escapism as recognized in COPE analysis (Deisinger et al., 1996). Based on the same instrument, Sica et al. (1997) identified one factor containing humor, substance use, denial, as well as mental and behavioral disengagement. It should be noted that both of the above constructs include humor, which involves at least two strategies, as already mentioned: one is similar to Positive emotional coping ("I make jokes about it"), and the other one to Hedonic disengagement ("I make fun of the situation"; Carver et al., 1989). Interestingly, humor has been found to be negatively correlated with trait anxiety (Doron et al., 2014; Scheier et al., 1994), perceived stress (Doron et al., 2014), and positively, but weakly, with distress (Kato, 2015; Nielsen & Knardahl, 2014). Endorsement of humor by women in early stage breast cancer predicted less distress (Carver et al., 1993). Humor mediated relationships between ego-resiliency and life satisfaction/well-being in patients with rheumatoid arthritis, but not with diabetes (Kaczmarek et al., 2011; Sęk et al., 2012). Diabetes requires planning to make sure insulin is taken as appropriate, whereas pain relief strategies may be helpful for people suffering from rheumatoid arthritis. It seems that humor, and especially its hedonic form, may be particularly beneficial for people exposed to uncontrollable or chronic stressors. Presumably, responses similar to Hedonic disengagement would be adaptive in low controllable conditions (Kaczmarek et al., 2011; Sęk et al., 2012), but it seems reasonable that they will predict greater distress under controllable situations, when the problem can be solved (cf. distancing; Penley et al., 2002). It seems that Hedonic disengagement contains a potential for both adaptive and maladaptive health effects.

Hedonic disengagement seems to share certain characteristics with the following coping constructs: seeking relaxing diversions (Frydenberg & Lewis, 1993), relaxing (Patterson & McCubbin, 1987), and soothing distraction (Gol & Cook, 2004). In their concept of map analysis, soothing distraction was defined by Gol and Cook (2004) in reference to calming and relaxing distraction. In a two-dimensional space, this construct is located between self-management/relaxation (strategy of control of emotions) and active distraction (akin to CISS distraction and COPE mental disengagement; Gol & Cook, 2004).

Some responses to stress, such as social diversion, enable detachment from the problem. Social diversion represents stressor avoidance in conjunction with

Positive emotional coping (seeking out other people, e.g., talking to a friend; Endler & Parker, 1990a). It is associated with life satisfaction (Harper, 2012; Saklofske et al., 2012), positive affect (Saklofske et al., 2012), and perceived social support (Ponizovsky et al., 2004). In some studies social diversion was not correlated with distress (Brands et al., 2014; Ritsner et al., 2003), while others reported a negative relationship (Harper, 2012; Ponizovsky et al., 2004). One paper found a weak negative correlation for women and no effect for men (Cohan et al., 2006).

In addition to relationships with other coping variables, Hedonic disengagement is expected to demonstrate linkages with personality and various psychological constructs. While Preoccupation with the problem is connected to conformity, Hedonic disengagement is likely to be correlated with the dark triad, in particular with psychopathy and, to a lesser extent, sadism (cf. Jonason et al., 2020). Moreover, Hedonic disengagement is useful in distinguishing other constructs, e.g., aggression, in terms of coping. While reactive aggression (Raine et al., 2006) is thought to be located in Negative emotional coping, proactive aggression (Raine et al., 2006) is expected to be associated with Hedonic disengagement. As regards commonalities with personality constructs, Preoccupation with the problem vs. Hedonic disengagement can result in very different social responses to stress, i.e., conformity vs. proactive aggression reinterpreted as coping, respectively.

The endorsement of Hedonic disengagement would be beneficial under low control conditions, but it could result in greater distress in situations that can be changed (Kaczmarek et al., 2011; Sęk et al., 2012). Hedonic disengagement is conducive to the protection of resources under stress (e.g., self-esteem), the acquisition of new resources (e.g., in social terms), and recovery from prolonged stress. Generally, if Hedonic disengagement is endorsed together with some form of Problem coping (e.g., Optimistic action), it may be a useful for resource maintenance and development. However, relying only on Hedonic disengagement can block psychological development and lead to a feeling of unfulfillment.

Coping Goals and the CCM

Coping can reflect both goal-directed behavior and reactive responses elicited by emotions. First, coping as purposeful activity is discussed in terms of the CCM. The coping styles postulated by the CCM can be connected with specific coping goals in the following way: Problem solving – solving the problem at hand, Problem avoidance – avoidance of experiencing a stressor and the costs of actively dealing with it, Positive emotional coping – calming down, and Negative emotional coping – discharge of negative emotions (cf. Tamir, 2009, see Table 8). The goals of the remaining coping styles include combinations of the above four goals. The goal of Optimistic action involves eliciting positive expectations about the ability to solve the problem at hand and solving the problem. The goal of Pessimistic

passivity is opposite – avoiding a problem that is preconceived as unsolvable. The negative expectations as to solving the problem elicited by Pessimistic passivity diminish one's motivation to tackle it, thus increasing the likelihood of avoiding a confrontation with the stressor. The goal of Preoccupation with the problem is to solve a demanding problem even at the expense of taking attention off one's own needs and focusing on unpleasant information. On the other hand, the goal of Hedonic disengagement is to avoid experiencing a stressor by maintaining momentary well-being (i.e., increased experiencing of positive emotions).

These relationships between coping styles and coping goals can shed new light on the problems pointed out by other authors. According to Schwarzer and Schwarzer (1996), the identification of coping intentions is a precondition for evaluating coping responses. Furthermore, Band and Weisz (1988) as well as Schwarzer and Schwarzer (1996) observed that one coping act can be used to attain several coping goals. This problem could be resolved by the notions of coping strategy and coping mode. Indeed, one coping mode includes strategies enabling the attainment of different goals (e.g., reinterpretation may serve personal growth or facilitate calming down), while the coping strategies included in one coping style are aimed at same goal. For instance, positive emotional coping strategies (e.g., being kind to oneself as one attempts to solve a problem on one's own regardless of success, using reinterpretation or humor) have the goal of calming down.

Table 8
CCM Coping Styles and the Corresponding Coping Goals

Coping style	Coping goal
Positive emotional coping	Calming down
Optimistic action	Eliciting positive expectations about the ability to solve the problem and solving the problem
Problem solving	Solving the problem
Preoccupation with the problem	Solving a demanding problem even at the expense of taking attention off one's own needs and focusing on unpleasant information
Negative emotional coping	Discharge of negative emotions
Pessimistic passivity	Avoidance of a problem that is preconceived as unsolvable
Problem avoidance	Avoidance of a stressor and the costs of active dealing with it
Hedonic disengagement	Avoidance of experiencing a problem by maintaining momentary well-being

However, coping can also be an unreflective manifestation of experienced emotions. Gruszczyńska (2013) analyzed relationships between coping and affect in a longitudinal study of cardiac patients that focused on two coping strategies: salutary coping (stimulating positive emotions through e.g., social activity, listening to music, etc.) and palliative coping (e.g., wishful thinking, fixation on negative emotions). Salutary coping was found to be a purposeful activity consistently associated with positive affect, whereas palliative coping was a reactive reflection of negative affect (Gruszczyńska, 2013). In turn, Carver and Scheier (1994), who also investigated relationships between coping and emotions, reported that only harm

emotions induced coping responses, and only in one of the three analyzed stages of transaction. Harm emotions led to a greater use of behavioral disengagement, mental disengagement, denial, and substance use.

The coping responses affected by emotions described in the above-mentioned studies are similar to Problem avoidance (Carver & Scheier, 1994) and Pessimistic passivity (cf. palliative coping; Gruszczyńska, 2013). It may be the case that three coping styles (i.e., Pessimistic passivity, Negative emotional coping, and Problem avoidance) encompass responses that are to a lesser extent subjected to reflective control. While they can express coping goals, it is also probable that under some circumstances they could be unreflective manifestations of negative emotions. The CCM seems to enable a reconciliation of these opposing points of view: coping as a reflective goal-directed action vs. coping as a reactive emotion-elicited response to stress.

Personality Dimensions, Social Forms of Coping and the CCM

Coping is usually studied from an individual perspective, but a person can influence a social group and vice versa (Berg et al., 1998; Bodenmann, 1997). Many individualistic coping models include some elements of social coping as well (and especially seeking social support), but it is difficult to find a model that would enable a comprehensive integration of individualistic and social forms of coping. This problem appears to at least partially reflect difficulties in establishing clear relationships between coping and personality dimensions (Connor-Smith & Flachsbart, 2007). Some of those dimensions (i.e., agency and communion; Bakan, 1966) are particularly important in describing social behavior. Agency refers to self-enhancement and dominance, whereas communion is associated with caring for others and cooperativeness (Abele & Wojciszke, 2007; Bakan, 1966). It seems that individualistic and social forms of coping can be integrated by including agency and communion, as well as general dimensions of personality (i.e., ego-resiliency and ego-control; Block & Block, 1980).

The two CCM dimensions that are particularly useful in terms of establishing relationships between personality and social forms of coping are Optimistic action vs. Pessimistic passivity and Preoccupation with the problem vs. Hedonic disengagement. As already said, Optimistic action vs. Pessimistic passivity and Preoccupation with the problem vs. Hedonic disengagement can be linked to ego-resiliency and ego-control (Block & Block, 1980), respectively. Moreover, Optimistic action (Pessimistic passivity) is expected to be correlated with both high (low) agency and communion. Preoccupation with the problem reveals commonalities with low agency and high communion, whereas Hedonic disengagement reflects high agency and low communion.

Optimistic action means focusing on one's own goals while taking into account other peoples' goals; it also evinces flexibility in investing social resources (e.g., in the case of true friends who support each other in achieving important goals). In contrast, Pessimistic passivity would be linked to rigidity in investing social resources (e.g., engaging in pathological relationships), which fosters social isolation. Preoccupation with the problem may be associated with greater concern for the interests of others as compared to one's own. In a stressful situation, a person exhibiting that style can try to cautiously and indirectly influence the responsible individual. Preoccupation with the problem can lead to a deeper interpersonal relationship, but it also incurs certain costs. At the other extreme, Hedonic disengagement is thought to reveal an association with gaining social resources as a result of pursuing a hedonic motive (e.g., developing a social network by going to parties) and, at least in some cases, exploiting others to avoid the problem. It is hoped that the CCM will enable establishing a more complete connection between coping, personality dimensions, and the social aspects of human functioning.

The Prospect of Integrating Various Coping Constructs within the CCM

Coping categories representing various coping approaches (i.e., functional, topological, based on action theory, models with blended categories, and models including a temporal perspective) can be assigned to their counterparts in the CCM. The ten coping models delineated in Chapter 2 are discussed in terms of similarities to and differences from the CCM. However, it should be noted that some of them conceptualize coping as a disposition, whereas others as a state. Gol and Cook's proposal (2004) cannot be unequivocally classified as dispositional or processual as in their study participants generated and sorted items. Endler and Parker's (1990a) three-dimensional model categories, Brandtstädter and Renner's (1990) assimilative and accommodative coping, and Schwarzer's (2001) future-oriented coping are dispositional constructs. The dimensions derived theoretically by Carver et al. (1989) as well as approach and avoidance coping proposed by Roth and Cohen (1986) can be interpreted both as dispositions and states. Finally, the coping dimensions described by Folkman et al. (1986), Band and Weisz's (1988) primary, secondary, and relinquished control, and the categories from the models of Connor-Smith et al. (2000) and Tobin et al. (1989) are process-oriented. Therefore, analysis of the relationships between CCM styles and categories from the last four processual coping models mentioned above requires some caution. Forms of communal coping, including dyadic coping represent a different approach in coping research, and so they will not be discussed in terms of the CCM. The integration of the CCM coping styles with categories from the ten coping models is shown in Table 9.

Table 9. *Coping Styles from the CCM and Corresponding Categories from Other Coping Models*

Coping styles from the CCM	Folkman et al. (1986)[a]	Carver et al. (1989)[a]	Endler & Parker (1990a)	Roth & Cohen (1986)	Band & Weisz (1988)	Brandtstädter & Renner (1990)	Connor-Smith et al. (2000)	Tobin et al. (1989)	Gol & Cook (2004)[a]	Schwarzer (2001)
Positive emotional coping		Humor					Secondary control engagement			
						Accommodative coping				
Optimistic action	Positive reappraisal	Positive reinterpretation and growth						Problem engagement		Proactive coping
						Assimilative coping			Task-oriented/ acceptance	
Problem solving	Planful problem-solving	Active coping Planning	Task-oriented coping				Primary control engagement			Preventive coping
		Suppression of competing activities		Approach	Primary control					
Preoccupation with the problem	Self-controlling									
	Confrontive coping							Emotion engagement		
Negative emotional coping		Focus on and venting of emotions			Secondary control				Aggressive acting out	
	Accepting responsibility						Involuntary engagement	Emotion disengagement		
			Emotion-oriented coping						Drug-oriented distraction	
Pessimistic passivity										

Table 9. – cont.

Problem avoidance	Escape--avoidance	Mental disengagement Behavioral disengagement Denial	Distraction	Avoidance	Primary control Secondary control Relin-quished control	Disengage-ment coping Involuntary disengage-ment	Problem disengage-ment	Denial/ emotion-al-disen-gagement	
								Active distraction Passive cognitive distraction	
	Distancing	Substance use	Avoidance--oriented coping						
Hedonic disengagement		Humor	Social diversion			Secondary control engagement		Soothing distraction	

Note. The names of external constructs are given in gray font when they are assigned to coping styles that graphically do not appear adjacent to each other.

[a] No counterparts within the CCM: Folkman et al. (1986): seeking social support; Carver et al. (1989): restraint coping, seeking social support for instrumental reasons, seeking social support for emotional reasons, acceptance, and turning to religion; Gol & Cook (2004): social support and self-management/relaxation.

Functional models of coping and the CCM

Coping dimensions by Folkman et al. (1986). Seven out of the eight coping strategies from the model by Folkman et al. (1986) can be located within the CCM (the exception is seeking social support, which has no equivalent there). Three categories are located between two CCM styles each: escape–avoidance is related to Problem avoidance and Pessimistic passivity, distancing to Hedonic disengagement and Problem avoidance, and confrontive coping to Preoccupation with the problem and Negative emotional coping.

It seems that the location of confrontive coping requires a comment, because the relationship between Preoccupation with the problem and aggression can be misunderstood. Confrontive coping is conceptualized in terms of aggressive efforts aimed at changing the situation (Folkman et al., 1986). While some items reflect Negative emotional coping (e.g., "I let my feelings out somehow"), other statements evince attempts at persuasion ("Tried to get the person responsible to change his or her mind"), which clearly refers to the self-controlling and prosocial character of Preoccupation with the problem. Similarly, other items (e.g., "I expressed anger to the person(s) who caused the problem") seem to be associated with the defensive and strong focusing on the stressor (reflecting Preoccupation with the problem) rather than proactive aggression (related to Hedonic disengagement).

Generally, four WCQ factors correspond to the poles of two dimensions: Problem solving vs. Problem avoidance (i.e., planful problem-solving vs. escape-avoidance), and Preoccupation with the problem vs. Hedonic disengagement (i.e., self-controlling vs. distancing). One factor (i.e., confrontive coping) reflects Negative emotional coping and Preoccupation with the problem, whereas the other two factors are associated with one pole of the remaining two CCM dimensions, that is, Negative emotional coping (i.e., accepting responsibility) and Optimistic action (i.e., positive reappraisal).

Coping dimensions derived theoretically by Carver et al. (1989). Ten out of the 15 COPE categories can be located within the CCM. Three of them are associated with more than one CCM coping style: humor resembles Positive emotional coping and Hedonic disengagement, suppression of competing activities corresponds to Preoccupation with the problem and Problem solving, whereas substance use is similar to Hedonic disengagement and Problem avoidance. However, the location of five COPE constructs (restraint coping, seeking social support for instrumental reasons, seeking social support for emotional reasons, acceptance, and turning to religion) within the CCM seems to be problematic.

While some categories from the COPE cannot be clearly linked to CCM styles, the results of various exploratory analyses of dispositional COPE scales can be reconciled within the circumplex. Research on the COPE has revealed solutions with different numbers of factors: three (e.g., Stowell et al., 2001), four (e.g., Carver et al.,

1989), or five (e.g., Deisinger et al., 1996; Sica et al., 1997). Two factors have been replicated across the vast majority of studies: avoidance (composed of denial and behavioral and mental disengagement) as well as venting of emotions/seeking social support (incorporating both seeking social support for instrumental and emotional reasons and focus on and venting of emotions) (Carver et al., 1989; Deisinger et al., 1996; Stowell et al., 2001). Both focus on and venting of emotions and seeking social support for emotional reasons seem to be associated with expressing negative emotions (a sample item for the latter is "I talk to someone about how I feel"), reflecting CCM Negative emotional coping. As mentioned above, avoidance is similar to Problem avoidance.

In the four-factor solution obtained by Carver et al. (1989), the first factor (consisting of active coping, planning, and suppression of competing activities) corresponds to Problem solving, the second one (venting of emotions/seeking social support) to Negative emotional coping, the third one (avoidance) to Problem avoidance, and the fourth one (acceptance, restraint coping, and positive reinterpretation and growth) to Optimistic action. Turning to religion had a low loading only on factor four. The three dimensions from the CCM are reflected in the above solution. Deisinger et al. (1996) distinguished five factors: problem-focused coping (containing active coping, planning, suppression of competing activities, restraint coping), positive reappraisal (acceptance, turning to religion, positive reinterpretation and growth), hedonistic escapism (humor and substance use), avoidance, and venting of emotions/seeking social support. Problem-focused coping and avoidance correspond to the poles of the Problem coping dimension. All the other factors resemble one pole from the remaining three CCM dimensions each – Optimistic action, Hedonic disengagement, and Negative emotional coping.

Sica et al. (1997) obtained a five factor-solution: the first factor (including active coping, planning, and suppression of competing activities) is similar to Problem solving, the second one (humor, substance use, denial, and mental and behavioral disengagement) to Hedonic disengagement, the third one (venting of emotions/seeking social support) to Negative emotional coping, the fourth one (positive reinterpretation and growth, acceptance, and restraint coping) to Optimistic action, and the fifth one to turning to religion. With the exception of the last one, each factor stands for one pole of one of the four dimensions of the CCM.

Task-oriented, emotion-oriented, and avoidance-oriented coping by Endler and Parker (1990a). The CISS coping categories seem to be fully compatible with the CCM. The task-orientation categories from the CISS resemble the Problem coping dimension, i.e., task-oriented coping corresponds to Problem solving and distraction is akin to Problem avoidance. In turn, the CISS person-orientation constructs refer to a configuration of Problem avoidance and the two poles of the Emotion coping dimension, i.e., emotion-oriented coping is similar to Pessimistic passivity, whereas social diversion to Hedonic disengagement.

The assignment of task-oriented coping and distraction to the opposite poles of one dimension can be intriguing, taking into account that these constructs are generally uncorrelated (Cohan et al., 2006; Endler & Parker, 1990a; McWilliams et al., 2003). An interesting study of intercorrelations between coping styles and of their genetic foundations was conducted by Kozak et al. (2005). Analysis based on genetic variances demonstrated negative correlations between task-orientation categories, i.e., task-oriented coping and distraction (r = –.28; Kozak et al., 2005). These negatively correlated CISS categories are assigned to opposite regions of the CCM.

Topological models of coping and the CCM

Approach and avoidance coping by Roth and Cohen (1986). Approach coping is associated with actions aimed at solving the problem, venting of emotions, worrying, and assimilation of traumatic experience (Roth & Cohen, 1986). According to Roth and Cohen (1986), approach coping is similar to the schizophrenia integration–recovery style (McGlashan et al., 1975), which includes a positive view of the situation and curiosity about the experience. Conversely, avoidance coping can lead to a lack of appropriate actions, emotional numbness, intrusive thoughts, and limited acknowledgement of stressful experience (Roth & Cohen, 1986).

Approach coping seems to refer to Negative emotional coping, Preoccupation with the problem, Problem solving, and Optimistic action. Avoidance coping is related to Pessimistic passivity and Problem avoidance. Positive emotional coping and Hedonic disengagement cannot be clearly linked to the approach and avoidance distinction.

Action models of coping and the CCM

Primary, secondary, and relinquished control by Band and Weisz (1988). Primary control is represented by four strategies, that is, direct problem solving, problem-focused crying, problem-focused aggression, and problem-focused avoidance. Five other strategies evince secondary control: social/spiritual support, emotion-focused crying, emotion-focused aggression, cognitive avoidance, and pure cognition. Relinquished control is reflected in one strategy, i.e., doing nothing (Band & Weisz, 1988).

Direct problem solving resembles Problem solving, problem-focused aggression and problem-focused crying refer to Preoccupation with the problem and Negative emotional coping, whereas the conceptual scope of problem-focused avoidance is similar to Problem avoidance. Primary control strategies are related to Preoccupation with the problem and to both poles of the Problem coping dimension.

Emotion-focused crying and emotion-focused aggression are related to Negative emotional coping, while cognitive avoidance and pure cognition to Problem

avoidance. Social/spiritual support has no equivalent within the CCM. Therefore, secondary control strategies evince Negative emotional coping or Problem avoidance. Relinquished control resembles Problem avoidance. It is intriguing that some strategies associated with primary, secondary, and relinquished control as interpreted by Band and Weisz (1988), are connected to Problem avoidance. These are problem-focused avoidance (primary control), cognitive avoidance, pure cognition (secondary control), and doing nothing (relinquished control). Presumably, Problem avoidance underpins these strategies, representing various forms of control.

Assimilative and accommodative coping by Brandtstädter and Renner (1990). Assimilative and accommodative coping are unrelated factors (Brandtstädter & Renner, 1990), but they reveal similar correlates (Brands et al., 2014; Brandtstädter & Renner, 1990; Van Lankveld et al., 2011). Both categories are positively associated with task-oriented coping (Brands et al., 2014; Van Lankveld et al., 2011), life satisfaction (Brandtstädter & Renner, 1990) and inversely correlated with emotion-oriented coping (Brands et al., 2014) and depression (Brandtstädter & Renner, 1990). Interestingly, there are some differences in the explanatory potential of assimilative and accommodative coping (Łuszczyńska et al., 2005). The first predicts personal growth and the latter is correlated with the acceptance of life imperfections (Łuszczyńska et al., 2005). Despite the two coping categories being psychometrically independent, they are thought to be related to adjacent regions within the CCM. Assimilative coping is associated with Problem solving and Optimistic action, whereas accommodative coping resembles Optimistic action and Positive emotional coping.

Models of coping with blended categories and the CCM

Hierarchical model of responses to stress by Connor-Smith et al. (2000). Primary control engagement coping contains problem solving, emotional expression, and emotional regulation. This problem solving construct is similar to its counterpart from the CCM. It is worth noting that some items from the two remaining primary control engagement categories might involve various responses, e.g., individuals endorsing the item "I let my feelings out" (emotional expression) can do so by crying, writing about their emotions, etc. Similarly, the item "I do something to calm myself down when having problems with my family" (emotional regulation) might entail different types of actions. Connor-Smith et al. (2000) reported that primary control engagement coping is correlated with active coping, planning, suppression of competing activities, focus on and venting of emotions, positive reinterpretation and growth, and seeking social support for instrumental and emotional reasons. This category appears to involve a wide range of responses, ranging from Preoccupation with the problem, to Problem solving, to Optimistic action.

Secondary control engagement coping includes four coping strategies, of which positive thinking (e.g., "I think of ways to laugh about it so that it won't seem so bad") is similar to Positive emotional coping, distraction (e.g., "I think about happy things to take my mind off the problem or how I'm feeling") resembles Hedonic disengagement, while acceptance (e.g., "I decide I'm okay the way I am, even though I'm not perfect") has no equivalent within the CCM. The last secondary control engagement coping strategy, cognitive restructuring, encompasses items referring to Hedonic disengagement ("I tell myself that it doesn't matter, that it isn't a big deal") and Optimistic action ("I think about the things I'm learning from the situation, or something good that will come from it"). Connor-Smith et al. (2000) found secondary control engagement coping to be associated with positive reinterpretation and growth and acceptance. Presumably, secondary control engagement coping reflects Positive emotional coping and Hedonic disengagement.

Disengagement coping incorporates denial ("When I'm around other people I act like the problems in my family never happened"), avoidance ("I try to stay away from people and things that make me feel upset or remind me of the problem"), and wishful thinking ("I wish that I were stronger, smarter, or more popular so that things would be different") (Connor-Smith et al., 2000). Denial resembles Problem avoidance, while avoidance and wishful thinking are similar to both Problem avoidance and Pessimistic passivity. Disengagement coping is related to denial, behavioral disengagement, mental disengagement, focus on and venting of emotions, and restraint coping (Connor-Smith et al., 2000). It has a similar conceptual scope to Problem avoidance and Pessimistic passivity.

Some involuntary engagement responses (Connor-Smith et al., 2000) evince Negative emotional coping, i.e., rumination ("When I have problems with my family, I can't stop thinking about what I did or said"), emotional arousal ("When problems with my family come up, I get upset by things that don't usually bother me"). Other forms of involuntary engagement, such as intrusive thoughts (e.g., "When I'm having problems with my family, I can't stop thinking about them when I try to sleep, or I have bad dreams about them") and physiological arousal ("When I have problems with my family, I feel sick to my stomach or get headaches") refer to Pessimistic passivity. Impulsive action (e.g., "When problems with my family happen, I can't always control what I do") has no counterpart in the CCM coping styles. Involuntary engagement is similar to Negative emotional coping and Pessimistic passivity.

Involuntary disengagement responses are linked to Problem avoidance and Pessimistic passivity: emotional numbing ("I don't feel like myself when I am dealing with problems in my family, it's like I am far away from everything"), cognitive interference ("When I'm having problems with my family, I can get so upset that I can't remember what happened or what I did"), inaction ("I just freeze when I have problems with my family, I can't do anything"), and escape ("I just can't

get myself to face the person I'm having problems with or the situation") (Connor-Smith et al., 2000).

In conclusion, primary control engagement coping resembles Preoccupation with the problem, Problem solving, and Optimistic action. Secondary control engagement coping refers to Positive emotional coping and Hedonic disengagement. Disengagement coping and involuntary disengagement are linked to Problem avoidance and Pessimistic passivity, whereas involuntary engagement resembles Negative emotional coping and Pessimistic passivity. Three RSQ categories, i.e., disengagement coping, involuntary engagement, and involuntary disengagement, are related to Pessimistic passivity. All three constructs are correlated with one another (Compas et al., 2006; Connor-Smith et al., 2000) and all three are associated with distress, e.g., anxiety symptoms, depression, and intrusion (Compas et al., 2006) as well as internalizing and externalizing symptoms (Connor-Smith et al., 2000; Wadsworth et al., 2005). It might be presumed that RSQ responses to stress are related to all regions of the CCM.

The hierarchical model of coping by Tobin et al. (1989). Problem engagement from Tobin et al. (1989) involves problem solving and cognitive restructuring, whereas emotion engagement consists of expressing emotions and social support. Problem engagement directly refers to a configuration of Problem solving and Positive emotional coping, and thus it is a counterpart of Optimistic action. On the other hand, express emotions is similar to Negative emotional coping, and social support has no equivalent within CCM constructs. Emotion engagement to some extent resembles Negative emotional coping.

Problem disengagement from Tobin et al. (1989) encompasses problem avoidance and wishful thinking, whereas emotion disengagement contains self-criticism and social withdrawal. Wishful thinking is assumed to be associated with Problem avoidance and Pessimistic passivity, while problem avoidance is linked to its counterpart from the CCM. Self-criticism is similar to Negative emotional coping. Social withdrawal is positively correlated with categories reflecting Problem avoidance/Pessimistic passivity (i.e., wishful thinking) and Negative emotional coping (i.e., self-criticism) (Tobin et al., 1989). Social withdrawal is associated with a wide range of psychopathologies (e.g., anxiety, depression), low self-esteem, and difficulties (e.g., rejection, victimization, academic difficulties) (Rubin et al., 2009). Thus, it might be presumed that social withdrawal reflects Pessimistic passivity. In conclusion, emotion disengagement resembles Pessimistic passivity and Negative emotional coping, emotion engagement – Negative emotional coping, problem disengagement – Problem avoidance, and problem engagement – Optimistic action.

Approach-avoidance and emotional equilibrium-disequilibrium by Gol and Cook (2004). Seven out of the nine clusters from Gol and Cook's model (Gol, 1994; Gol & Cook, 2004) can be linked to CCM categories. Task-oriented/acceptance with

sample items such as "Attempted to change the circumstances" and "Tried to not take things personally" resembles Problem solving and Optimistic action, whereas the conceptual scope of aggressive acting out (e.g., "Retaliated") is similar to that of Negative emotional coping. Denial/emotional-disengagement, with most items referring to avoidance (e.g., "Did nothing") and some reflecting focus on negative emotions (e.g., "Became depressed"), is similar to Problem avoidance and Pessimistic passivity. Also drug-oriented distraction with sample items such as "Drank" or "Cried" evinces Pessimistic passivity. Active distraction (e.g., "Went to sleep") and passive cognitive distraction (e.g., "Thought about something else") are similar to Problem avoidance. Soothing distraction (e.g., "Watched sunset", "Relaxed") has a similar conceptual scope to Hedonic disengagement. In turn, social support (e.g., "Spoke with a counselor or chaplain") and self-management/relaxation (e.g., "Prayed," "Read the Bible") lack equivalents within the CCM.

The CCM is somewhat similar to Gol and Cook's model (2004), especially in terms of the two basic dimensions: CCM Problem coping and Emotion coping as compared to Gol and Cook's approach-avoidance and emotional equilibrium-disequilibrium. However, as many as five clusters from Gol and Cook's model (2004) reflect some forms of avoidance (Pessimistic passivity, Problem avoidance and Hedonic disengagement) and only one refers to a form of Problem solving. Preoccupation with the problem and Positive emotional coping do not have counterparts in Gol and Cook's clusters. Moreover, one cluster (i.e., passive cognitive distraction) occupies the center of the concept map (cf. Figure 3; Gol & Cook, 2004). In contrast, the CCM is a full circumplex model consisting of eight evenly distributed coping styles equidistant from the center of the circle.

Models of coping with the temporal aspect and the CCM

Proactive and preventive coping by Schwarzer (2001). Although the CCM focuses on coping with the stressor at hand, its coping styles can be linked to future-oriented coping. Proactive and preventive coping are placed together with five other categories by one measurement tool (i.e., the PCI), but only the first two directly refer to coping with future stressors (Greenglass et., 1999). Proactive coping deals with future challenging goals and preventive coping is oriented to potential future problems (Schwarzer, 2001). Proactive coping is positively correlated with active coping and negatively with self-blame, whereas preventive coping is associated with active coping, but not with self-blame (Greenglass, 2002). It seems that proactive coping reflects Optimistic action, whereas preventive coping is similar to Problem solving.

Conclusion. Basically, all constructs from seven of the coping models discussed above may be expressed in terms of the CCM. The three remaining models, however, present some difficulties in this respect. The problems concern unequivocal

location of the following categories within the CCM: one out of the eight strategies from the proposal of Folkman et al. (1986), five out of the 15 constructs from the model of Carver et al. (1989), and two out of the nine clusters from Gol and Cook's (2004) approach. In conclusion, most categories from all of the ten discussed coping models are linked to CCM styles.

Gender Differences in Coping and the CCM

Gender differences in CCM styles can be estimated using empirically reported differences between men and women in similar coping constructs. As compared to men, women exhibit a greater tendency to endorse focus on and venting of emotions (Carver et al., 1989; Kallasmaa & Pulver, 2000; Torkelson & Muhonen, 2004), emotional coping (Matud, 2004), and emotion-oriented coping (Cohan et al., 2006; Endler & Parker, 1990b; Endler & Parker, 1994; Strelau et al., 2005). In some studies men have been reported to show a higher preference for some forms of problem-focused coping, e.g., planning (Torkelson & Muhonen, 2004) or suppression of competing activities (Kallasmaa & Pulver, 2000), and task-oriented coping (Cohan et al., 2006), while other authors have noted a lack of significant gender differences in task-oriented coping (Endler & Parker, 1990b; Watanabe et al., 2015). In some studies women have been found to score higher on avoidance constructs, e.g., denial and mental disengagement (Kallasmaa & Pulver, 2000), avoidance-oriented coping (Cohan et al., 2006; Howerton & Gundy, 2009), while in other works these effects have been observed only for individual age groups (Strelau et al., 2005). While some authors have reported differences between women and men in variables resembling Problem solving and Problem avoidance, the most consistent gender differences have been obtained for constructs similar to Negative emotional coping and Pessimistic passivity.

In many studies women appeared to be more stressed than men (Tamres et al., 2002), and so it can be expected that controlling for appraisal could eliminate those differences (Eaton & Bradley, 2008). Eaton and Bradley (2008) reported that women scored higher on emotion-focused coping than men, with the results remaining significant after controlling for stressor appraisal (Eaton & Bradley, 2008). Similarly, Ptacek et al. (1994) showed that when appraisal of the situation was similar across sexes, significant differences in coping persisted. Females revealed a greater preference for seeking social support and emotion-focused coping (including, e.g., self-blame, avoidance), whereas males exhibited a higher relative score on problem-focused coping (i.e., in comparison to other coping strategies; Ptacek et al., 1994). Results from the above studies (Eaton & Bradley, 2008; Ptacek et al., 1994) suggest that during socialization men and women develop different tendencies of coping with stress.

In conclusion, the most consistent results indicate that, as compared to males, females prefer categories associated with Negative emotional coping, such as focus on and venting of emotions (Carver et al., 1989; Kallasmaa & Pulver, 2000; Torkelson & Muhonen, 2004) and rumination (Johnson & Whisman, 2013; Tamres et al., 2002), as well as those related to Pessimistic passivity, i.e., emotion-oriented coping (Cohan et al., 2006; Endler & Parker, 1990b; Endler & Parker, 1994; Strelau et al., 2005). Moreover, it can be expected that females have a stronger preference for Preoccupation with the problem, which involves high self-control and is hypothesized to be connected with conformity.

The Problem of Confounding Coping Scales with Distress and the CCM

The problem of confounding coping instruments with distress or psychopathology should be addressed with respect to emotional approach coping (Austenfeld & Stanton, 2004; Stanton et al., 1994). According to Stanton et al. (1994), focus on and venting of emotions from the COPE (Carver et al., 1989) and emotion-oriented coping from the CISS (Endler & Parker, 1990a) are contaminated by distress or psychopathology (those scales refer to Negative emotional coping and Pessimistic passivity, respectively).

It is worth noting that both dispositional and situational versions of the two emotional approach coping scales have revealed correlations with problem-focused coping (Stanton et al., 2000). Similarly, relationships between emotional approach coping and problem-focused coping have been found using the daily diary method (Park et al., 2004). Stanton et al. (1994) developed a measure of what seems to be some forms of Problem coping, but those efforts cannot provide an instrument for constructs similar to Negative emotional coping or Pessimistic passivity (which are uncorrelated and negatively associated with Problem solving, respectively) that would be uncontaminated by distress.

It appears that some CCM coping styles, and especially Pessimistic passivity and Negative emotional coping, can be confounded with distress and psychopathology. Indeed, it seems impossible to measure a wide range of cognitive, behavioral, and emotional responses to stress without a risk of contaminating them with distress and psychopathology. The concept of coping is a continuation of the idea of defense mechanisms, at least some of which (e.g., denial) are regarded as coping strategies (e.g., Carver et al., 1989). In turn, defense mechanisms have been consistently and strongly associated with psychopathology (Bond, 2004; Finzi-Dottan & Karu, 2006; Vaillant, 1994). While one should strive to reduce the contamination of coping scales by distress or psychopathology, it seems natural that at least some coping constructs exhibit affinity to them. According to Lazarus et al. (1985), some confounding "reflects the fusion of variables in nature rather than being merely

the result of measurement errors of researchers. If we try to delete the overlap in variables of genuine importance, we will be distorting nature to fit a simpler, mythical metatheory of separable antecedent and consequent variables" (p. 778).

Chapter 4.
Empirical Verification of the CCM

Abstract. In this chapter, the empirical part of the monograph and hypotheses are presented. The purpose of this research was to empirically verify the CCM model. In order to empirically test the CCM, a new coping instrument was developed – the Coping Circumplex Inventory (CCI) and a series of empirical studies were conducted involving other coping measures (i.e. Coping Inventory for Stressful Situations, CISS; Endler & Parker, 1990; COPE Inventory, COPE; Carver et al., 1989) and variables related to mental health (i.e. Rosenberg Self-Esteem Scale, RSES; Snyder's Hope Scale, HS; General Health Questionnaire – 12, GHQ-12; Framingham Type A Scale, FTAS).
Keywords: *Coping Circumplex Model, Coping Circumplex Inventory, CISS, COPE, RSES, GHQ-12, FTAS, Snyder's Hope Scale*

The purpose of the research presented in the following part of the dissertation was empirical verification of the CCM model. Based on the theoretical model described above and the discussed literature, the following hypotheses were posed:

1. The CCM coping styles form a circumplex structure.
2. The opposite coping styles represent pairs of distinguishable constructs.
3. Women have a greater tendency to use Negative emotional coping, Pessimistic passivity and Preoccupation with the problem than men. Other coping styles are not characterized by gender differences.

Furthermore, it can be expected that a model of coping styles well-fitted to the circumplex structure will make it possible to systematize the coping categories representing different approaches in the literature. Hence:

4. The CCM constitutes a matrix within which constructs from other coping models can be located in a theoretically consistent manner:
   a. Task-oriented coping, active coping and planning are located close to Problem solving.
   b. Suppression of competing activities is located close to Problem solving and Preoccupation with the problem.

c. Focus on and venting of emotions is located close to Negative emotional coping.
d. Maladaptive coping (from the CISS) and emotion-oriented coping are located close to Pessimistic passivity.
e. Distraction, behavioral disengagement, mental disengagement and denial are located close to Problem avoidance.
f. Avoidance-oriented coping and substance use are located close to Problem avoidance and Hedonic disengagement.
g. Social diversion is located close to Hedonic disengagement.
h. Humor is located close to Positive emotional coping and Hedonic disengagement.
i. Positive reinterpretation and growth is located close to Optimistic action.

As it was explained in the section "Concepts of Coping Strategy and Coping Mode", a coping strategy is a response to stress associated with a particular function, while a coping mode is a set of coping strategies including similar responses to stress, but associated with different functions. For example, reinterpretation can be regarded as a coping mode, whereas positive reinterpretation and growth can be understood as two strategies within this mode. It is hoped that the CCM can be used to distinguish between even those coping constructs that differ in very subtle ways. Hence:

5. The CCM creates a space for a theoretically consistent location of different coping strategies from coping modes:
   a. Growth is located close to Optimistic action and Problem solving.
   b. Positive reinterpretation is located close to Positive emotional coping and Optimistic action.
   c. Positive humor is located close to Positive emotional coping.
   d. Hedonic humor is located close to Hedonic disengagement.
   e. Problem restraint is located close to Problem solving.
   f. Avoidant restraint is located close to Problem avoidance.

In addition to integrating diverse coping constructs, an important function of the CCM is to predict mental health variables. Hence:

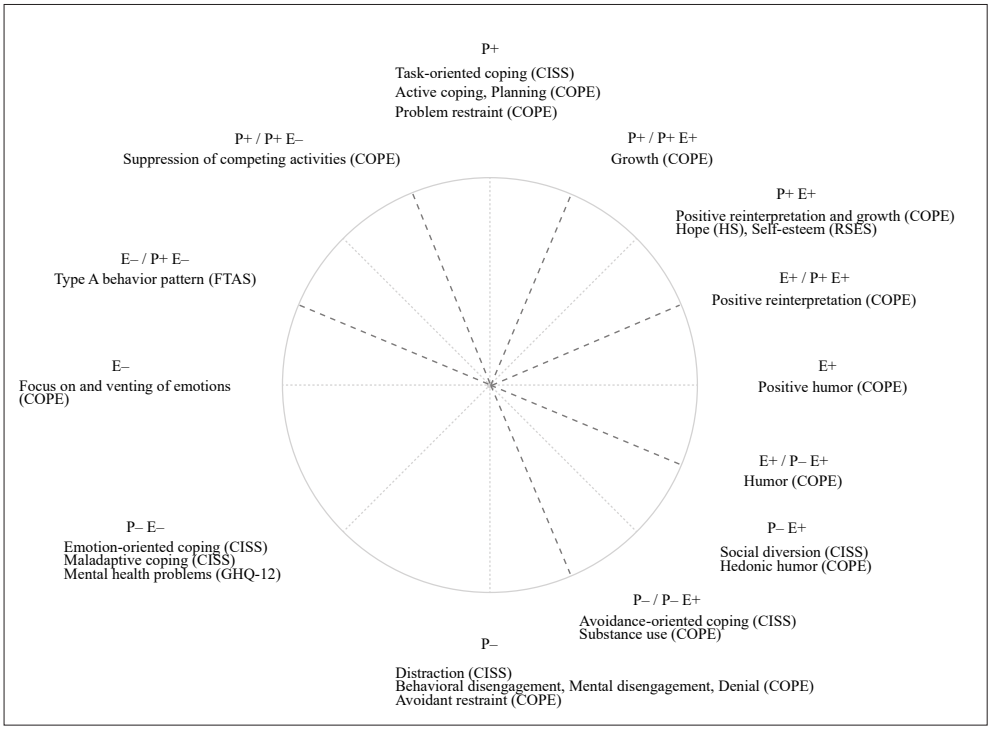
6. The CCM coping styles predict mental health:
   g. Hope and self-esteem are related to Optimistic action.
   h. Mental health problems are related to Pessimistic passivity.
   i. Type A behavior pattern (TABP) is related to Preoccupation with the problem and Negative emotional coping.

The hypothesized locations of the various coping and mental health constructs within the CCM are given in Figure 5.

In order to empirically test the CCM and to verify the above hypotheses, a new coping instrument was developed – the Coping Circumplex Inventory (CCI) and a series of empirical studies were conducted involving other measures of coping and variables related to mental health.

Figure 5

Graphical representation of the hypothesized locations of coping constructs and mental health variables within the CCM



Note. E+: Positive emotional coping; P+ E+: Optimistic action; P+: Problem solving; P+ E–: Preoccupation with the problem; E–: Negative emotional coping; P– E–: Pessimistic passivity; P–: Problem avoidance; P– E+: Hedonic disengagement.

CISS: Coping Inventory for Stressful Situations (Endler & Parker, 1990a); COPE (Carver et al., 1989);

FTAS: Framingham Type A Scale (Haynes et al., 1978);

GHQ-12: General Health Questionnaire – 12 (Goldberg & Williams, 1988);

HS: Hope Scale (Snyder et al., 1991); RSES: Rosenberg Self-Esteem Scale (Rosenberg, 1965).

Chapter 5.
Method

Abstract. In order to enable empirical verification of the Coping Circumplex Model (CCM), a new instrument, the Coping Circumplex Inventory (CCI), was developed based on a series of studies involving a total sample of 1,483 participants. This chapter presents a description of the analyses and instruments used to assess the external validity of the CCM. The circumplex structure was investigated via a Procrustes-based procedure while confirmatory analysis was done in RANDALL as well as using multidimensional scaling (MDS). Confirmatory Factor Analysis (CFA) was applied to test the possibility of distinguishing between opposite constructs. The positions of external variables within the CCM was determined using the vector method. External validity was assessed using instruments that measure coping (i.e., the Coping Inventory for Stressful Situations, CISS and the COPE Inventory, COPE) and mental health (the Rosenberg Self-Esteem Scale, RSES; Snyder's Hope Scale, HS; the General Health Questionnaire – 12, GHQ-12; and the Framingham Type A Scale, FTAS).
Keywords: *Coping Circumplex Model, Coping Circumplex Inventory, CISS, COPE, Circumplex analysis, MDS, CFA, Vector method, Structural Summary Method*

Research Design and Participants

In order to enable empirical verification of the CCM, a new instrument was developed over the course of four studies – the Coping Circumplex Inventory (CCI). The purpose of three preliminary studies was to draft the CCI and improve its psychometric properties, while the fourth study (i.e., the Main Study) verified the CCM model itself. All studies were carried out in Poland, and each of them involved an independent sample. The participants in all studies were volunteers and the questionnaires were anonymous. Psychology students were not included in any of the studies. In Study 1 and 2, the participants were high school students and university undergraduates (mostly the former in Study 1 and mostly the latter in Study 2). Samples in Study 3 and 4 consisted only of university undergraduates.

The results of preliminary studies are presented in this chapter (as they were focused on the development of the CCI measure), while the results of the Main Study are described in Chapter 6.

Procedure in Preliminary Studies. Study 1 involved a sample of 334 subjects (214 females, 112 males, eight with no gender reported; M_{age} = 17.98, *SD* = 1.43) who were administered the initial pool of 74 CCI items. Participants in Study 2 were 216 subjects (161 females, 49 males, six with no gender reported; M_{age} = 22.83, *SD* = 4.25) who responded to the second pool of 155 CCI items. Study 3 was conducted on 284 participants (146 females, 121 males, 17 with no gender reported; M_{age} = 21.27, *SD* = 2.52), of whom 279 completed an improved CCI measure consisting of 154 items, as well as the Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965) to examine associations between the CCI and self-esteem.

Procedure in the Main Study. The aim of the Main Study was to create the final version of the CCI and to test the CCM model by estimating construct validity (internal as well as with respect to external criteria). The sample consisted of 649 university students (352 females, 280 males, 17 with no gender reported; M_{age} = 22.02, *SD* = 2.80). Study 4 had two parts: 4A and 4B. Sample sizes for the preliminary studies and the Main Study are given in Table 10. Study 4A involved 444 subjects (234 females, 197 males, 13 with no gender reported; M_{age} = 21.66, *SD* = 2.25). The participants completed the fourth pool of items: either 120 CCI items only (*n* = 26) or together with the CISS (*n* = 215), the Hope Scale (HS; Snyder et al., 1991) (*n* = 201), the General Health Questionnaire-12 (GHQ-12; Goldberg & Williams, 1988) (*n* = 187), or the Framingham Type A Scale (FTAS; Haynes et al., 1978) (*n* = 193). Then, after analysis, 13 items with the worst properties were excluded from the pool of items, and the final 107-item CCI was obtained. That measure was administered in Study 4B together with the COPE questionnaire. The sample in that study consisted of 205 participants (118 females, 83 males, four with no gender reported; M_{age} = 22.81, *SD* = 3.62).

Table 10
Demographic Characteristics of Samples in Preliminary Studies and in the Main Study

Study	*N*	% of women	Age	
			M	*SD*
1	334	65.6	17.98	1.43
2	216	76.7	22.83	4.25
3	284	54.7	21.27	2.52
4	649	55.7	22.02	2.80

Statistical Analyses

Internal structure analysis

Analysis of the circumplex. To investigate the circumplex structure, two confirmatory and one exploratory methods were applied. The first confirmatory test was based on Procrustes rotation (Barrett, 2019), which is widely used in analyzing circumplexes (DeYoung et al., 2013; Kiesler et al., 1997; Strus & Cieciuch, 2017). This method indicates to what extent the empirical matrix is convergent with the theoretical one. Both matrices include component loadings representing a solution with two components. The empirical matrix contains the results of principal component analysis (PCA) with Varimax rotation. Component loadings for the theoretical matrix are obtained by transforming theoretical angles with sine and cosine functions.

The use of PCA is well-established in examining circumplex structures (Gurtman & Pincus, 2003; Locke, 2000; Ojanen et al., 2005; Tracey & Rounds, 1996; Wiggins et al., 1989). PCA does have some shortcomings, e.g., it can inflate the variance explained for the components (Schmitt, 2011), but it enables a comparison of results in circumplex structures. It was expected that two components would explain most of the variation and that they would explain similar proportions of the variation.

Based on PCA, analyses involving two types of Procrustes rotation were performed: with and without row normalization (Barrett, 2019). Both rotation methods are orthogonal and both minimize the sum of squared deviations between the empirical and theoretical matrices. Importantly, rotation without row normalization does not modify the range of component loadings, while one with row normalization increases or decreases component loadings to express them in the same range of values. In this study, Procrustes rotation with row normalization was applied to obtain empirical angles, whereas rotation without row normalization enabled the calculation of communalities (cf. Strus & Cieciuch, 2017). What is important, in contrast to other methods (e.g., Browne, 1992; Grassi et al., 2010), when angular locations are derived from Procrustes rotation, no angular location has to be set to zero, and angles for all variables are estimated. Communalities (h^2) and angular locations (θ) for each coping style were computed using the formulas adopted from the interpersonal approach (e.g., Wiggins et al., 1988):

$$\text{communality} = \lambda_{problem}^{2} + \lambda_{emotion}^{2} \quad (1)$$

$$\text{angular location} = \tan^{-1}(\lambda_{problem}/\lambda_{emotion}) \quad (2)$$

where $\lambda_{problem}$ and $\lambda_{emotion}$ are factor loadings obtained from PCA with Problem and Emotion coping dimensions.

In addition to communalities and angular location, the fit of the empirical matrix to the theoretical one was assessed by means of congruence coefficients (Barrett,

1986). There are two types of such coefficients: for the model (i.e., providing information about consistency between empirical and theoretical matrices) and for particular variables (i.e., providing information about consistency between the empirical location of a given variable and its theoretical position). Congruence coefficients range from –1 to 1, with values greater than 0.85 indicating an acceptable fit, and those above 0.95 – a very good fit (Barrett, 1986). Importantly, while congruence coefficients reflect consistency between theoretical angles and empirical locations, they do not provide information about communalities. Analyses involving Procrustes rotation were performed in Orthosim 3.0 (Barrett, 2019).

The second confirmatory analysis was performed using RANDALL (Tracey, 1997), which is widely employed in investigations of circumplex structures (Locke, 2000; Locke & Sadler, 2007; Markey & Markey, 2009; Tracey, 2002; Yik et al., 2011). RANDALL adopts Hubert and Arabie's (1987) randomization test to examine hypothesized order relations. The package provides a correspondence index (CI; Hubert & Arabie, 1987), which is a measure of fit of a correlation matrix to order predictions. The CI ranges from –1.00 (all predictions violated) to 1.00 (all predictions met), with 0.00 indicating that 50% of the predictions were met.

The exploratory method was multidimensional scaling (MDS; Kruskal, 1964; Kruskal & Wish, 1978), which can visualize similarities between variables and is convenient in exploring circumplex structures (Gurtman & Pincus, 2003; Tracey, 2000). In MDS, model fit is assessed using Stress 1 values. Kruskal and Wish (1978) suggested the following interpretation of Stress 1 results: Stress 1 > .20: poor; .10 ≤ Stress 1 ≤ .20: fair; .05 ≤ Stress 1 ≤ .10: good; .025 ≤ Stress 1 ≤ .05: excellent; .00: perfect. MDS, PCA, as well as correlation analysis were carried out in SPSS 24. Procrustes-based analysis, RANDALL, and MDS were done for both preliminary studies and the Main Study.

Confirmatory Factor Analysis. In the presented model, four bipolar dimensions were identified with at least two constructs (Preoccupation with the problem and Hedonic disengagement) being new in the literature. It seemed worthwhile to test the possibility of distinguishing between opposite constructs, which was done using CFA in both preliminary studies and the Main Study. The correlation matrix for all items was employed as the input file. To examine the distinctiveness of opposite constructs, CFA was specified with two opposite latent variables (e.g., Preoccupation with the problem and Hedonic disengagement), as indicated by their items. Four CFAs were needed to include all eight scales. CFAs were performed in AMOS 24 (Arbuckle, 2013).

The fit of CFA models may be assessed with chi-square, the comparative fit index (CFI), and the root mean square error of approximation (RMSEA). Chi-square was not applied in fit assessment due to its sensitivity to sample size (Barrett, 2007). The other indicators, CFI > .90 and RMSEA < .08 (Browne & Cudeck, 1993; Marsh et al., 2004) were adopted as thresholds of satisfactory CFA fit.

Location of External Variables in the Circumplex and Regressions Predicting Mental Health

Location of external variables in the circumplex. The vector method from the interpersonal approach (Gurtman, 1991) was adopted to estimate the positions of external variables within the CCM. First, the overall values of the Problem coping and Emotion coping dimensions were calculated in a similar way to agentic and communal vectors in the interpersonal circumplex (Ojanen et al., 2005; Wiggins et al., 1989). The two vectors were computed for each person using the following equations:

$$\text{Problem coping}_{vect} = \Sigma z_i * \sin(\theta_i) \quad (3)$$

$$\text{Emotion coping}_{vect} = \Sigma z_i * \cos(\theta_i) \quad (4)$$

where z_i is the standardized score for each coping style. Next, correlations between the vectors and external criteria were calculated. Vector length and angular location for each external variable were estimated using the following equations (Gurtman, 1991):

$$\text{vector length} = (r_{problem}^{\ 2} + r_{emotion}^{\ 2})^{½} \quad (5)$$

$$\text{angular location} = \tan^{-1}(r_{problem} / r_{emotion}) \quad (6)$$

where $r_{problem}$ and $r_{emotion}$ denote correlation coefficients between external variables and the Problem coping vector and Emotion coping vector, respectively. While angular location reveals affinity to a particular region of the circumplex, the variance shared with the CCM is reflected in vector length. The interpretation of vector length is similar to that of the correlation coefficient and takes values from –1 to 1. Angular locations with very low vector lengths are uninformative, and so an arbitrary cut-off for vector length can be adopted. For instance, Wiggins and Broughton (1991) used a cut-off of .25, while Holtforth et al. (2007) regarded vector lengths above .10 as satisfactory. Other authors did not apply any cut-offs for vector length (e.g., Locke, 2000). In this dissertation, vector length greater than .20 is assumed to be meaningful in terms of the CCM.

Importantly, the angular location of external criteria requires interpretation – placement in a particular coping style. Most external variables were assigned to one coping style, but some to two. When the difference between the theoretical angle of the coping style and the angular location of the external criterion was 15° or less, that variable was assigned to one coping style. However, if the external variable was situated between two coping styles (i.e., the difference between its angle and that of the coping style was greater than 15°), it was assigned to two

coping styles. The location of external variables within the CCM was determined using SPSS 24 and Microsoft Excel 2003.

Regressions predicting mental health. The location of external criteria with specific angles and vector lengths may be a very elegant method, but it does not provide an insight into certain relationships between those variables and different regions of the circumplex, e.g., with two opposite coping styles. The important goal of coping research is to maximize its predictive power for mental health. In order to test the utility of CCM coping styles in predicting mental health indicators (self-esteem, hope, mental health problems, TABP) multiple regression analysis was applied in SPSS 24.

The following regression assumptions were tested: linearity, homoscedasticity, absence of multicollinearity and non-autocorrelation of residuals:

- Linearity was determined using a scatter plot.
- Homoscedasticity was evaluated using the Breusch-Pagan and Koenker tests (macro for SPSS: Daryanto, 2018). In both tests, the null hypothesis about homoscedasticity should be rejected at $p < .05$.
- The variance inflation factor (VIF) was used as an index of multicollinearity with values under 3.50 regarded as satisfactory.
- The absence of autocorrelations of residuals was determined by the Durbin-Watson test, with values between 1.5 and 2.5 regarded as normal.

The assumptions of linearity and the absence of multicollinearity and autocorrelations were met for all analyses. However, in models predicting self-esteem, overall hope, hope agency, and the TABP, both Breusch-Pagan and Koenker tests revealed heteroskedasticity. Every model was evaluated with Ordinary Least Squares (OLS), whereas for self-esteem, overall hope, hope agency and the TABP, heteroskedasticity-consistent standard error estimators were used in OLS regression (HCSE; Hayes & Cai, 2007; macro for SPSS: Hayes, 2007).

Sinusoidal Relationships with External Variables. A circumplex model must demonstrate sinusoidal correlations with external criteria, which can be analyzed with curve modeling. In practice, a cosine function is used within the *structural summary method* (SSM; Gurtman, 1992) developed for the purpose. The pattern of correlations between the eight coping styles and external variables can be modeled using the following formula (Gurtman, 1992; Wright et al., 2009):

$$r_i = e + a * \cos(\theta_i - \delta) \quad (7)$$

where r_i is the predicted correlation with the coping style *i*, *e* adjusts the initial value of r_i (i.e., mean of the observed correlations), *a* is the amplitude of the cosine curve (i.e., the distance between the mean and peak correlations), θ_i is the angle

assigned to the coping style *i*, and δ reflects the angular displacement of the peak of the curve from 0°.

Goodness of fit to the expected cosinusoidal pattern may be computed using the R^2 formula (Gurtman, 1992; Wright et al., 2009):

$$R^2 = 1 - \frac{\sum_{i=1}^{8} (r_i - \hat{r}_i)^2}{\sum_{i=1}^{8} (r_i - \bar{r})^2} \tag{8}$$

where r_i is the observed correlation, $\hat{r}_i$ is the expected correlation, and $\bar{r}$ is the mean observed correlation. $R^2 \geq .80$ indicates a good fit to the cosine curve, $R^2 \geq .70$ can been interpreted as an acceptable fit, and $R^2 < .70$ signifies an inadequate pattern of correlations (Wright et al., 2009).

Additionally, the fit of a correlation pattern to a cosine curve can be expressed with a simple and well-known measure, that is, Normalized Mean Absolute Error (NMAE; Gustafson & Shaocai, 2012; Janssen & Heuberger, 1995). In the following dissertation, NMAE is expressed as follows:

$$\text{NMAE} = \frac{\frac{1}{8}\sum_{i=1}^{8} |r_i - \hat{r}_i|}{r_{i\,max} - r_{i\,min}} \tag{9}$$

where r_i is the observed correlation, $\hat{r}_i$ is the expected correlation, and $r_{i\,max}$ and $r_{i\,min}$ signify the observed maximum and minimum correlations, respectively. NMAE can be expressed as a percentage and has a very simple interpretation as it reflects the mean distance between the observed and expected correlations. While NMAE was provided, the fit to the cosine curve was evaluated using R^2. Sinusoidal correlation patterns were analyzed with Microsoft Excel 2003.

Instruments

Development of the Coping Circumplex Inventory

Four versions of the CCI were developed, with each subsequent version exhibiting better psychometric properties than the previous one. All four pools of items were created by the Author of this dissertation. Items with the worst properties were discarded from subsequent studies, and new items were developed to improve the CCI (circumplex structure and reliabilities). Items were created and selected based on the theoretical model, MDS, reliabilities as well as item-total score correlations. Furthermore, each item in each version of the CCI had to exhibit the strongest

correlation with the scale to which it was assigned (which was tested using Pearson's correlation coefficient).

The first and all subsequent versions of the measure were administered with the following instructions:

> Below are given descriptions of various people's reactions to difficult situations. Specify how you react when you are in a difficult and stressful situation. For each question, select one answer: 1 (*very seldom*), 2 (*seldom*), 3 (*from time to time*), 4 (*often*), 5 (*very often*).

The internal structure of coping styles in Study 1. The first version of the CCI was created by selecting 39 items from the pool to form 8 scales (from 4 to 6 items per scale). Reliabilities for all the scales used in each of the preliminary studies and item-total correlation data are presented in Tables 11 and 12. The circumplex structure was explored using PCA. The eigenvalues of the first three components were 2.85, 1.73, and 1.41. Following rotation, the first two components accounted for 35.03% and 22.25% of the total variance. Angular locations and communalities for each preliminary study are given in Table 13. Communalities were in the range .34–.67, with the mean being .57. Communality for Preoccupation with the problem was very low – .34. Discrepancies between theoretical and empirical angular locations ranged from 2.81° to 20.54°. The mean difference between theoretical and empirical angular locations was 8.72°. MDS results for studies 1–3 are depicted in Figure 6. The obtained Stress 1 value of .16 suggests a fair fit to the data (Kruskal & Wish, 1978). The arrangement of constructs was generally congruent with the theoretical model. However, MDS and PCA independently demonstrated asymmetry in the model (it was more elliptical than circumplex). The congruence coefficient for the model was .98. A randomization test of hypothesized orders yielded CI = .913, $p < .001$, with 275 out of 288 predictions met. The model from the first study was a circumplex with deviations, which can be labeled a quasi-circumplex (Guttman, 1954).

Table 11
Cronbach's a for the First Three Versions of the CCI

Coping style	Version 1	Version 2	Version 3
Positive emotional coping	.66	.71	.70
Optimistic action	.71	.72	.80
Problem solving	.74	.78	.79
Preoccupation with the problem	.43	.62	.70
Negative emotional coping	.73	.80	.77
Pessimistic passivity	.73	.82	.80
Problem avoidance	.71	.80	.82
Hedonic disengagement	.54	.66	.81
M	.66	.74	.77

Table 12
Mean, Minimum, and Maximum Item-Total Correlations for the First Three Versions of the CCI

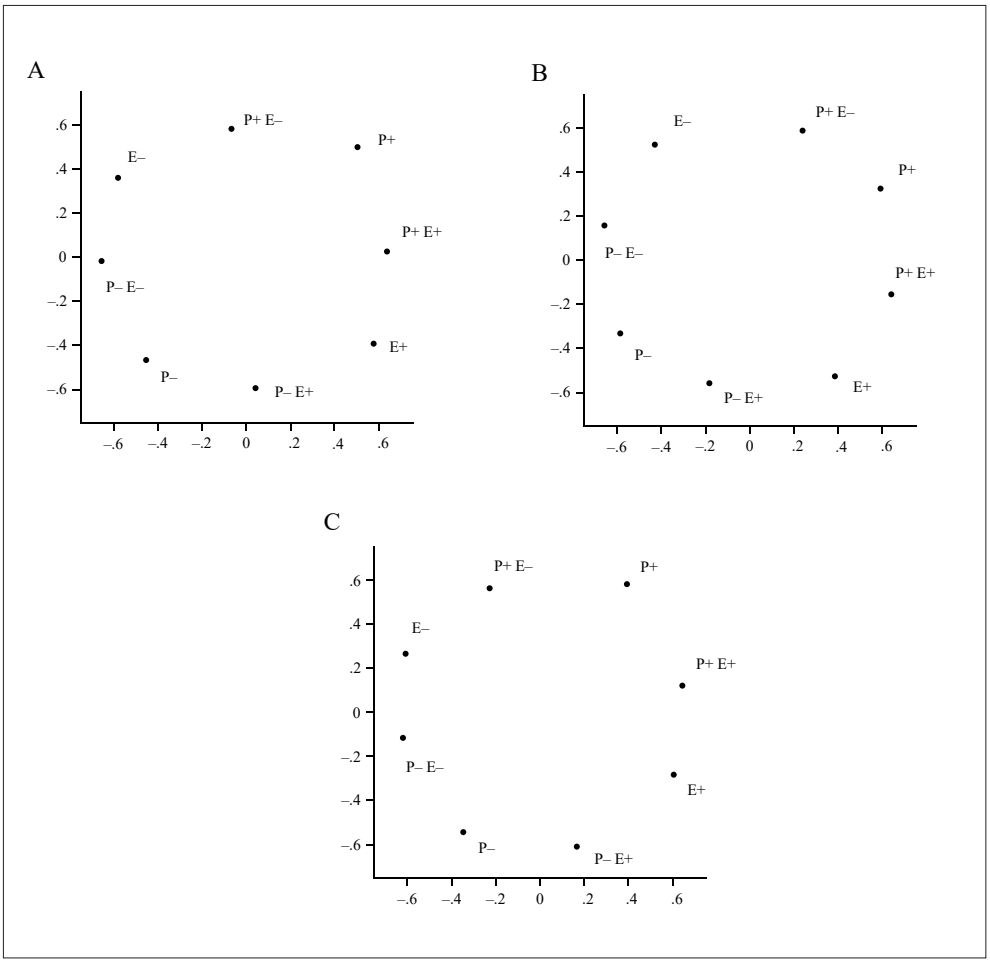
Coping style	Item-total correlation		
	Study 1	Study 2	Study 3
Positive emotional coping	.42 [.34 – .50]	.45 [.35 – .58]	.43 [.35 – .49]
Optimistic action	.50 [.47 – .51]	.48 [.38 – .52]	.52 [.43 – .59]
Problem solving	.47 [.40 – .52]	.53 [.46 – .57]	.50 [.40 – .59]
Preoccupation with the problem	.24 [.20 – .27]	.38 [.30 – .49]	.43 [.35 – .48]
Negative emotional coping	.46 [.40 – .52]	.54 [.44 – .65]	.49 [.43 – .56]
Pessimistic passivity	.50 [.45 – .54]	.54 [.46 – .60]	.47 [.39 – .59]
Problem avoidance	.46 [.39 – .55]	.53 [.46 – .63]	.56 [.49 – .68]
Hedonic disengagement	.33 [.28 – .36]	.41 [.37 – .46]	.52 [.39 – .64]

Table 13
Angular Locations, Communalities and Congruence Coefficients for the First Three Versions of the CCI

Coping style	θ_T	Study 1			Study 2			Study 3		
		θ_E	h^2	Congr.	θ_E	h^2	Congr.	θ_E	h^2	Congr.
Positive emotional coping	0°	6.99°	.67	.99	6.85°	.68	.99	1.38°	.63	1.00
Optimistic action	45°	33.25°	.50	.98	40.70°	.69	1.00	33.37°	.55	.98
Problem solving	90°	78.43°	.62	.98	83.28°	.61	.99	84.88°	.61	1.00
Preoccupation with the problem	135°	142.49°	.34	.99	115.07°	.45	.94	151.16°	.43	.96
Negative emotional coping	180°	200.54°	.63	.94	195.96°	.60	.96	190.12°	.67	.98
Pessimistic passivity	225°	221.73°	.64	1.00	231.70°	.68	.99	221.06°	.67	1.00
Problem avoidance	270°	267.19°	.64	1.00	272.89°	.73	1.00	267.58°	.74	1.00
Hedonic disengagement	315°	309.68°	.55	1.00	313.36°	.62	1.00	310.62°	.66	1.00
				.98			.98			.99

Note. Study 1 (*N* = 334); Study 2 (*N* = 216); Study 3 (*N* = 284). θ_T: theoretical angle; θ_E: empirical angle; $h2$: communality; Congr.: congruence coefficient.

Figure 6
MDS of coping styles for the first three versions of the CCI



Note. A: Study 1, B: Study 2, C: Study 3.
E+: Positive emotional coping; P+ E+: Optimistic action; P+: Problem solving; P+ E–: Preoccupation with the problem; E–: Negative emotional coping; P– E–: Pessimistic passivity; P–: Problem avoidance; P– E+: Hedonic disengagement.

CFA results for studies 1–3 are shown in Table 14. In one model, the variance of the latent variable Preoccupation with the problem was on the border of significance (p = .063), but that problem was resolved by adding correlations between error terms. In the case of CFA for Positive emotional coping and Negative emotional coping, CFI and RMSEA values differed from expectations. Correlating error terms improved the fit of the model to acceptable CFI and RMSEA levels, but the upper interval of RMSEA was above .08. In conclusion, four pairs of coping styles were distinguishable constructs.

Table 14
CFA Goodness of Fit Indexes in Preliminary Studies of the First Three Versions of the CCI

CFA model	x2	*df*	CFI	RMSEA
Problem solving–Problem avoidance				
V1 Without correlations	97.29	43	0.924	0.062 [0.045, 0.078]
V2 Without correlations	99.24	64	0.949	0.051 [0.030, 0.070]
V3 Without correlations	149.01	89	0.945	0.049 [0.035, 0.062]
Positive emotional coping–Negative emotional coping				
V1 Without correlations	140.90	43	0.861	0.083 [0.068, 0.098]
V1 One correlation added	111.60	42	0.901	0.071 [0.055, 0.087]
V2 Without correlations	79.31	64	0.975	0.033 [0.000, 0.055]
V3 Without correlations	120.78	64	0.919	0.056 [0.041, 0.071]
Optimistic action–Pessimistic passivity				
V1 Without correlations	30.87	26	0.992	0.024 [0.000, 0.052]
V2 Without correlations	75.73	64	0.982	0.029 [0.000, 0.052]
V3 Without correlations	256.95	134	0.892	0.057 [0.046, 0.068]
V3 One correlation added	245.46	133	0.901	0.055 [0.044, 0.065]
Preoccupation with the problem–Hedonic disengagement				
V1 Without correlations*	28.74	19	0.928	0.039 [0.000, 0.067]
V1 One correlation added	23.24	18	0.961	0.030 [0.000, 0.060]
V2 Without correlations	52.76	34	0.922	0.051 [0.020, 0.076]
V3 Without correlations	100.14	76	0.969	0.034 [0.010, 0.050]

Note. CFI: Comparative Fit Index; RMSEA: Root Mean Square Error of Approximation; CI: confidence interval. V1: first version of the CCI; V2: second version of the CCI; V3: third version of the CCI.
* For one model, the variance of the latent variable Preoccupation with the problem was on the border of significance (p = .063).

Internal structure of coping styles in Study 2. The third version of the measure included 49 items selected from the pool (from 5 to 8 per scale). PCA revealed the following eigenvalues of the first three components: 3.05, 1.99 and 1.45. Following rotation, the two components explained 32.96% and 30.12% of the total variance. Communalities were in the range of .45–.73 with a mean of .63. Disparities between theoretical and empirical angles were from 1.64° to 19.93° with a mean of 8.12° (see Table 13). MDS for Study 2 is presented in Figure 6. The obtained Stress 1 value was .12, which indicates a fair fit to the data. The congruence coefficient for the model was .98 and RANDALL analysis showed that 281 of 288 predictions were met (CI = .951, p < .001).

The first eigenvalue was substantially higher than the second one, and that asymmetry was also found in MDS. Communality for Preoccupation with the problem was small. However, the locations of coping styles revealed by MDS were consistent with the theoretical model. Moreover, RANDALL yielded a high CI. The second version of the CCI depicted a quasi-circumplex structure of coping styles. As shown in Table 14, all four CFAs revealed an acceptable fit to the data, so opposite pairs of coping styles were distinguished.

Internal structure of coping styles in Study 3. The third version of the CCI contained 60 items from the pool (from 6 to 10 per scale). The first three components had the following eigenvalues in PCA: 2.82, 2.14 and 1.53 Following rotation, the total variance accounted for by the first two components was 34.28% and 27.64%. Communalities were in the range .43–.74 with a mean of .62. Discrepancies between theoretical and empirical angular location were from 1.38° to 16.16° with a mean of 6.90° (see Table 13). Figure 6 shows MDS for Study 3. The obtained Stress 1 value for the model was .12, which indicates a fair fit to the data. The congruence coefficient for the model was .99 and CI from a randomization test of hypothesized orders performed using RANDALL was .972, $p < .001$, with 284 of 288 predictions met.

Communality for Preoccupation with the problem was small, but differences between the theoretical and empirical positions were not substantial. MDS and randomization analysis indicated a satisfactory fit to the circumplex model. Thus, it can be concluded that the third version of the CCI demonstrated a circumplex structure.

CFA results are given in Table 14. Three models provided a satisfactory fit to the data, while CFA for Optimistic action–Pessimistic passivity exhibited an insufficient fit. After correlating two error terms, the fit for Optimistic action–Pessimistic passivity was improved to reach the expected values. Finally, all opposite coping styles were distinguished.

Reliabilities in the Main Study. The final version of the CCI had from 7 to 12 items per scale, with a total of 76 items. It revealed satisfactory reliabilities, ranging from .78 to .86 as shown in Table 15. Cronbach's alphas for women ranged from .79 to .87, and those for men from .77 to .87. Mean item-total correlations for the entire sample were from .45 to .57 (see Table 16). Three items from the Preoccupation with the problem scale had item-total correlations below .40. The lowest item-total correlations for the remaining seven scales were above .40. The original final Polish version of the CCI and its English translation are given in the Appendix.

Table 15
Cronbach's a for Final Version of CCI

Coping style	Total sample	Women	Men
Positive emotional coping	.78	.79	.77
Optimistic action	.80	.82	.78
Problem solving	.86	.87	.85
Preoccupation with the problem	.80	.82	.78
Negative emotional coping	.82	.84	.79
Pessimistic passivity	.85	.86	.84
Problem avoidance	.85	.85	.87
Hedonic disengagement	.84	.84	.84
M	.83	.84	.82

Table 16
Mean, Minimum, and Maximum Item-Total Correlations for the Final Version of the CCI

Coping style	Item-total correlation
Positive emotional coping	.49 [.41 – .57]
Optimistic action	.51 [.41 – .61]
Problem solving	.54 [.45 – .62]
Preoccupation with the problem	.45 [.38 – .53]
Negative emotional coping	.56 [.41 – .71]
Pessimistic passivity	.53 [.41 – .61]
Problem avoidance	.56 [.45 – .69]
Hedonic disengagement	.57 [.51 – .65]

Coping strategies of internalization and reinterpretation. The third and fourth versions of the CCI contained items reflecting two modes (i.e., internalization and reinterpretation). In both versions, items corresponding to internalization were included in the scales of Pessimistic passivity and Hedonic disengagement. In the third version, items associated with reinterpretation were incorporated in Optimistic action and Positive emotional coping. In the fourth version those items were included in the scales of Problem solving, Optimistic action and Positive emotional coping. Items representing internalization and reinterpretation in the final version are given in Table 17.

Summing up, four versions of the CCI had been created and each represented better psychometric properties than previous one. The final version revealed satisfactory reliabilities, and its internal structure was also confirmed, as it will be shown in Chapter 6 (“Results”).

Table 17
Items Associated with Various Coping Strategies within the Coping Modes of Reinterpretation and Internalization in the Final Version of the CCI

Coping style	Items assigned to coping mode	
	Reinterpretation	
Positive emotional coping	39.	I look at the problem from a different perspective and find something that would calm me down.
	55.	I don't think that the problem is all that serious and I manage to relax.
	61.	I find something comforting about the situation.
Optimistic action	4.	I notice something interesting and positive about the difficult situation.
	20.	A difficult situation may bring new opportunities.
	44.	I try to see the situation from a different perspective and I remain in a good mood.
	52.	I notice something about the situation that makes it easier for me to take action towards my goal.
Problem solving	57.	I look at the situation from a different perspective and choose the most adequate actions.
	Internalization	
Pessimistic passivity	56.	When someone treats me badly it is my fault.
	59.	In some way I've brought about the difficult situation myself.
	73.	It seems to me that I've caused the problem.
Hedonic disengagement	26.	I'm not looking for a solution and I think that things will go my way after all.
	42.	I don't think about the difficult situation and I feel that nothing unpredictable is going to happen.

Measures in Study 3

Global self-esteem. In Study 3, self-esteem was assessed with the RSES (Rosenberg, 1965; Polish adaptation: Łaguna et al., 2007). This construct is represented by ten items with responses given on 4-point scale, from 1 (*strongly agree*) to 4 (*strongly disagree*). In Study 3, Cronbach's alpha was .90.

Measures in the Main Study

Coping styles from the CISS. Coping styles were evaluated with the CISS (Endler & Parker, 1990a; Polish adaptation: Strelau et al., 2005), which is a 48-item inventory measuring task-oriented, emotion-oriented, and avoidance-oriented styles. The avoidance-oriented scale has two subscales: distraction and social diversion. Items were scored on a 5-point Likert scale, from 1 (*not at all*) to 5 (*very much*). Cronbach's alphas were as follows: task-oriented coping style = .86, emotion-oriented coping style = .90, avoidance-oriented coping style = .86, distraction = .80, and social diversion = .76.

Coping constructs from the COPE. A broad range of coping constructs were measured using the 60-item COPE questionnaire (Carver et al., 1989; Polish adaptation: Juczyński & Ogińska-Bulik, 2009) containing 15 scales: acceptance, active coping, behavioral disengagement, denial, focus on and venting of emotions, humor, mental disengagement, planning, positive reinterpretation and growth, turning to religion, restraint coping, substance use, suppression of competing activities, seeking social support for emotional reasons, and seeking social support for instrumental reasons. Responses were recorded on a 4-point Likert scale ranging from 1 (*I usually don't do this at all*) to 4 (*I usually do this a lot*).

Cronbach's alphas were from .35 to .91, M = .70. The lowest Cronbach's alpha was found for active coping. Item 47 ("I take direct action to get around the problem") was negatively correlated with the scale (r = –.05). It was the only item from the active coping scale to reveal a significant positive relationship with behavioral disengagement (r = .32, p < .001) and mental disengagement (r = .33, p < .001). After excluding it, the reliability of the scale was .57. The four-item version of this scale was labelled "active coping 1" and the three-item version "active coping 2." Both were included in analyses.

The theoretical model of the CCM delineated in Chapter 3 introduced a distinction between coping strategies and coping modes. It has been postulated that the scales of positive reinterpretation and growth, humor, and restraint coping can be considered coping modes with narrower categories (i.e., strategies) identified within them. In other words, based on the COPE it is possible to compute the following scales: growth (items 1 and 59), positive reinterpretation (items 29 and 38), positive humor (items 8 and 20), hedonic humor (items 36 and 50), problem restraint (items 10 and 41), and avoidant restraint (items 22 and 49). Cronbach's alphas of these scales were as follows: growth = .54, positive reinterpretation = .58, positive humor = .78, hedonic humor = .74, problem restraint = .42, and avoidant restraint = .45. For a more detailed analysis of relationships between these six strategies and the CCM, the strategies and their items were projected onto the circumplex (see Chapter 6).

In order to investigate associations between CCM constructs and COPE scales in a comprehensive way, the internal structure of the latter was analyzed. In previous exploratory studies on the COPE, three (Kallasmaa & Pulver, 2000; Litman, 2006; Stowell et al., 2001), four (Carver et al., 1989; Litman, 2006; O'Connor & O'Connor, 2003) or five factors (Deisinger et al., 1996) underlying covariance among scales were identified. In the present work, the COPE structure was studied on scales using PCA with an oblique rotation (Oblimin). The number of extracted components was determined in terms of parallel analysis (O'Connor, 2000; Turner, 1998). In this method, the eigenvalues for actual data are compared to eigenvalues from random data, which optimizes the number of identified components (Russell, 2002). Parallel analysis was done using SPSS (O'Connor, 2000).

PCA on the COPE yielded the following eigenvalues for the first five components: 3.1, 2.9, 1.8, 1.1 and 1.0. According to parallel analysis, the first three eigenvalues from actual data were greater than the 95th percentile of distribution of eigenvalues obtained from random data. The three components explained 52.19% of the total variance. The results of PCA are given in Table 18. The first component (i.e., venting of emotions and seeking social support) contained seeking social support for instrumental reasons, seeking social support for emotional reasons, focus on and venting of emotions, as well as turning to religion. The second component (i.e., hedonic escapism) included both behavioral and mental disengagement, denial, humor, acceptance and substance use. The third one (i.e., problem solving and cognitive restructuring) comprised suppression of competing activities, positive reinterpretation and growth, planning, active coping and restraint coping. Restraint coping was the only construct with substantial cross-loadings – stronger with the 3rd factor and weaker with the 2nd factor. Cronbach's alphas for the three factors were from .81 to .89.

Table 18
Factor Loadings of COPE Scales Following Oblique Rotation

COPE scale	Coping factors		
	I	II	III
Seeking social support for emotional reasons	.83		
Seeking social support for instrumental reasons	.72		
Focus on and venting of emotions	.71		
Turning to religion	.67		
Behavioral disengagement		.71	
Mental disengagement		.69	
Denial		.67	
Humor		.66	
Acceptance		.57	
Substance use		.46	
Suppression of competing activities			.72
Positive reinterpretation and growth			.71
Planning			.69
Active coping			.68
Restraint coping		.42	.55

Note. n = 205. All loadings greater than .40 are presented.

Hope. Participants completed the HS (Snyder et al., 1991; Polish adaptation: Łaguna et al., 2005) to obtain an overall score as well as scores its two components: pathways and agency. The instrument has eight proper items plus four filler items. Responses are given on an 8-point scale, from 1 (*definitely false*) to 8 (*definitely true*). Cronbach's alpha coefficients for hope were .86, and those for both components were .80.

Mental health problems. While the RSES and HS were used to assess the positive aspects of mental health, the GHQ-12 (Goldberg & Williams, 1988; Polish adaptation: Makowska & Merecz, 2001) was administered to measure mental health problems, including somatic symptoms, anxiety-insomnia, social dysfunction, and severe depression. Several models of the measured factor structure were proposed, but only a one-factor model with a response bias on the negatively worded items was acceptable (Rey et al., 2014; Romppel et al., 2013). Thus, in the current study only the overall score was computed. The respondents were asked to assess the degree of health symptoms over the past few weeks using the following response formats: *less than usual, no more than usual, rather more than usual, much more than usual*. From among several available scoring methods for GHQ, a Likert scale was applied (items coded 0-1-2-3). In the presented study, the reliability of this scale was .86.

TABP. The TABP was measured with the FTAS, which consists of ten self-descriptive statements. This instrument was developed in the Framingham Heart Study (Haynes et al., 1978; Polish adaptation: Juczyński, 2012). Five items have a four-point response scale: *not at all*, *somewhat*, *fairly well*, *very well*, while the other items are scored with a binary response format (*yes* or *no*). In the analyzed sample, the FTAS revealed a rather poor reliability ($\alpha = .55$).

Chapter 6.
Results

Abstract. In order to verify the Coping Circumplex Model (CCM), the internal validity of its operationalization instrument (i.e. the Coping Circumplex Inventory, CCI), and its relationships with external coping scales and mental health indicators, were investigated. The final version of the CCI represented a well-fitted circumplex model, which can also be treated as a confirmation of the CCM circumplex structure. Moreover, the distinctiveness of opposite coping styles were confirmed with CFAs. After that, external variables were located within the CCM. All three constructs from the Coping Inventory for Stressful Situations (CISS) and ten of the 15 constructs from the COPE Inventory (COPE) had substantial associations with the CCM coping styles. Moreover, hope, self-esteem, mental health problems, and Type A behavior patterns demonstrated meaningful linkages with the CCM space.
Keywords: *Coping Circumplex Model, Coping Circumplex Inventory, Circumplex model, Vector method, Structural Summary Method*

In order to verify hypotheses 1 and 2, the circumplex structure of CCM coping styles and the distinctiveness of opposite coping styles were scrutinized. Next, hypothesis 3 about gender differences in CCM coping styles was tested. After that, hypotheses 4 and 5 concerning relationships with external coping scales were verified. Subsequently, associations between mental health indicators and CCM coping styles predicted in hypothesis 6 were analyzed. Finally, the sinusoidal pattern of correlations between the CCM styles and all external variables was investigated.

Internal Structure of Coping Styles

First, descriptive statistics of CCM indicators (i.e., CCI scales) are presented, and then the circumplex pattern of relationships within CCM coping styles in the Main

Study is scrutinized (hypothesis 1). Next, the distinctiveness of opposite coping styles is analyzed using the CFA measurement model (hypothesis 2).

Descriptive statistics. Means, standard deviations, skewness, excess kurtosis for coping styles, as well as their Spearman correlations with age are given in Table 19. According to West et al. (1995), an absolute skewness of >2 and an absolute excess kurtosis of >4 indicate nonnormality. The obtained skewness and excess kurtosis were low, suggesting that the coping styles are approximately normally distributed. Moreover, four significant correlations with age were found: positive for Problem solving, Optimistic action and Positive emotional coping and negative for Pessimistic passivity.

Table 19
Descriptive Statistics for CCM Coping Styles

Coping style	*M*	*SD*	Skewness	Excess kurtosis	Age rho
Positive emotional coping	3.01	0.71	−0.04	−0.03	.12**
Optimistic action	3.22	0.70	−0.16	0.05	.13**
Problem solving	3.45	0.63	−0.12	−0.21	.10**
Preoccupation with the problem	3.21	0.60	−0.09	0.02	.02**
Negative emotional coping	3.23	0.79	−0.07	−0.45	−.08**
Pessimistic passivity	2.81	0.71	0.06	0.01	−.11**
Problem avoidance	2.63	0.78	0.09	−0.55	−.00**
Hedonic disengagement	2.45	0.78	0.34	−0.29	.02**

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Circumplex structure of the CCM. Intercorrelations between the CCM scales (see Table 20) demonstrated a circumplex pattern. Each coping style revealed the strongest positive correlations with the styles located at 45° with respect to them, and the weakest correlations with those located at 90°. Importantly, each coping style revealed the strongest negative relationship with the opposite construct (e.g., Problem solving with Problem avoidance).

Table 20
Intercorrelations among CCM Coping Styles in the Main Study

Coping style	1	2	3	4	5	6	7	8
1. Problem solving	1.00							
2. Preoccupation with the problem	.53	1.00						
3. Negative emotional coping	−.02	.49	1.00					
4. Pessimistic passivity	−.38	.18	.63	1.00				
5. Problem avoidance	**−.51**	−.30	.18	.54	1.00			
6. Hedonic disengagement	−.30	**−.41**	−.22	.15	.64	1.00		
7. Positive emotional coping	.20	−.15	**−.35**	−.24	.18	.53	1.00	
8. Optimistic action	.55	.14	−.32	**−.41**	−.17	.17	.65	1.00

Note. $N = 649$. Correlations higher than .02 are significant ($p < .001$). The highest expected correlations are bolded; coefficients expected to be close to zero are underlined.

PCA revealed the following eigenvalues 2.73, 2.50 and 1.50. Following Varimax rotation, the first two components explained 33.15% and 32.21% of the total variance. Communalities ranged from .53 to .74, with the mean being .65. Differences between theoretical and empirical angular locations were from .43° to 9.81°, with the mean being 4.97° (see Table 21). MDS for the Main Study is given in Figure 7. The Stress 1 value obtained from MDS was .10, which suggests a good fit to the data. Results from PCA and MDS proved a nearly perfect fit to the circumplex model. The congruence coefficient for the model was .99 and RANDALL showed that 287 out of 288 predictions were met (CI = 0.993, $p < .001$). The final version of the CCI represented a well-fitted circumplex model, which can also be treated as a confirmation of the CCM circumplex structure.

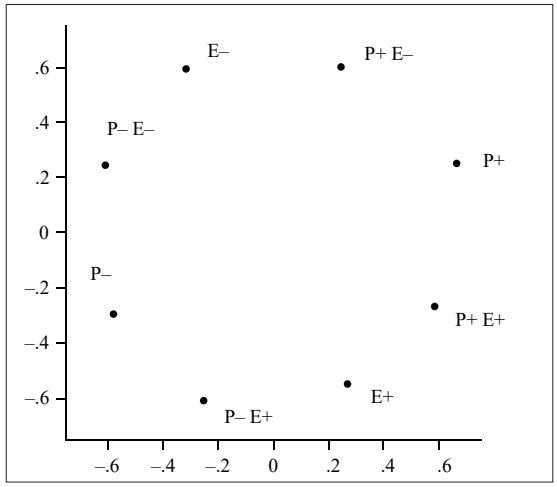
Table 21
Angular Locations, Communalities, and Congruence Coefficients for CCM Coping Styles from the Main Study

Coping style	Total sample				Women			Men		
	θ_T	θ_E	h^2	Congr.	θ_E	h^2	Congr.	θ_E	h^2	Congr.
Positive emotional coping	0°	0.43°	.64	1.00	4.61°	.66	1.00	354.24°	.61	1.00
Optimistic action	45°	35.83°	.65	.99	39.45°	.71	1.00	31.24°	.56	.97
Problem solving	90°	82.83°	.69	.99	84.45°	.74	1.00	81.25°	.62	.99
Preoccupation with the problem	135°	133.17°	.53	1.00	128.79°	.59	.99	139.25°	.46	1.00
Negative emotional coping	180°	189.81°	.59	.99	184.77°	.64	1.00	197.14°	.53	.96
Pessimistic passivity	225°	227.52°	.66	1.00	224.79°	.64	1.00	230.10°	.69	1.00
Problem avoidance	270°	277.11°	.73	.99	276.97°	.69	.99	277.74°	.79	.99
Hedonic disengagement	315°	313.31°	.74	1.00	316.19°	.73	1.00	309.16°	.76	.99
				.99			1.00			.99

Note. Main Study (N = 649). θ_T: theoretical angle; θ_E: empirical angle; $h2$: communality; Congr.: congruence coefficient.

Next, circumplex analyses were conducted separately for the female and male subsamples. As compared to PCA and RANDALL, MDS does not allow for visualizing small differences in the circumplex structure, and so only the first two methods were applied in gender analysis. In PCA, the eigenvalues were 2.82, 2.59, 1.39 and 2.66, 2.37, 1.63 for women and men, respectively. The first two factors explained 34.54% and 33.10% of the total variance for women and 31.68% and 31.16% for men. Communalities were in the range of .59–.74 for women and .46–.79 for men. The communality for Preoccupation with the problem for men was low – .46, but congruence values for all variables were above .95. Discrepancies between theoretical and empirical angular locations for the two sexes separately were from .21° to 17.14°. Also, differences between the sexes in empirical locations for particular coping styles were from .77° to 12.37° (see Table 21). The congruence coefficients for the model were 1.00 and .99 for women and men, respectively. The CI from

Figure 7
MDS of CCM coping styles in the Main Study



Note. E+: Positive emotional coping; P+ E+: Optimistic action; P+: Problem solving; P+ E–: Preoccupation with the problem; E–: Negative emotional coping; P– E–: Pessimistic passivity; P–: Problem avoidance; P– E+: Hedonic disengagement.

a randomization test of hypothesized orders was 1.000 for women with 288 of 288 predictions met ($p < .001$). For men, the CI was .962 with 282 of 288 predictions met ($p < .001$). The structure of coping for both sexes was very similar with data showing a good fit to the circumplex.

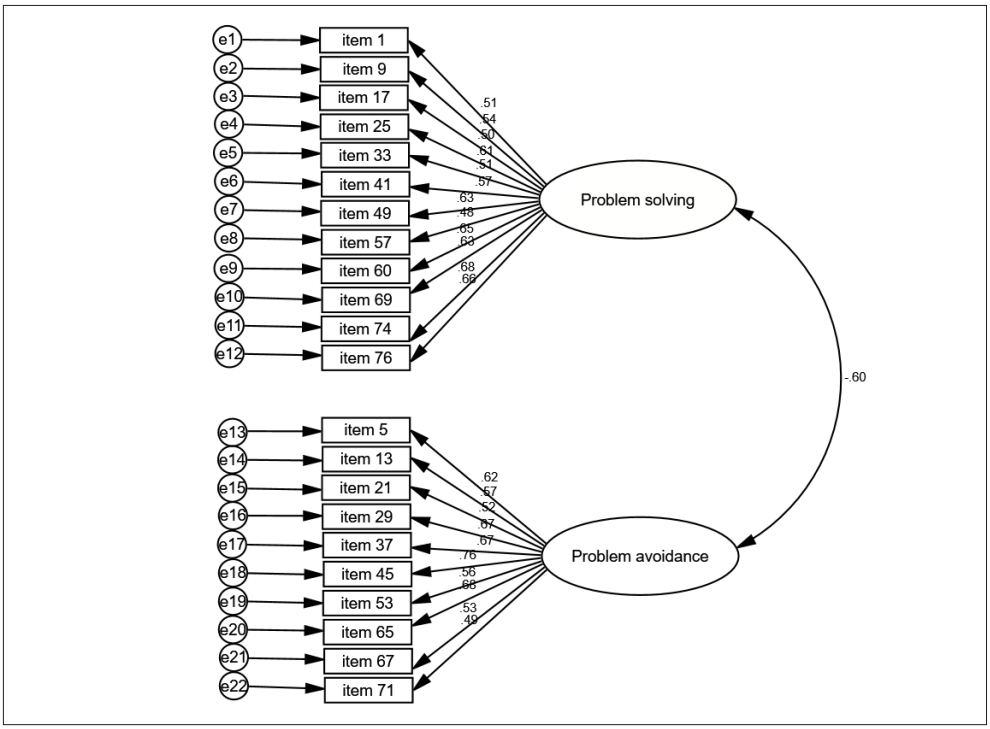
CFA – testing the bipolarity of coping dimensions in the Main Study. Figures 8–11 show CFA models and Table 22 presents CFA fit indices. The models for Problem solving–Problem avoidance and Optimistic action–Pessimistic passivity revealed a satisfactory fit to the data. In the two remaining models, the CFI was below the threshold of acceptance. However, in the following scales, correlations between error terms assigned to items with similar content were added: Positive emotional coping ("I notice something funny about it" and "I make fun of the situation"), Negative emotional coping ("When something difficult is going on, I'm critical towards myself" and "I often think about what happened to make sure I didn't do anything wrong"), and Preoccupation with the problem ("I don't think about my own needs but I focus all my energy on solving the problem" and "I forget about the whole world and I try to do as much as I am able to"). In all final models, the CFI was above .90 and the upper confidence interval for RMSEA was below .08. Opposite constructs were distinguishable and correlations between the latent factors were from –.47 to –.60.

Table 22
Goodness of Fit Indices for CFAs in the Main Study

CFA model	x2	*df*	CFI	RMSEA
Problem solving – Problem avoidance				
Without correlations	559.57	208	.920	.051 [.046, .056]
Positive emotional coping – Negative emotional coping				
Without correlations	422.10	89	.873	.076 [.069, .083]
With two correlations	274.06	87	.928	.058 [.050, .065]
Optimistic action – Pessimistic passivity				
Without correlations	441.56	151	.909	.055 [.049, .060]
Preoccupation with the problem – Hedonic disengagement				
Without correlations	521.38	169	.888	.057 [.051, .062]
With one correlation	464.28	168	.906	.052 [.047, .058]

Note. CFI: Comparative Fit Index; RMSEA: Root Mean Square Error of Approximation; CI: confidence interval.

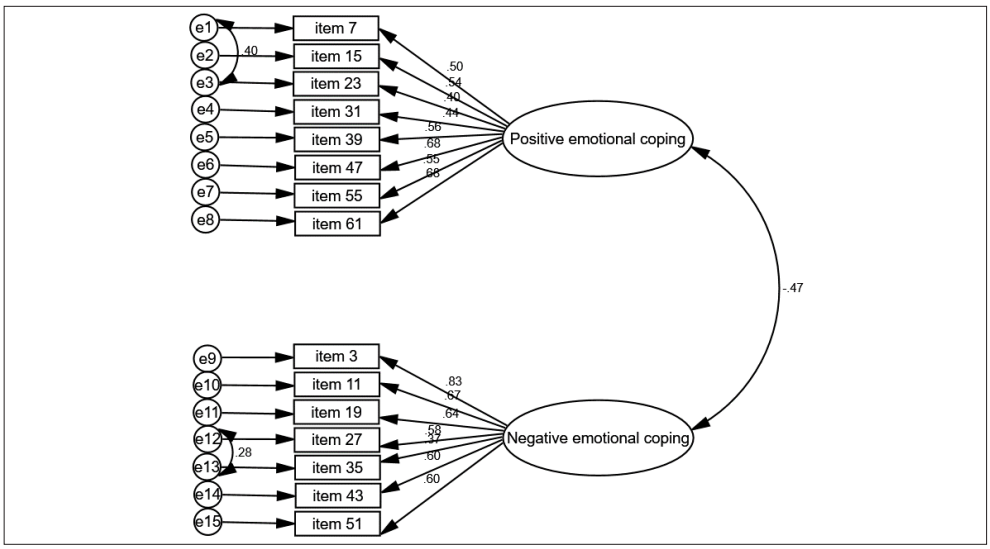
Figure 8
CFA for Problem solving and Problem avoidance in the Main Study



Note. The coefficients shown are standardized estimates.

Figure 9

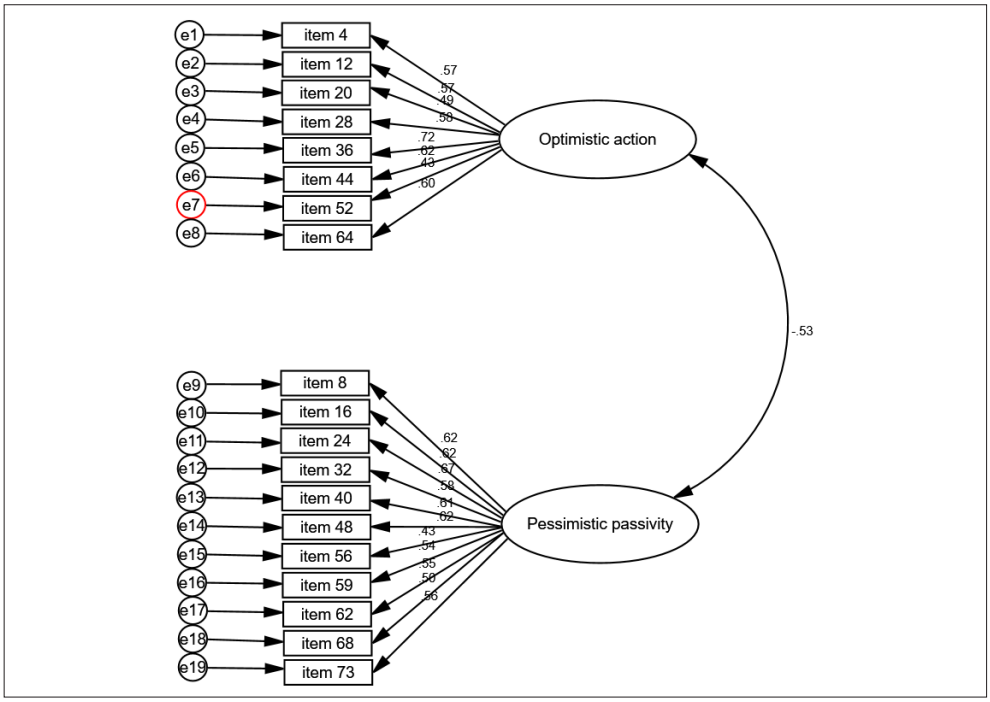
CFA for Positive emotional coping and Negative emotional coping in the Main Study



Note. The coefficients shown are standardized estimates.

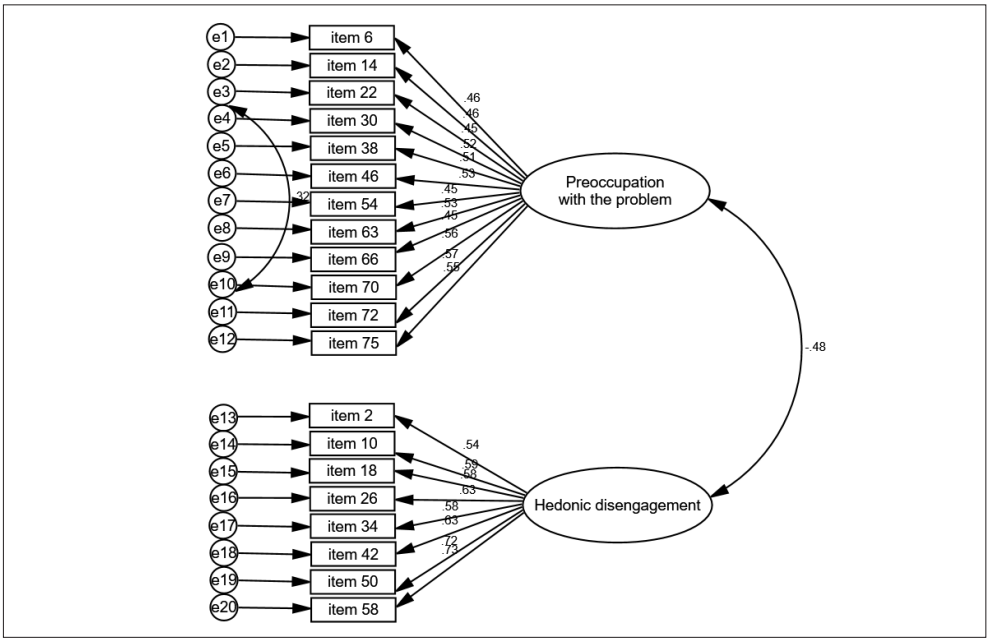
Figure 10

CFA for Optimistic action and Pessimistic passivity in the Main Study



Note. The coefficients shown are standardized estimates.

Figure 11
CFA for Preoccupation with the problem and Hedonic disengagement in the Main Study



Note. The coefficients shown are standardized estimates.

Gender Differences in Coping Styles

Some authors have observed that gender difference patterns depend on the type of scoring method (raw vs. relative scores, cf. Eaton & Bradley, 2008; Ptacek et al., 1994; Tamres et al., 2002). Relative scores can be obtained by dividing scores for individual scales by overall coping (e.g., Eaton & Bradley, 2008) or by centration (i.e., subtracting the mean for all coping scales from the mean for a given scale; e.g., Tamres et al., 2002). In the research presented herein gender differences were analyzed based on the final version of the CCI using raw and centered scores (from a sample of 352 women and 280 men) in SPSS 24.

In the beginning, the assumption of homogeneity of variances was checked following the guidelines of Blanca et al. (2017), according to which this assumption is met when the ratio of the largest to the smallest variances is below 1.5. In the case of all 16 variables, the ratios of variances were less than 1.5, so ANOVA was performed. Gender differences in coping styles are shown in Table 23. Based on raw and centered scores, men revealed a higher preference for Problem solving and Positive emotional coping, whereas women scored higher on Negative emotional coping. Women also reported higher raw scores for Preoccupation with the problem and Problem avoidance, but for centered scores those effects bordered on statistical significance. Men were more likely to engage in Optimistic action

expressed in centered scores, but in the case of raw scores the difference was on the verge of significance. The effect sizes for the differences observed across both scoring methods (i.e., for Problem solving, Positive emotional coping and Negative emotional coping) were small, ranging from 0.6 to 2.6% of the variance, with the strongest one found for Negative emotional coping.

Table 23
Gender Differences in CCM Coping Styles Based on the Main Study

Coping style	Women		Men		*F*	*p*	η^2
	M	*SD*	*M*	*SD*			
Positive emotional coping$_r$	2.95	.71	3.07	.71	4.48	.035	.007
Positive emotional coping$_c$	–.06	.61	.08	.59	8.47	.004	.013
Optimistic action$_r$	3.17	.71	3.27	.68	3.50	.062	.006
Optimistic action$_c$	.16	.65	.28	.62	6.08	.014	.010
Problem solving$_r$	3.40	.63	3.50	.63	3.91	.049	.006
Problem solving$_c$	.39	.62	.51	.66	5.59	.018	.009
Preoccupation with the problem$_r$	3.25	.61	3.15	.57	4.36	.037	.007
Preoccupation with the problem$_c$	.24	.57	.16	.56	3.05	.081	.005
Negative emotional coping$_r$	3.36	.80	3.10	.76	16.58	.000	.026
Negative emotional coping$_c$	.35	.75	.11	.67	16.80	.000	.026
Pessimistic passivity$_r$	2.86	.71	2.76	.70	2.90	.089	.005
Pessimistic passivity$_c$	–.16	.65	–.23	.60	2.28	.131	.004
Problem avoidance$_r$	2.69	.76	2.57	.80	3.89	.049	.006
Problem avoidance$_c$	–.32	.67	–.42	.67	3.63	.057	.006
Hedonic disengagement$_r$	2.41	.76	2.49	.81	1.87	.172	.003
Hedonic disengagement$_c$	–.60	.67	–.50	.68	3.84	.051	.006

Note. N = 632 (352 females and 280 males).
r: raw score; c: centered score.

Location of Coping Variables in the CCM

External criteria were located within the circumplex based on correlations with the Problem coping and Emotion coping vectors, which correspond to the independent dimensions of Problem coping and Emotion coping. In the third version of the CCI, the correlation between the vectors was weak (r = .21, p < .001), and in the final version of the CCI the correlation was close to zero (r = .08, p > .05). Also, correlations were calculated between external variables and the CCM coping styles.

Location of COPE constructs within the CCM. Associations between CCM styles and COPE categories was investigated using the 15 COPE scales, higher-order factors, and strategies recognized within coping modes (i.e., reinterpretation, humor and restraint). First, scales of the COPE were analyzed.

Coping scales from the COPE. Relationships between the COPE constructs and the CCM coping styles are given in Table 24 and Figure 12. Ten of the 15 scales from the COPE revealed substantial associations with the CCM styles (VL ≥ .20). Active coping 1, active coping 2, and planning were linked to Problem solving. While the angular location of suppression of competing activities was closest to Problem solving, its correlation with Problem solving was very similar to that with Preoccupation with the problem. Mental disengagement, behavioral disengagement and denial were related to Problem avoidance. Humor was located between Positive emotional coping and Hedonic disengagement, substance use was related to Hedonic disengagement (but with a shift towards Problem avoidance). Positive reinterpretation and growth was assigned to Optimistic action. Focus on and venting of emotions was associated with Negative emotional coping and Pessimistic passivity. Acceptance, turning to religion, restraint coping, seeking social support for instrumental reasons, and seeking social support for emotional reasons had vector lengths of less than .20.

Table 24. *Relationships Between CCM Coping Styles and COPE Scales*

Scale	α	θ_T	E+	P+ E+	P+	P+ E–	E–	P– E–	P–	P– E+	Coping dimensions		VL	θ_E	$\theta_T - \theta_E$	Coping style[a]
											PC	EC				
Factors obtained after PCA																
I – Venting of emotions and seeking social support	.89	–	–.12	–.17	–.07	.28	.37	.23	.06	–.13	–.05	–.35	.35	187.99°	–	**E–**
II – Hedonic escapism	.85	–	.21	–.08	–.34	–.23	.05	.31	.60	.61	–.54	.16	.57	286.68°	–	**P–/ P– E+**
III – Problem solving and cognitive restructuring	.81	–	.32	.49	.56	.36	–.08	–.29	–.31	–.20	.53	.21	.57	68.44°	–	**P+/ P+ E+**
Problem-focused coping																
Active coping 1	.35	90°	.20	.32	.49	.42	.06	–.18	–.24	–.18	.44	.05	.44	83.98°	6.02°	**P+**
Active coping 2	.57	90°	.22	.39	.58	.46	.02	–.29	–.42	–.33	.60	.06	.60	84.07°	5.93°	**P+**
Planning	.73	90°	.18	.38	.59	.43	.00	–.20	–.43	–.30	.57	.05	.57	84.89°	5.11°	**P+**
Suppression of competing activities	.61	112.5°	.06	.20	.38	.37	.00	–.16	–.24	–.25	.39	–.02	.39	93.39°	19.11°	**P+**
Restraint coping	.50	–	.06	.05	.02	.06	.13	.13	.23	.13	–.10	–.02	.11	261.79°	–	P–
Seeking social support for instrumental reasons	.83	–	.02	.00	.02	.15	.15	.09	–.01	–.12	.04	–.12	.13	162.00°	–	E–/ P+ E–
Emotion-focused coping																
Seeking social support for emotional reasons	.86	–	.07	–.02	.03	.22	.18	.04	–.04	–.08	.06	–.12	.13	152.28°	–	E–/ P+ E–
Positive reinterpretation and growth	.65	45°	.46	.57	.41	.17	–.18	–.34	–.28	–.08	.44	.38	.58	49.03°	–4.03°	**P+ E+**
Acceptance	.69	–	.14	.08	–.06	–.11	–.01	.04	.20	.16	–.13	.13	.18	315.44°	–	P– E+
Turning to religion	.91	–	.07	.05	.04	.22	.10	.04	.00	–.03	.06	–.06	.08	134.01°	–	P+ E–
Denial	.67	270°	.04	–.19	–.33	–.15	.11	.32	.50	.47	–.49	.00	.49	270.12°	–0.12°	**P–**
"Less useful"																
Behavioral disengagement	.75	270°	–.05	–.27	–.43	–.13	.20	.46	.55	.42	–.57	–.13	.58	257.55°	12.45°	**P–**
Mental disengagement	.57	270°	.12	–.10	–.27	–.14	.10	.28	.45	.46	–.42	.06	.43	278.07°	–8.07°	**P–**

Table 24. – cont.

Scale	α	θ_T	E+	P+ E+	P+	P+ E–	E–	P– E–	P–	P– E+	Coping dimensions		VL	θ_E	$\theta_T - \theta_E$	Coping style[a]
											PC	EC				
Focus on and venting of emotions	.61	180°	–.27	–.32	–.19	.23	.59	.35	.15	–.19	–.17	–.54	.57	197.83°	–17.83°	**E–/ P– E–**
Recently developed																
Humor	.83	337.5°	.45	.18	–.06	–.19	–.20	–.01	.26	.48	–.19	.42	.46	335.70°	1.80°	**E+/ P– E+**
Substance use	.89	292.5°	.15	–.02	–.07	–.01	.00	.08	.23	.33	–.18	.11	.21	301.10°	–8.60°	**P– E+**
Strategies of reinterpretation																
Growth	.54	67.5°	.29	.47	.48	.26	–.12	–.30	–.38	–.15	.50	.24	.55	64.55°	2.95°	**P+/ P+ E+**
Positive reinterpretation	.58	22.5°	.48	.47	.20	.03	–.17	–.27	–.09	.03	.24	.40	.47	30.84°	–8.34°	**P+ E+**
Strategies of humor																
Positive humor	.78	0°	.45	.22	–.01	–.18	–.24	–.08	.16	.38	–.10	.43	.44	346.74°	13.26°	**E+**
Hedonic humor	.74	315°	.37	.11	–.09	–.16	–.12	.07	.32	.50	–.25	.33	.42	322.80°	–7.80°	**P– E+**
Strategies of restraint																
Problem restraint	.42	90°	.07	.20	.24	.20	.06	–.05	–.07	–.10	.20	.01	.20	87.99°	2.01°	**P+**
Avoidant restraint	.45	270°	.02	–.12	–.22	–.11	.16	.26	.44	.30	–.37	–.03	.37	265.36°	4.64°	**P–**

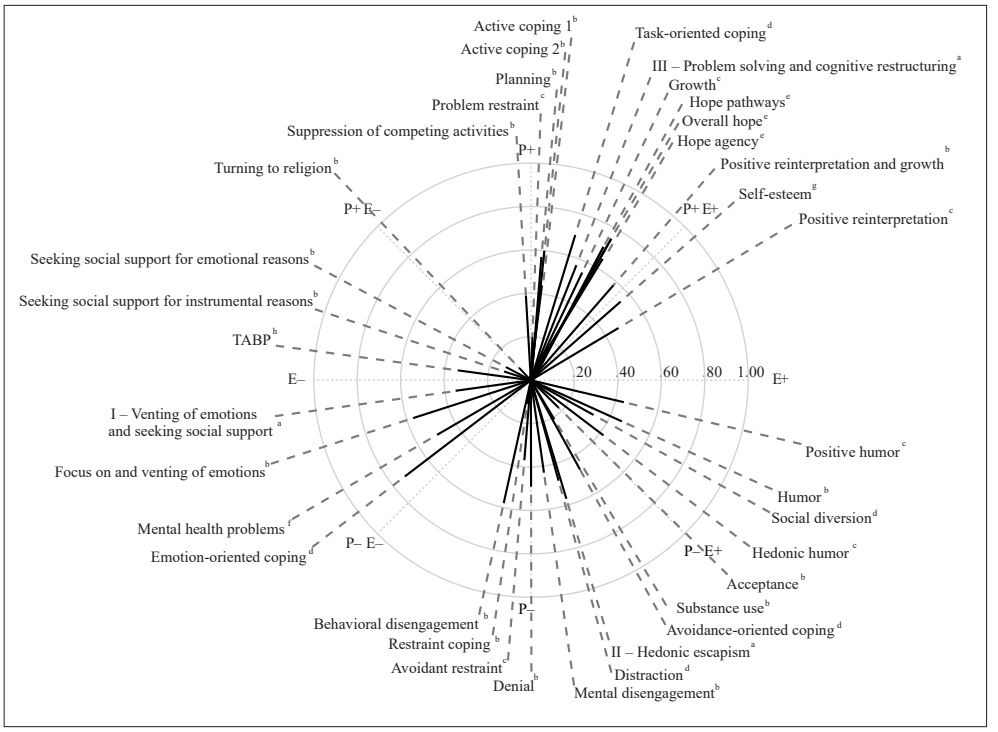
Note. n = 205. PC: Problem coping; EC: Emotion coping; E+: Positive emotional coping; P+ E+: Optimistic action; P+: Problem solving; P+ E–: Preoccupation with the problem; E–: Negative emotional coping; P– E–: Pessimistic passivity; P–: Problem avoidance; P– E+: Hedonic disengagement.

α: Cronbach's alpha; θ_T: theoretical angle; θ_E: empirical angle; $\theta_T - \theta_E$: difference between theoretical and empirical angles; VL: vector length.

[a] Assignment of each external variable to CCM coping style(s). Bolded symbols of coping styles indicate vector lengths above .20.

Correlations above |.14| are significant at $p < 0.05$

Figure 12
Location of external coping scales and adjustment indicators within the CCM



Note. E+: Positive emotional coping; P+ E+: Optimistic action; P+: Problem solving; P+ E–: Preoccupation with the problem; E–: Negative emotional coping; P– E–: Pessimistic passivity; P–: Problem avoidance; P– E+: Hedonic disengagement.

Solid lines represent vector length.

[a] Three factors obtained from PCA on the COPE.

[b] Carver et al. (1989).

[c] Strategies of humor, reinterpretation, and restraint from Carver et al. (1989).

[d] Endler and Parker (1990a).

[e] Snyder et al. (1991).

[f] Goldberg and Williams (1988).

[g] Rosenberg (1965).

[h] Haynes et al. (1978).

TABP: Type A behavior pattern.

Higher-order factors from the COPE. In the presented investigation, three higher-order factors were recognized after performing PCA on the COPE scales. Table 24 and Figure 12 show their associations with CCM styles. All higher-order factors from the COPE revealed satisfactory relationships with CCM styles (VL ≥ .35). Factor I (venting of emotions and seeking social support) was assigned to Negative emotional coping, factor II (hedonic escapism) was located between Problem avoidance and Hedonic disengagement. Factor III (problem solving and cognitive restructuring) was most similar to Problem solving and Optimistic action.

It was checked how accurately the CCM can discriminate between the three higher-order factors from the COPE. The differences in angles assigned to the locations of the three variables (factors I vs. II, II vs. III and I vs. III) were found to be 98.69°, 141.72° and 119.55°, respectively. The three factors seemed to correspond

to three points similarly distant from each other in the circumplex. If the three COPE components were perfectly uniformly distributed around the circumplex, they would have to be spaced at 120°. The differences between the hypothetical and empirical locations were: 21.31°, 21.72°, 0.45°, with a mean disparity of 14.49°. Thus, it can be concluded that the three factors were indeed uniformly distributed.

Strategies of reinterpretation, humor and restraint based on the COPE. Table 24 and Figure 12 present the location of strategies of reinterpretation (i.e., growth, positive reinterpretation), humor (i.e., positive humor, hedonic humor), and restraint (i.e., problem restraint, avoidant restraint) within the CCM, whereas Table 25 shows the arrangement of their items. It was found that all six strategies had substantial relationships with the CCM styles (VL > .20). Growth revealed the strongest association with Problem solving and Optimistic action, while positive reinterpretation was located closest to Optimistic action, but with a (slight) shift towards Positive emotional coping. Positive humor was related to Positive emotional coping, whereas hedonic humor was most similar to Hedonic disengagement. Problem restraint was associated with Problem solving, and avoidant restraint was located in the position of Problem avoidance.

Table 25
The Location of Selected COPE Items in the CCM

	Items from COPE	θ_T	Coping dimensions		VL	θ_E	$\theta_T - \theta_E$	Coping style
Positive reinterpretation and growth			PC	EC				
1.	I try to grow as a person as a result of the experience.	45°	.43	.27	.51	58.10°	−13.10°	P+ E+
29.	I try to see it in a different light, to make it seem more positive.	22.5°	.19	.30	.36	32.12°	−9.62°	P+ E+
38.	I look for something good in what is happening.	0°	.21	.37	.43	29.61°	−29.61°	E+/P+ E+
59.	I learn something from the experience.	67.5°	.40	.13	.42	72.00°	−4.50°	P+/P+ E+
Humor								
8.	I laugh about the situation.	360°	−.10	.36	.37	343.91°	16.09°	E+/P− E+
20.	I make jokes about it.	360°	−.08	.43	.44	349.15°	10.85°	E+
36.	I kid around about it.	315°	−.16	.34	.38	334.12°	−19.12°	E+/P− E+
50.	I make fun of the situation.	315°	−.29	.25	.38	310.46°	4.54°	P− E+
Restraint coping								
10.	I restrain myself from doing anything too quickly.	90°	.17	.03	.17	79.34°	10.66°	P+
22.	I hold off doing anything about it until the situation permits.	270°	−.37	.01	.37	271.68°	−1.68°	P−
41.	I make sure not to make matters worse by acting too soon.	90°	.15	−.03	.15	99.40°	−9.40°	P+
49.	I force myself to wait for the right time to do something.	270°	−.21	−.07	.22	252.88°	17.12°	P−/ P− E−

Note. n = 205. PC: Problem coping; EC: Emotion coping; E+: Positive emotional coping; P+ E+: Optimistic action; P+: Problem solving; P+ E−: Preoccupation with the problem; E−: Negative emotional coping; P− E−: Pessimistic passivity; P−: Problem avoidance; P− E+: Hedonic disengagement.
Growth (items 1 and 59), positive reinterpretation (items 29 and 38), positive humor (items 8 and 20), hedonic humor (items 36 and 50), problem restraint (items 10 and 41), and avoidant restraint (items 22 and 49).

α: Cronbach's alpha; θ_T: theoretical angle; θ_E: empirical angle; $\theta_T - \theta_E$: difference between theoretical and empirical angles; VL: vector length. Correlations above |.14| are significant at $p < 0.05$.

Items from the scales of positive reinterpretation and growth as well as humor had vectors ranging from .36 to .51. Items from positive reinterpretation and growth represented a continuum from 29.61° (Positive emotional coping/Optimistic action) to 72° (Problem solving/Optimistic action). One item ("I look for something good in what is happening") was located between Positive emotional coping and Optimistic action. The next two items ("I try to see it in a different light, to make it seem more positive," "I try to grow as a person as a result of the experience") were assigned to Optimistic action. The last item ("I learn something from the experience") was placed between Optimistic action and Problem solving. Similarly, the humor items represented a continuum from 310.46° (Hedonic disengagement) to 349.15° (Positive emotional coping). The items "I make fun of the situation," "I kid around about it," "I laugh about the situation," and "I make jokes about it" were arranged in locations with increasing angular values.

The restraint items had vectors from .15 to .37 and represented opposite regions of the CCM. One item was related to Problem avoidance and Pessimistic passivity ("I force myself to wait for the right time to do something") and another one to Problem avoidance ("I hold off doing anything about it until the situation permits"). However, the subsequent two items were similar to Problem solving ("I restrain myself from doing anything too quickly," "I make sure not to make matters worse by acting too soon").

Locations of CISS coping constructs in the CCM. Table 26 and Figure 12 show relationships between the CISS scales and CCM styles. CISS constructs had vectors from .33 to .73. The vectors of task-oriented coping and emotion-oriented coping were at least .70, which indicates very strong similarities between these constructs and the CCM. Task-oriented coping was located between Problem solving and Optimistic action, whereas emotion-oriented coping was associated with Pessimistic passivity. Avoidance-oriented coping was placed between Problem avoidance and Hedonic disengagement. Distraction was similar to Problem avoidance and weaker than Hedonic disengagement, whereas social diversion was linked to Hedonic disengagement and also, but less strongly to Positive emotional coping.

Moreover, the possibility of accurate differentiation of CISS coping styles in terms of the CCM was analyzed. Angular differences between three coping styles (task-oriented coping vs. emotion-oriented coping, emotion-oriented coping vs. avoidance-oriented coping and task-oriented coping vs. avoidance-oriented coping) were 144.35°, 81.46° and 134.19°, respectively. If the CISS coping styles were related to three uniformly distributed points in the CCM, they should be distributed at 120°. The differences between hypothetical and empirical locations were 24.35°, 38.54° and 14.19°, with a mean disparity of 25.69°. Thus, CISS styles were not evenly spaced within the CCM, especially that the angular distance between emotion-oriented coping and avoidance-oriented coping is too small.

Table 26

Relationships Between CCM Coping Styles and CISS Scales as well as Mental Health Indicators

Scale	α	θ_T	E+	P+ E+	P+	P+ E–	E–	P– E–	P–	P– E+	Coping dimensions PC	Coping dimensions EC	VL	θ_E	$\theta_T - \theta_E$	Coping style[f]
CISS scales[a]																
Task-oriented coping	.86	90°	.25	.49	.74	.38	–.12	–.35	–.45	–.19	.67	.20	.70	73.02°	16.98°	**P+/P+ E+**
Emotion-oriented coping	.90	225°	–.29	–.37	–.30	.26	.68	.75	.42	–.01	–.44	–.58	.73	217.37°	7.63°	**P– E–**
Avoidance-oriented coping	.86	292.5°	.32	.09	–.29	–.25	–.02	.19	.49	.44	–.42	.23	.47	298.83°	–6.33°	**P–/P– E+**
Distraction	.80	270°	.19	–.02	–.29	–.24	.03	.27	.53	.40	–.46	.13	.48	285.43°	–15.43°	**P–/P– E+**
Social diversion	.76	315°	.35	.23	–.14	–.14	–.10	–.02	.23	.30	–.16	.29	.33	331.08°	–16.08°	**E+/P– E+**
Mental health indicators																
Overall hope[b]	.86	45°	.30	.57	.65	.19	–.26	–.56	–.45	–.09	.65	.37	.75	60.43°	–15.43°	**P+/P+ E+**
Hope pathways[b]	.80	45°	.28	.52	.60	.16	–.26	–.51	–.41	–.12	.61	.34	.70	60.71°	–15.71°	**P+/P+ E+**
Hope agency[b]	.80	45°	.26	.50	.55	.17	–.21	–.49	–.39	–.05	.56	.32	.65	60.19°	–15.19°	**P+/P+ E+**
Mental health problems[c]	.86	225°	–.28	–.40	–.24	.07	.36	.40	.13	–.12	–.25	–.43	.50	210.22°	14.78°	**P– E–**
Self-esteem[d]	.90	45°	.38	.43	.36	.01	–.31	–.40	–.19	.09	.36	.42	.55	41.25°	3.75°	**P+ E+**
TABP[e]	.55	157.5°	–.23	–.12	.00	.28	.30	.17	–.03	–.21	.05	–.33	.34	172.30°	–14.80°	**E–**

Note. PC: Problem coping; EC: Emotion coping; E+: Positive emotional coping; P+ E+: Optimistic action; P+: Problem solving; P+ E–: Preoccupation with the problem; E–: Negative emotional coping; P– E–: Pessimistic passivity; P–: Problem avoidance; P– E+: Hedonic disengagement; TABP: Type A behavior pattern.

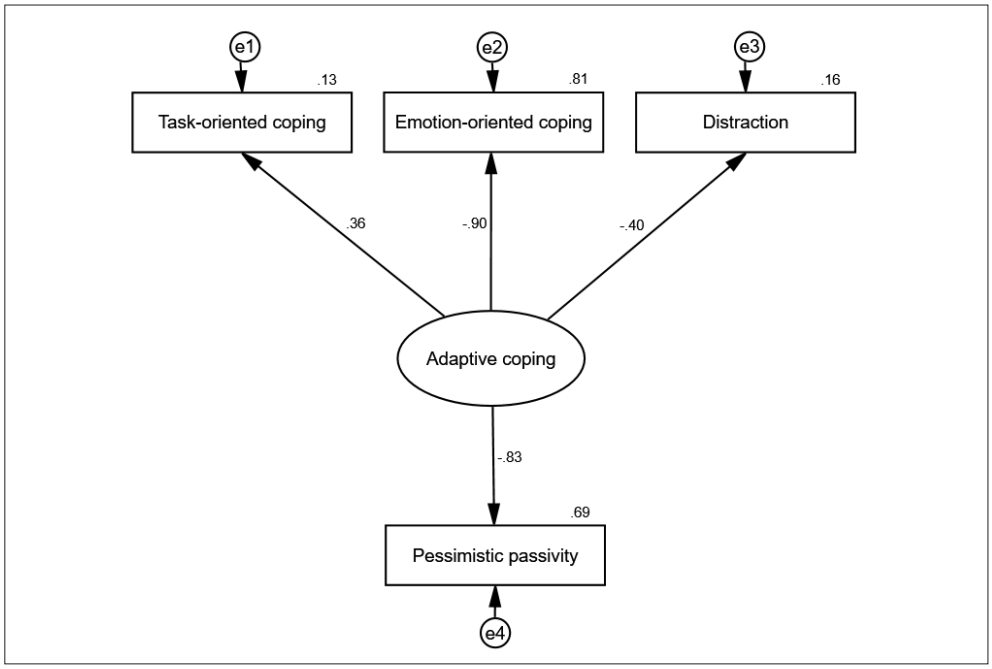
α: Cronbach's alpha; θ_T: theoretical angle; θ_E: empirical angle; $\theta_T - \theta_E$: difference between theoretical and empirical angles; VL: vector length.

[a] $n = 215$, [b] $n = 201$, [c] $n = 187$, [d] $n = 279$, [e] $n = 193$. [f] Assignment of each external variable to CCM coping style(s). Bolded symbols of coping styles indicate vector lengths ≥ .20.

Correlations above |.14| are significant at $p < 0.05$.

Adaptive/maladaptive coping extracted from the CISS. Figure 13 depicts the model for measuring maladaptive coping, which was prepared similarly to other authors (Dunkley & Blankstein, 2000). This analysis was performed in AMOS 24. Adaptive coping was indicated by task-oriented coping, emotion-oriented coping, and distraction. To evaluate the fit of the model with a low number of degrees of freedom, RMSEA was excluded (Kenny et al., 2015). In the first model Optimistic action was used to predict adaptive coping, but the fit was unsatisfactory: x^2 (2) = 42.10, p < .001, CFI = .715. Thus Optimistic action was replaced with Pessimistic passivity and the fit of the second model was acceptable at x^2 (2) = 14.47, p < .01, CFI = .949. All three variables were significant indicators of adaptive coping, although the latent variable was the most strongly loaded by emotion-oriented coping. Pessimistic passivity predicted (inversely) adaptive coping (β = –.83, p < .001) and explained 69% of its variance. A regression model was performed for the sake of comparison. Emotion-oriented coping was significantly predicted by Pessimistic passivity (β = –.75, p < .001), which accounted for 57% of its variance.

Figure 13
Standardized factor loadings and parameter estimates of the structural model linking adaptive coping and Pessimistic passivity



Relationships between Mental Health and CCM Styles

Location of mental health indicators within the CCM. Relationships between mental health variables and CCM styles are given in Table 26 and Figure 12. The vector lengths of mental health indicators ranged from .34 to .75. Overall hope and hope pathways reveal very strong associations with CCM styles (vectors lengths of .70 or greater). Self-esteem, hope agency, and mental health problems demonstrated somewhat weaker, but still rather strong relationships (vector lengths of at least .50). Hope, its components, and self-esteem were associated with Optimistic action (or Optimistic action and Problem solving), while mental health problems were located in Pessimistic passivity. The TABP was assigned to Negative emotional coping, but its correlations with it and with Preoccupation with the problem were very similar.

Regressions predicting mental health. Coping styles were used to predict mental health indicators (i.e., self-esteem, hope and its components, mental health problems, as well as the TABP). First, only gender was introduced in the regression models for each variable. Next, coping styles were used as predictors of mental health indicators.

Given that variables in a circumplex are strongly intercorrelated, only the most reasonable predictors were included in regression. If the hypothesis posited that one coping style was to be associated with a given mental health variable, then that coping style and its opposite, as well as the four coping styles representing the two adjacent dimensions were introduced to the model. For instance, six coping styles (Optimistic action, Pessimistic passivity, Problem solving, Problem avoidance, Positive emotional coping, and Negative emotional coping) were used to predict self-esteem, hope, its components, and mental health problems. Preoccupation with the problem and Hedonic disengagement were excluded from analyses because there was insufficient theoretical support to expect their association with general adjustment. Subsequently, regression analysis for the TABP was performed. Based on the theoretical model, the following predictors were included in the equation: Preoccupation with the problem, Hedonic disengagement, Problem solving, Problem avoidance, Positive emotional coping, and Negative emotional coping.

First, gender was not found to be a significant predictor of any of the six dependent variables ($p > .05$). Standardized regression coefficients and the variance explained by models predicting mental health indicators based on coping styles are given in Table 27. Interestingly, in models for self-esteem, hope agency, and the TABP the results of OLS regression were identical to those of OLS with HCSE. For overall hope, one predictor significant in OLS was not so in OLS with HCSE (in this case, Table 27 shows significance for OLS with HCSE).

Table 27
Regressions of CCM Coping Styles for Mental Health Indicators

Predictors	Self-esteem[a]	Overall hope[b]	Hope agency[b]	Hope pathways[b]	Mental health problems[c]	TABP[d]
P+	.24**	.37***	.28**	.38***	–.05	–.12
P–	.09	–.15	–.11	–.15	–.08	.04
E+	.13	.11	.06	.12	.01	–.08
E–	–.06	–.03	.02	–.08	.18	.13
P+ E+	.13	.19*	.21*	.13	–.28*	
P– E–	–.26**	–.24**	–.25**	–.17*	.24*	
P+ E–						.23*
P– E+						–.09
F – OLS (*F* – HCSE)	18.83*** (20.00***)	45.30*** (30.68***)	25.29*** (15.71***)	32.03***	11.21***	5.02*** (4.65***)
Adj. R^2	.278	.571	.422	.482	.248	.112

Note. E+: Positive emotional coping; P+ E+: Optimistic action; P+: Problem solving; P+ E–: Preoccupation with the problem; E–: Negative emotional coping; P– E–: Pessimistic passivity; P–: Problem avoidance; P– E+: Hedonic disengagement; TABP: Type A behavior pattern.
[a] n = 279, [b] n = 201, [c] n = 187, [d] n = 193. * p < .05, ** p < .01, *** p < .001.

Self-esteem was determined by Problem solving (β = .24) and Pessimistic passivity (β = –.26), with an adjusted R^2 of .278. Overall hope had the following significant predictors in OLS and OLS with HCSE: Problem solving (β = .37), Optimistic action (β = .19), and Pessimistic passivity (β = –.24, adj. R^2 = .571). In OLS, Problem avoidance was a significant predictor of hope (p = .04), but in OLS with HCSE it bordered on statistical significance (p = .06). Higher levels of hope agency were associated with greater use of Problem solving (β = .28) and Optimistic action (β = .21) and lower use of Pessimistic passivity (β = –.25, adj. R2 = .422). Hope pathways were predicted by Problem solving (β = .38) and Pessimistic passivity (β = –.17, adj. R2 = .482). Mental health problems were related to Optimistic action (β = –.28) and Pessimistic passivity (β = .24). The model explained 24.8% of the variance according to the adjusted R2 value. The TABP had one significant predictor: Preoccupation with the problem (β = .23, adj. R^2 = .112).

Sinusoidal Relationships with External Variables

To confirm the validity of a circumplex model, the relationships predicted between its constructs and some external criteria must not only be identified, but they must also exhibit a sinusoidal pattern. Therefore, in order to fully corroborate CCM validity, associations between CCM styles and other coping scales as well as mental health variables were scrutinized in terms of fit to sinusoidal patterns.

For practical reasons, correlational patterns were analyzed with cosine (rather than sine) curves. Indicators of fit to the curves as well as elevation and amplitude for each external variable are presented in Tables 28 and 29. Thirty-one of the 36 analyzed variables revealed R^2 > .80, two (seeking social support for instrumental

Table 28
Structural Summary Parameters and Fit to Cosine Curve for Correlations Between COPE Scales and CCM Styles

Scale	Elevation	Amplitude	Fit to cosine curve	
			R^2	NMAE (%)
Factors obtained after PCA				
I – Venting of emotions and seeking social support	.06	.31	.89	9.23
II – Hedonic escapism	.14	.47	.98	3.99
III – Problem solving and cognitive restructuring	.11	.45	.97	5.11
Problem-focused coping				
Active coping 1	.11	.38	.97	5.14
Active coping 2	.08	.50	.97	4.45
Planning	.08	.51	.97	4.58
Suppression of competing activities	.05	.34	.96	7.02
Restraint coping	.10	.13	.54	17.33
Seeking social support for instrumental reasons	.04	.11	.75	11.32
Emotion-focused coping				
Seeking social support for emotional reasons	.05	.17	.42	17.54
Positive reinterpretation and growth	.09	.48	.97	5.22
Acceptance	.06	.15	.92	8.50
Turning to religion	.06	.16	–.14	23.95
Denial	.10	.40	.98	4.28
"Less useful"				
Behavioral disengagement	.09	.46	.98	3.62
Mental disengagement	.11	.35	.98	4.50
Focus on and venting of emotions	.04	.55	.87	10.18
Recently developed				
Humor	.11	.37	.99	3.33
Substance use	.09	.24	.72	14.98
Strategies of reinterpretation, humor and restraint				
Growth	.07	.41	.98	4.96
Positive reinterpretation	.09	.40	.92	7.97
Positive humor	.09	.36	.98	3.59
Hedonic humor	.13	.38	.96	5.89
Problem restraint	.07	.17	.97	4.37
Avoidant restraint	.09	.35	.95	5.95

Note. R^2: Goodness of fit; NMAE: Normalized Mean Absolute Error.

reasons and substance use) were between .80 and .70, while three (restraint coping, seeking social support for emotional reasons, and turning to religion) showed an inadequate fit (R^2 < .70). Similarly, 33 variables demonstrated NMAE < 15%, while the same three variables inadequately fitted according to R^2 represented

NMAE > 15%. It seems that NMAE < 15% (i.e., the mean distance between the observed and modeled correlational profiles lower than 15%) should be considered as an intuitive criterion for an acceptable sinusoidal relationship.

What was unusual, the R^2 value for turning to religion was negative, which makes it difficult to interpret. Fortunately, the NMAE for turning to religion was the highest among all variables, which indicates that the mean distance between the observed and modeled correlational profiles was 23.95%.

Table 29
Structural Summary Parameters and Fit to Cosine Curve for Correlations Between CISS Scales, Mental Health Indicators and CCM Styles

Scale	Elevation	Amplitude	Fit to cosine curve	
			R^2	NMAE (%)
CISS scales				
Task-oriented coping	.09	.65	.96	5.23
Emotion-oriented coping	.14	.61	.98	5.29
Avoidance-oriented coping	.12	.37	.97	5.60
Distraction	.11	.42	.97	4.65
Social diversion	.09	.26	.93	9.11
Mental health indicators				
Overall hope	.04	.61	.99	2.89
Hope pathways	.03	.57	.99	2.93
Hope agency	.04	.51	.99	2.78
Mental health problems	–.01	.41	.98	3.75
Self-esteem	.05	.38	.98	4.28
TABP	.02	.28	.98	4.57

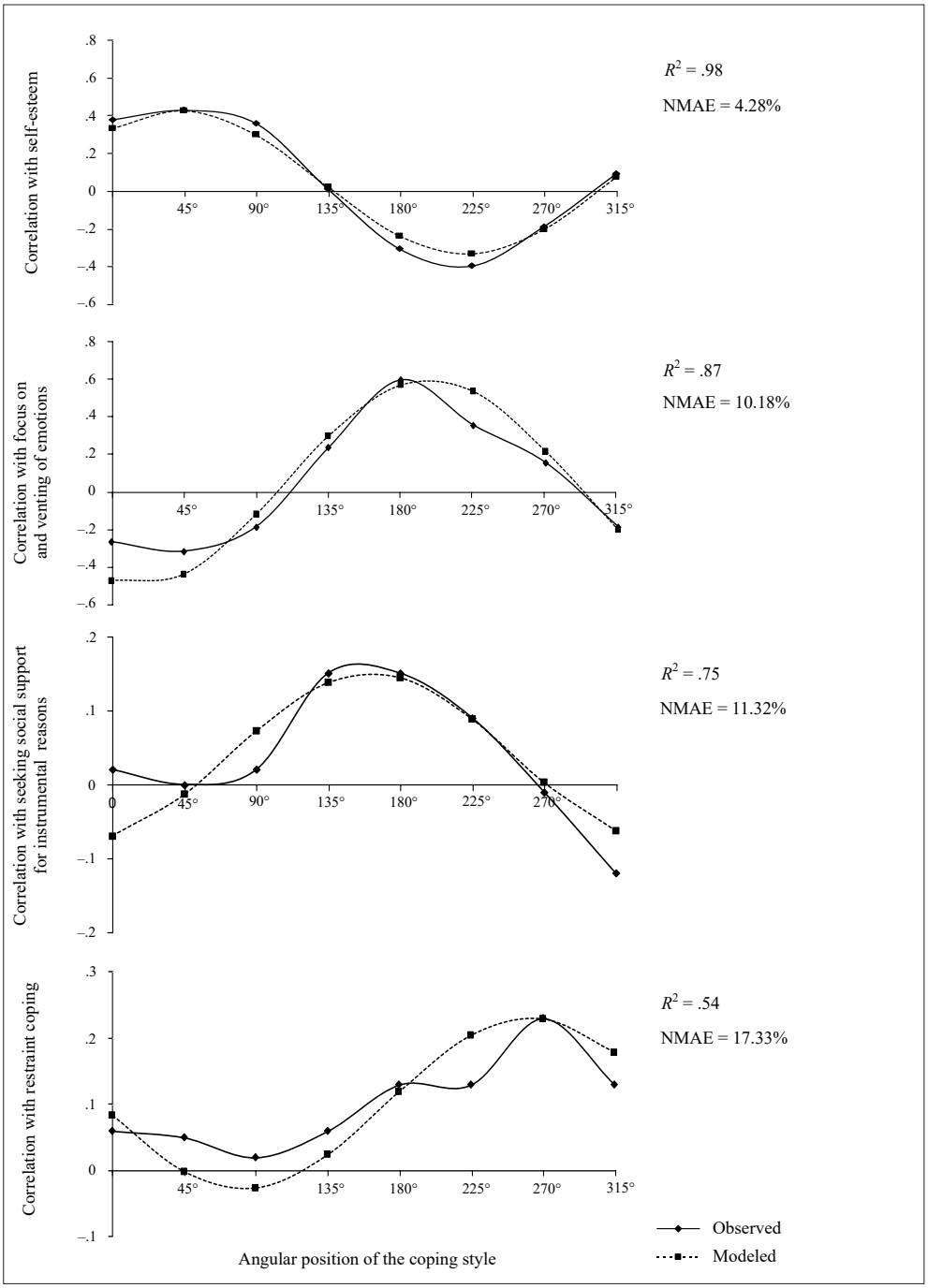
Note. TABP: Type A behavior pattern. R^2: Goodness of fit; NMAE: Normalized Mean Absolute Error.

The mean R^2 for 36 variables was .89 and the mean NMAE was 6.89%, which suggests a very good fit to the cosine curve. Pearson's correlation between R^2 and NMAE was –.93 ($p < .001$). Figure 14 shows examples of observed and modeled relationships of coping styles with one mental health variable (i.e., self-esteem) and three coping scales (i.e., focus on and venting of emotions, seeking social support for instrumental reasons, restraint coping). R^2 and NMAE are given for four variables. R^2 for these variables takes values in four intervals: > 90; .90 > R^2 > .80; .80 > R^2 > .70; and R^2 < .70.

In conclusion, the obtained correlations between the CCM styles and the vast majority of external coping scales as well as all variables related to mental health represent a sinusoidal pattern. In addition to the strength of correlations and the location of particular external variables presented in the previous sections, also the pattern of their relationships with the entire circumplex structure supports the CCM model.

Figure 14

Correlation patterns between CCM coping styles and self-esteem, focus on and venting of emotions, seeking social support for instrumental reasons and restraint coping as a cosine function of their angles



Note. R^2: Goodness of fit; NMAE: Normalized Mean Absolute Error.

Chapter 7.
Discussion[6]

Abstract. The Coping Circumplex Model (CCM) is designed to be a broad integration of various coping constructs and the structure of coping styles postulated for this model was fully confirmed using its operationalizing instrument. The vast majority of external coping scales and all mental health indicators were meaningfully located within the CCM, confirming its integrative potential. Limitations of the research were presented. Despite some imperfections, the potential for the CCM to aid in overcoming some of the current problems in coping research was discussed. The CCM may provide a platform for the synthesis of different coping constructs and create a common denominator for the various research efforts devoted to coping. Moreover, the CCM offers a more theoretically meaningful and parsimonious explanation of mental health than other coping models. Last but not least, the CCM may foster the generation of new hypotheses in coping research, for example, concerning the relationship between mental health and the continuum of expressive writing methods depending on situation controllability.
Keywords: *Integration of coping constructs, CISS, COPE, Mental health, Ego-resiliency, Emotion regulation, Broaden-and-build theory, Posttraumatic growth, Cognitive therapy, Goodness-of-fit hypothesis*

Circumplex Structure of Coping

The diversity of approaches in coping research and the multiplicity of coping constructs leads to confusion (Compas et al., 2001; Skinner et al., 2003) hindering the consolidation of knowledge (Christensen & Kessing, 2005; Nicholls & Polman, 2007; Zimmer-Gembeck & Skinner, 2011). Also other serious problems,

6 "Future Directions" contains extensive and slightly modified passages from Stanisławski (2019). The following sections include smaller and slightly modified parts of text from the same paper: "The Integration Potential of the CCM," "Predicting Mental Health with the CCM Styles," "General Conclusions and Limitations."

such as coping effectiveness under specific situational conditions and mechanisms of coping interventions still remain unresolved. It is hoped that the systematization of coping constructs will facilitate the resolution of at least some of these issues.

The CCM is designed to systematize coping constructs using an analogous geometric method. The objective of the dissertation was to present the CCM and its empirical verification. Empirical studies were performed according to the plan delineated in the hypotheses. First, hypotheses about the internal structure of coping styles were scrutinized. Hypothesis 1 stated that coping styles form a circumplex, and hypothesis 2 posited that opposite coping styles are pairs of distinguishable constructs.

Data about fit to the circumplex obtained via various methods (i.e., variance explained by the first two PCA components, communalities, angular locations, Procrustes analysis, randomization tests as well as MDS) were convergent and consistently supported the CCM model. Indeed, the structure of coping styles in the Main Study revealed a perfect fit to the circumplex (confirming hypothesis 1). Moreover, the opposite poles of each dimension were distinguishable in CFA, which bears out hypothesis 2. The irreducibility of the opposite poles of the same dimension was reflected in their explanatory potential – Optimistic action and Pessimistic passivity predicted both overall hope and mental health problems. Although the internal structure of coping inventories has been rarely examined in terms of sex differences (e.g., Endler & Parker, 1990b), the presented study also analyzed the circumplex structure separately for women and men, with the results being consistent with the circumplex.

Gender, Age and Coping Styles

Gender differences in coping styles. Differences in coping between men and women were analyzed using both raw and relative (centered) scores. Few studies to date have examined sex differences in coping using both types of scores (e.g., Eaton & Bradley, 2008; Ptacek et al., 1994; Tamres et al., 2002). According to hypothesis 3, females reported greater use of Negative emotional coping in both scoring methods, and Preoccupation with the problem in raw scores. Numerous studies have shown that women have a greater preference for ways of coping similar to Negative emotional coping, i.e., rumination (Tamres et al., 2002; Johnson & Whisman, 2013) and focus on and venting of emotions (Carver et al., 1989; Kallasmaa & Pulver, 2000; Torkelson & Muhonen, 2004), but there is no theoretical explanation of these differences. Based on the CCM, a higher level of both Negative emotional coping and Preoccupation with the problem in women (as compared to men) can be interpreted as releasing negative emotions associated with strong and problem-focused self-control in stressful situations.

Contrary to expectations, no gender differences were found for Pessimistic passivity, but women obtained lower (centered) scores on the opposite style, i.e., Optimistic action. Therefore, hypothesis 3 was partially confirmed. In many studies females have exhibited a stronger tendency to employ emotion-oriented coping (Cohan et al., 2006; Endler & Parker, 1990b; Endler & Parker, 1994; Strelau et al., 2005), which resembles Pessimistic passivity. It is worth noting that the scale of emotion-oriented coping from the CISS included many items which evince focusing on negative emotions. In the CCI, the scale of Negative emotional coping encompasses items that reflect focusing on negative emotions, but in the Pessimistic passivity scale there are only a few items of the kind. Also, non-coping research has demonstrated that women score higher on negative emotionality (Schmitt et al., 2008).

Furthermore, in the presented investigation men were more likely to engage in Problem solving and Positive emotional coping than women (in both types of scores) as well as in Problem avoidance (only in raw scores), which was not predicted by hypothesis 3. Sex differences in coping strategies similar to Positive emotional coping have not been observed consistently. Examining individuals facing stress associated with infertility, Jordan and Revenson (1999) found a greater tendency to engage in positive reappraisal among females vs. males. Other authors have not reported any significant differences between the sexes in positive reframing (Kelly et al., 2008), positive reinterpretation and growth (Carver et al., 1989; Piekarska, 2015), or humor (Piekarska, 2015). On the other hand, Kallasmaa and Pulver (2000) showed that, as compared to women, men were more likely to endorse positive reinterpretation and growth as well as humor. Interestingly, Watson and Clark (1994) found no significant sex differences in positive affect, but men revealed higher serenity (with sample items "calm", "relaxed", "at ease") than women in nine out of 10 samples. And indeed, emotions similar to serenity are directly linked to Positive emotional coping.

Also studies on gender differences in problem-focused/task-oriented coping have led to mixed results: some have reported the absence of significant differences (Strelau et al., 2005) or a greater preference by men (i.e., problem-focused coping: Cohan et al., 2006; planning: Torkelson & Muhonen, 2004; suppression of competing activities: Kallasmaa & Pulver, 2000), while in other investigations gender differences depended on age group (Endler & Parker, 1994). Endler and Parker (1994) observed that men revealed a greater preference for the task-oriented coping style in college, but not later on in adulthood. Analogously, many studies have found a greater preference for avoidance-oriented coping among women as compared to men (Cohan et al., 2006; Endler & Parker, 1994; Watanabe et al., 2015), but in some research this effect depended on the age group (Strelau et al., 2005).

According to some studies (Tamres et al., 2002) the pattern of gender differences varied across stressors. When faced with a relationship stressor, women reported a higher frequency of problem-focused coping, isolation, rumination, and seeking

social support for emotional reasons (Tamres et al., 2002). In the case of the same stressor, men scored higher on venting and marginally higher on avoidance (Tamres et al., 2002). The CCM can be useful in interpreting those results. It appears that when faced with relationship problems, women are more preoccupied with the problem than men while the latter are more likely to use Negative emotional coping/Pessimistic passivity than the former. Coping with specific stressors may lead to different patterns of gender differences as compared to general coping styles. It should be borne in mind that the cited results on sex differences are limited in that they concern specific age groups (cf. Endler & Parker, 1994; Strelau et al., 2005).

Relationships between coping styles and age. In the beginning, it should be noted that the majority of respondents in the present study were 19–25 years old. This narrow age group is a serious limitation which prevents evaluation of coping changes with age. However, positive correlations of age with Problem solving, Optimistic action and Positive emotional coping, as well as its negative correlation with Pessimistic passivity, have been indicated in the literature on coping (Siu et al., 2001) and the problem solving orientation (D'Zurilla et al., 1998). Problem-focused coping has been found to be positively associated with age (Hertel et al., 2015; Siu et al., 2001). In turn, D'Zurilla et al. (1998) analyzed changes in social problem solving ability in different age groups. As compared to young adults (aged 17–20), the middle-aged group (40–55) scored higher on rational problem orientation and positive problem orientation, and lower on negative problem orientation and the avoidance style (rational problem orientation is similar to Problem solving, positive problem orientation is akin to Optimistic action, while negative problem orientation and avoidance resemble Pessimistic passivity and Problem avoidance, respectively). With the exception of the avoidance style, all other results from D'Zurilla et al. (1998) are consistent with the relationships revealed in the presented dissertation.

The Integration Potential of the CCM

Integration of coping constructs within the circumplex space. Some authors have argued that both top-down and bottom-up approaches are needed in the development of coping models (Schwarzer & Schwarzer, 1996; Skinner et al., 2003). Although the CCI was built in the top-down way, it represents satisfactory external validity. Ten out of the 15 COPE constructs and all CISS constructs exhibit substantial associations with CCM styles, which seems to make up for not using a bottom-up approach. These results are in the line with hypothesis 4 about the possibility to integrate coping categories within the CCM. In addition to the obtained pattern of correlations, also their strength supports the CCM. Nine out of 10 COPE

scales and all CISS categories had vector lengths greater than .30, which is much more than the adopted threshold of .20, and two scales (emotion-oriented coping and task-oriented coping) had vector lengths at least .70. In correlation analysis the variations of Pessimistic passivity and emotion-oriented coping were shared in 56%, whereas those of Problem solving and task-oriented coping in 55%.

However, some subtle disparities between the hypothesis and the results were also found (i.e., all differences between theoretical and empirical angles for external variables were below 20°). While suppression of competing activities was expected to be correlated with Problem solving and Preoccupation with the problem, it turned out to be closest to Problem solving (according to its angular location), but its correlations with Problem solving and Preoccupation with the problem were almost identical. Contrary to predictions, also other constructs were not located within one coping style, but between two styles. Focus on and venting of emotions was assigned to both Negative emotional coping and Pessimistic passivity, although it was closer to Negative emotional coping, in line with the hypothesis. In particular, one item from this scale ("I feel a lot of emotional distress and I find myself expressing those feelings a lot"; Carver et al., 1989) was similar to Pessimistic passivity. Moreover, in the current study substance use was located in Hedonic disengagement, but with a shift towards Problem avoidance, which is consistent with the hypothesis.

Furthermore, in the presented research task-oriented coping was associated with Problem solving and Optimistic action, while according to the hypothesis it should be most strongly linked to Problem solving. However, task-oriented coping includes not only problem solving, but also reconceptualization of the stressor (Parker & Endler, 1992), which is related to Optimistic action. Other very subtle disparities were found for distraction and social diversion. Distraction was predicted to be correlated with Problem avoidance, but it was located between Problem avoidance and Hedonic disengagement (closer to Problem avoidance). Social diversion was connected to Hedonic disengagement and Positive emotional coping, while according to predictions it should be placed in Hedonic disengagement. However, it was located closer to Hedonic disengagement than Positive emotional coping, in line with the hypothesis. In conclusion, with some reservations regarding Preoccupation with the problem, all coping styles were found to be associated with at least one external coping scale.

Interestingly, the three factors extracted from the COPE by PCA correspond to three points spaced almost exactly 120° apart in the CCM. Also the CISS coping styles yield three points, but not evenly spaced. Furthermore, constructs from these two instruments can be related to each other using the CCM. Factor I from the COPE (venting of emotions and seeking social support) and emotion-oriented coping from the CISS are not very similar, which is not surprising. The difference between them was 29.38° in angular locations and .38 in vector lengths. In addition to focus on and venting of emotions, factor I also contains turning to religion

and seeking social support for instrumental and emotional reasons. Those forms of coping are absent from emotion-oriented coping. Factor I is similar to Negative emotional coping, whereas emotion-oriented coping resembles Pessimistic passivity. Interestingly, meaningful convergences were found between COPE factor II (hedonic escapism) and avoidance-oriented coping as well as between COPE factor III (problem solving and cognitive restructuring) and task-oriented coping. These similarities involve both angular locations and vector lengths. The disparities in angular locations were only 12.15° and 4.58° and differences in vector lengths were .10 and .13, respectively. Unfortunately, the CISS and COPE were administrated in two separate studies and correlations between the abovementioned pairs of constructs cannot be computed. Nevertheless, it seems that the CCM provides a platform not only for the integration of various coping constructs, but it can also serve as a common denominator for other coping models.

Moreover, the CCM makes it possible to precisely verify some claims formulated in other coping models. For instance, according to Carver et al. (1989) mental disengagement and suppression of competing activities are opposites. Since the former is assigned to an angle of 278.07° and the latter to 93.39°, the difference in angular location between them is 184.68°, which confirms their opposition.

The constructs extracted to date from the COPE and Brief COPE include adaptive and maladaptive coping (Dawson et al., 2014; Gloria & Steinhardt, 2016; Merrill & Thomas, 2013; Moore et al., 2011), but strategies have been combined into these categories based on assumptions and reliabilities alone, without performing CFA or EFA (Gloria & Steinhardt, 2016; Merrill & Thomas, 2013; Moore et al., 2011). Fortunately, adaptive/maladaptive coping has also been modeled using the CISS with structural equation modeling (Dunkley & Blankstein, 2000). In the presented investigation, Pessimistic passivity explains most of the variance of the adaptive/maladaptive coping construct derived from the CISS.

In summary, adaptive/maladaptive coping from the CISS, all three higher-order factors from the COPE, all three styles from the CISS, and 10 out of 15 COPE constructs demonstrated meaningful relationships with CCM styles. Irrespective of the indicator, almost all external coping scales exhibited a sinusoidal pattern of relationships with the eight CCM categories. All of the coping scales significantly related to the CCM styles had at least an acceptable fit to the cosine curve. Generally, hypothesis 4 about the potential of the CCM to integrate various coping constructs was corroborated. In conclusion, both the internal structure and the nature of associations with external constructs supported the circumplex structure of the presented model.

Coping constructs not integrated within the CCM. It should be borne in mind that five COPE scales could not be meaningfully located within the CCM, these are: restraint coping, turning to religion, acceptance, seeking social support for instrumental reasons, and seeking social support for emotional reasons. Interestingly,

with the exception of seeking social support for instrumental reasons, those categories had at least one correlation of .20 with one CCM style. Moreover, the CCM is a general model of coping styles, which is meant to primarily incorporate higher level constructs, rather than very specific ones, and indeed all such categories including the three higher-order COPE factors and CISS styles did reveal meaningful associations and satisfactory commonalities with the CCM. It is also worth noting that although five constructs could not be located according to the assumed criteria (i.e., vector length), some convergence between them and the CCM styles was indicated. Restraint coping had a very weak relationship with CCM categories, but the two restraint strategies exhibited satisfactory associations with opposite regions on the circumplex. It seems that putting all restraint items in one scale underestimates their correlation with the CCM styles.

The second problematic COPE variable was turning to religion. As already mentioned, turning to religion could not be reliably located within the CCM based on the assumed vector length criterion, but it was found to be weakly correlated with Preoccupation with the problem (r = .22), which is consistent with the conjectured conformist nature of that coping style. It should be noted that turning to religion or religious coping could be interpreted as a unidimensional construct, but it may also occur in the form of different strategies. (i.e., positive and negative religious coping). Importantly, those two strategies, which have opposite relationships with adjustment (Ano & Vasconcelles, 2005), represent different regions of the CCM. Examples of positive and negative religious coping are benevolent religious reappraisal (referring to Optimistic action) and punishing God reappraisal (similar to Pessimistic passivity), respectively. Associations between health and general turning to religion/religious coping can be underestimated, which suggests limited usefulness of such constructs. In contrast to turning to religion, the two strategies of religious coping seem to be linked to CCM constructs.

Another COPE construct poorly related to CCM styles is acceptance, which, however, can be located in Hedonic disengagement. This relationship evinces some commonalities in the conceptualizations of the two constructs. It is worth noting that, analogously to turning to religion, acceptance can be interpreted in various ways with different forms of acceptance reflected in different CCM scales, e.g., Optimistic action ("I know that the situation is difficult, but I'm optimistic"), Hedonic disengagement ("I don't engage in solving the problem and I don't worry about it"), and Problem avoidance ("I wait and see what fate has in store").

The two other problematic constructs are seeking social support for instrumental and emotional reasons, which represent social forms of coping.

Social forms of coping. Relationships between the eight coping styles and seeking social support deserve a separate discussion as they are a special case of constructs which are problematic in terms of CCM integration. Both COPE scales of seeking social support revealed a weak association with the circumplex, whereas social

diversion from the CISS showed a stronger relationship. While seeking social support for instrumental reasons demonstrated a marginal relationship with the CCM (all $r < .20$), seeking social support for emotional reasons revealed a weak correlation with Preoccupation with the problem ($r = .22$) and was located between this construct and Negative emotional coping, which is meaningful in terms of the theoretical model.

It seems that social forms of coping may be represented in the CCM in two ways. First, social coping responses could be located in different areas of the circumplex. In this context, two CCM dimensions appear to be particularly useful, i.e., Optimistic action vs. Pessimistic passivity and Preoccupation with the problem vs. Hedonic disengagement (cf. "Personality dimensions, social forms of coping and the CCM" from Chapter 3).

Optimistic action was supposed to reveal an association with the flexible investing of social resources, e.g., through mutually beneficial collaboration aimed at solving the problem. Pessimistic passivity expresses rigidity in behaviors contributing to depletion in social resources (e.g., deepening cooperation with a partner who has not fulfilled his tasks, consequently leading to further problems and lowering general trust in people).

Preoccupation with the problem represents social behaviors associated with focusing both on solving the problem and negative information. This style was expected to be connected to self-control, conservation and conformity. In line with the above, Preoccupation with the problem was (weakly) correlated with seeking social support for emotional reasons (and turning to religion).

On the other hand, Hedonic disengagement evinces striving for pleasure and a low level of control, which can be related to risk taking, proactive aggression, and Machiavellianism. Endorsing this style can lead to increasing social resources, but they are not based on authentic intimacy. Therefore, Hedonic disengagement was linked to social diversion (as well as humor and substance use). In conclusion, it seems that Optimistic action vs. Pessimistic passivity and Preoccupation with the problem vs. Hedonic disengagement provide interesting frameworks for integrating individualistic coping and different forms of social coping.

Nevertheless, it should be mentioned that relationships between the CCM and social forms of coping can be considered from yet another perspective. The CCM can possibly be interpreted within different domains analogously to the interpersonal circumplex (Leary, 1957), which has been employed to describe and explain the structure of interpersonal values (Locke, 2000), interpersonal problems (Alden et al., 1990), interpersonal self-efficacy (Locke & Sadler, 2007), as well as children's social goals (Ojanen et al., 2005). Thus, the CCM could be interpreted in different domains to describe various acts of social coping as well as coping with particular stressors (e.g., academic stress, illness, job stress, family stress etc.). In this case, social coping would represent one of the many applications of the CCM. All eight CCM coping styles may have non-social forms and social equivalents. Similarly,

Connor-Smith et al. (2000) argued that social support may be used for many reasons and Skinner et al. (2003) stated that all individual coping responses may have social counterparts. Presumably, the two possible relationships between social coping and the CCM do not have to be mutually exclusive.

Identifying different coping strategies within one coping mode. According to the theoretical model presented in Chapter 3, multiple coping strategies varying in the intensity of Problem coping or Emotion coping can be distinguished within one coping mode. Items reflecting reinterpretation and internalization from the CCI can be assigned to various coping styles. Moreover, the coping mode concept may simplify an understanding of why different authors have included the same categories in different higher-order COPE factors. For instance, O'Connor and O'Connor (2003) placed positive reinterpretation and growth in one higher-order category with acceptance, labeling it cognitive reconstruction. Others grouped positive reinterpretation and growth with acceptance and restraint coping (Sica et al., 1997). On the other hand, Stowell et al. (2001) incorporated positive reinterpretation and growth in the *active* factor, which also contained active coping, planning, suppression of competing activities, restraint coping, and acceptance. In turn, Kallasmaa and Pulver (2000) assigned that scale to task coping, together with planning, active coping, and suppression of competing activities and humor.

Presumably, the aforementioned categories from O'Connor and O'Connor (2003) as well as Sica et al. (1997) are associated with Optimistic action, whereas the higher-order factors from Stowell et al. (2001) and Kallasmaa and Pulver (2000) have a similar conceptual scope to Optimistic action and probably also Problem solving. This interpretation, deriving from the theoretical model, is reflected in the hypotheses posed and is generally consistent with the results reported in this dissertation. Growth was expected to be associated with Optimistic action and Problem solving, and positive reinterpretation with Positive emotional coping and Optimistic action. In the presented study, the above suppositions were empirically confirmed. Thus, it can be seen that the CCM differentiated between strategies within the coping mode of reinterpretation. The obtained empirical locations were in line with findings from O'Connor and O'Connor (2003), Sica et al. (1997), Stowell et al. (2001), and Kallasmaa and Pulver (2000).

The humor scale has also been included in various higher-order categories (Deisinger et al., 1996; Litman, 2006; Sica et al., 1997). Sica et al. (1997) described one factor comprising humor, substance use, denial, and mental and behavioral disengagement. Deisinger et al. (1996) classified humor along with substance use in hedonistic escapism. Interestingly, Litman (2006) performed two analyses yielding different results. In one study, humor loaded the same factor as positive reinterpretation and growth, acceptance, and restraint coping, whereas the second study revealed the existence of a higher category containing humor, positive reinterpretation and growth, active coping, planning, suppression of competing activities,

acceptance, and restraint coping. The former factor is similar to Positive emotional coping, while the latter resembles Optimistic action. However, in the second study humor revealed only slightly weaker loadings on other factors incorporating avoidance constructs. It seems that in that part of research humor was positively linked to both Optimistic action and Problem avoidance, which can be interpreted as a location between Positive emotional coping and Hedonic disengagement. In conclusion, humor has been incorporated in categories reflecting a continuum ranging from Positive emotional coping (Litman, 2006) to Positive emotional coping/Hedonic disengagement (Litman, 2006) to Hedonic disengagement (Deisinger et al., 1996; Sica et al., 1997). In this dissertation, two humor strategies were projected into the circumplex space. Positive humor was placed in Positive emotional coping, while hedonic humor was linked to Hedonic disengagement. These findings are consistent with other studies (Deisinger et al., 1996; Litman, 2006; Sica et al., 1997) and with the presented theoretical model. The idea of coping mode explains why positive reinterpretation and growth and humor were assigned to different higher-order factors.

Another example of coping mode is restraint. In line with the hypothesis, two strategies of restraint were recognized, problem restraint and avoidant restraint, which are consistent with the existence of two forms of restraint suggested by Lyne and Roger (2000). In the present study the angular difference between those strategies was 177.37°. This striking heterogeneity of scale can have serious consequences for predicting external variables, e.g., mental health. Importantly, restraint coping as one construct was unrelated to CCM styles, but two restraint strategies could be meaningfully located within the model. In conclusion, reinterpretation, humor and restraint strategies revealed substantial relationships with CCM styles. Generally, hypothesis 5 concerning the potential of the CCM to integrate coping strategies representing different coping modes was confirmed.

Predicting Mental Health with the CCM Styles

Associations between mental health indicators and coping styles were investigated via the vector method and regression analyses. Vector results proved that all mental health indicators were meaningfully related to CCM constructs. Moreover, it was found that all of those indicators formed a sinusoidal pattern of correlations with CCM coping styles. The weakest association with CCM categories was revealed by the TABP, while the strongest – by hope. In line with theoretical predictions, self-esteem was most closely linked to Optimistic action. Hope was connected to Optimistic action and, less strongly, to Problem solving, which is partly contrary to expectations (hope was postulated to be located in Optimistic action). According to the hypothesis, mental health problems were related to Pessimistic passivity. As in the vector method, in regression analysis hope, self-esteem, and

mental health problems were linked to the Optimistic action–Pessimistic passivity dimension. Pessimistic passivity and Problem solving were the most consistent predictors of mental health indicators (interestingly, Problem solving had not been hypothesized to predict the positive aspects of mental health, i.e., hope and self-esteem). Also Optimistic action was linked to mental health indicators (according to expectations), but not as consistently as Pessimistic passivity and Problem solving.

According to predictions, the TABP should be located between Preoccupation with the problem and Negative emotional coping. Regressions demonstrated that the TABP was related to Preoccupation with the problem, but not to Negative emotional coping. However, although the vector method also revealed the TABP to be associated with Negative emotional coping, it was actually located between that construct and Preoccupation with the problem. Generally, relationships between the CCM styles and the TABP were found to be consistent with expectations.

In conclusion, only one mental health variable (i.e., the TABP) was linked to Preoccupation with the problem and Negative emotional coping. In turn, both in regression analysis and in the vector method, most mental health indicators (i.e., hope with both of its components, self-esteem, and mental health problems) were associated with the Optimistic action–Pessimistic passivity dimension or that dimension and Problem solving. In general, hypothesis 6 about the possibility of predicting mental health using the CCM styles was corroborated, with Optimistic action–Pessimistic passivity and Problem solving being particularly important in this respect.

It should be noted that, as it was theorized in Chapter 3, Optimistic action and Pessimistic passivity are associated (in opposite manners) with mindfulness (cf. Kabat-Zinn, 1994) understood as acknowledgement or suppression of thoughts and feeling about the stressor. Mindfulness was shown to be correlated positively with self-esteem and life satisfaction and negatively with mental health problems (Keng et al., 2011). Furthermore, mindfulness has been proposed as a common factor of change in all psychotherapy orientations (Martin, 1997). It beneficially influences functioning by improving attention regulation, focusing on important goals, and disregarding distractors (Holzel et al., 2011). It is plausible that attention regulation contributes to Optimistic action processes (i.e., generation of new ways of problem solving and eliciting positive emotions and positive expectations about outcomes). Indeed, mindfulness facilitates emotion regulation through reappraisal (Garland et al., 2015; Rayan & Ahmad, 2016).

Other hypothetical mechanisms underlying Optimistic action and Pessimistic passivity as a construct related to mental health are: ego-resiliency–ego-brittleness (Block et al., 1986; Block & Kremen, 1996; cf. trait resilience, Fletcher & Sarkar, 2013), action orientation–state orientation (Kuhl, 1981, 2000), and cognitive reappraisal–expressive suppression (Gross & John, 2003). For instance, Optimistic action vs. Pessimistic passivity are similar to ego-resiliency vs. ego-brittleness in

terms of the flexibility vs. rigidity of regulating one's own impulses and emotions depending on situational demands (cf. Block et al., 1986). Furthermore, ego-resilient individuals use positive emotions to bounce back from difficult experiences and are able to find some positive meaning in them (cf. Tugade & Frederickson, 2004). It seems reasonable that also Optimistic action involves using positive emotions to recover from stressful situations. What is important in this context, trait resilience is associated positively with mental health indicators and negatively with mental health problems (see the meta-analysis of 60 studies by Hu et al., 2015).

Various hypothetical mechanisms of Optimistic action (vs. Pessimistic passivity), such as mindfulness, ego-resiliency, and reappraisal, are directly or indirectly involved in eliciting positive emotions. The role of positive emotions is recognized in the broaden-and-build theory of positive emotions (Fredrickson, 2001), according to which experiencing negative emotions narrows people's repertoire of cognitive and behavioral responses (e.g., escape upon eliciting fear). On the other hand, positive emotions broaden one's repertoire of cognitions and behaviors. A broadened mindset enables the development of psychological and social resources which diminish stress intensity and, possibly, its physiological costs. Furthermore, positive emotions can even undo the cardiovascular results of negative emotions (Fredrickson et al., 2000).

The ability to regulate positive and negative emotions is the key difference between action- and state-orientation (Kuhl, 2000). In contrast to state orientation, action orientation is associated with efficient emotion regulation. This is important considering that positive emotions facilitate (and negative emotions hinder) access to various self-representations, goals and feelings under stress (Baumann & Kuhl, 2005). The overarching goals and self-knowledge of individuals endorsing state orientation under conditions of stress are separated from new experiences (cf. Koole et al., 2005). Compared to action orientation, state orientation is related to rumination (Kuhl & Baumann, 2000) and inferior task performance (Brunstein & Olbrich, 1985).

Presumably, positive emotions elicited by Optimistic action can allow access to overarching goals and self-knowledge, facilitating adaptation to stress. The broadening of thinking and performance improvement induced by positive emotions can constitute one of the mechanisms of Optimistic action. However, it seems important that Optimistic action encompasses the use of cognitive transformations which create positive expectations about the possibility of solving the problem, or, in other words, enhance hope, which has been identified as a powerful protective factor against mental health problems (Chang et al., 2015; O'Keefe & Wingate, 2013; Wong & Lim, 2009). Hope has been associated with a lower intensity of depression symptoms (Rajandram et al., 2011; Wong & Lim, 2009), suicidal ideation (Luo et al., 2016; O'Keefe & Wingate, 2013), suicidal behaviors (Chang et al., 2015; Luo et al., 2016), as well as greater reasons for living (Chang et al., 2015), posttraumatic growth (PTG, Ho et al., 2011), and life satisfaction (Wong & Lim, 2009).

As mentioned above, indicators of the positive aspects of mental health are strongly associated with Optimistic action. However, they are located in slightly different CCM regions, which merits a brief explanation. Self-esteem is placed in Optimistic action, but with a shift towards Positive emotional coping, while hope with its components is located between Optimistic action and Problem solving. Importantly, COPE growth is situated between Optimistic action and Problem solving, whereas COPE positive reinterpretation between Optimistic action and Positive emotional coping. These two areas of the circumplex (i.e., Optimistic action/Positive emotional coping and Optimistic action/Problem solving) can be related to two types of coping aimed at reducing discrepancies between actual and intended courses of events, i.e., assimilative coping and accommodative coping (Brandtstädter & Renner, 1990). While assimilative coping involves modifying the situation at hand to suit one's preferences, accommodative coping refers to the modification of one's preferences in line with the prevailing circumstances. It seems that Optimistic action/Problem solving reflects assimilative coping, whereas Optimistic action/Positive emotional coping resembles accommodative coping (cf. Table 9).

In addition to Optimistic action and Pessimistic passivity, also Problem solving can be used to predict mental health. Constructs similar to Problem solving have been found to be related to better health outcomes from the perspective of coping (Endler & Parker, 1990b; Li et al., 2006), and emotion regulation (Aldao et al., 2010). Problem-focused coping/task-oriented coping is usually associated with lower mental health problems (Bouteyre et al., 2007; Endler & Parker, 1990b; Li et al., 2006) and higher levels of well-being (Kato, 2015). In their meta-analysis of relationships between psychopathology and emotion regulation, Aldao et al. (2010) found that people endorsing problem solving consistently reported less psychopathology. Surprisingly, the effect of problem solving was stronger than that of reappraisal and acceptance.

As mentioned above, in the presented study Pessimistic passivity was related to mental health indicators more consistently than Optimistic action. This is in line with the findings of Aldao et al. (2010), who observed that maladaptive emotion regulation strategies (i.e., rumination, avoidance, suppression) are more consistently and strongly correlated with psychopathology than adaptive strategies (i.e., acceptance, reappraisal). In other words, the use of maladaptive emotion regulation strategies is more harmful than a lack of adaptive strategies. Problem solving is an exception in that it was quite strongly and consistently correlated with psychopathology (Aldao et al., 2010).

In the present study, the dimension of Optimistic action vs. Pessimistic passivity was consistently linked to mental health, while Preoccupation with the problem vs. Hedonic disengagement was not except for the TABP, for which Preoccupation with the problem (but not Hedonic disengagement) was a significant predictor. There are two possible explanations for these results. First, Preoccupation with the problem vs. Hedonic disengagement has indeed a weak relationship with mental health,

or none at all. Second, associations with mental health are moderated by other variables (e.g., situation controllability). It seems reasonable that a configuration of constructs resembling Preoccupation with the problem is harmful when control is low (cf. Knoll et al., 2005; Kvillemo & Bränström, 2014). On the other hand, in controllable situations problem-focused coping is related to lower distress (Osowiecki & Compas, 1998; Park et al., 2001). When perceived control is low, strategies similar to Hedonic disengagement, i.e., humor (Eisengart et al., 2003), humor and denial (Ben-Zur & Zeidner, 1995), and problem-appraisal coping (Terry & Hynes, 1998), predict decreased distress, while it may be assumed that in high control situations strategies resembling Hedonic disengagement are pointless and potentially dysfunctional.

In previous research, mental health indicators have been associated with various coping scales within a given measure. For example, self-esteem was related to two of the three CISS coping styles (Geyh et al., 2012; Leandro & Castillo, 2010), five of the 15 COPE constructs (Carver et al., 1989; Gudjonsson & Sigurdsson, 2003; Scheier et al., 1994) as well as eight of the 21 categories from Coping Responses (CR; Myers & Rosen, 1999). It should be noted that all the aforementioned studies employed the RSES and relationships between coping and that simple unidimensional construct do not seem clear. Similarly, other variables associated with mental health, e.g., distress, have been associated with configurations of various coping constructs (Cohan et al., 2006; Kato, 2015; McWilliams et al., 2003). However, those configurations are not derived from a theoretical background.

In the research presented herein, external variables can be easily and clearly linked to coping. An angular location and vector length are sufficient to describe the relationship between a given construct and the CCM styles, instead of configurations of disparate coping categories. For instance, in the CCM, self-esteem was assigned 41.25° with a vector length of .55, which means that it is linked to Optimistic action – a construct representing flexible efforts to deal with stress. By means of the CCM, mental health variables can be connected to other constructs, e.g., ego-resiliency (Block et al., 1986). The model presented in this dissertation enables a theoretically coherent explanation of mental health indicators that is more parsimonious than other coping models.

Future Directions

At least four directions of research associated with the CCM are particularly interesting: insight in psychosis, correlates of posttraumatic growth (PTG), coping processes underlying psychological interventions, and the relationship between appraisal and the preferred coping strategy.

Insight in psychosis and the CCM. As mentioned in the theoretical model, a combination of coping categories similar to Preoccupation with the problem is related to insight in psychosis (cf. Cooke et al., 2007). Lysaker et al. (2005) addressed the question of whether insight in schizophrenia is linked to coping at different levels of hope. Since hope exhibits a strong association with CCM Optimistic action, it could be hypothesized that patients with high insight and high hope should show the greatest preference for Problem solving. In turn, individuals revealing high insight and low hope may have a tendency for Negative emotional coping. And indeed, Lysaker et al. (2005) found that participants with high insight and high hope demonstrated greater use of acting and lower use of ignoring than patients with high insight and low hope. These results are consistent with the expectations derived from the CCM.

Correlates of posttraumatic growth. The CCM can be applied to interpret PTG, which consists of positive changes resulting from coping with trauma (Tedeschi & Calhoun, 1996). According to Zoellner and Maercker (2006), a comprehensive description of predictors of PTG requires two components: functional (self-transcending, constructive) and illusory (self-deceptive, dysfunctional). The first component concerns recreating an understanding of the individual's beliefs about the world (Batten & Oltjenbruns, 1999; Tedeschi et al., 2007), spiritual development (Calhoun et al., 2000), problem-focused coping, positive reinterpretation and acceptance (Linley & Joseph, 2004). The second component is related to some forms of self-deception (e.g., exaggerated perception of control, unrealistic optimism), and can predict good adjustment to stressful events (Taylor & Armor, 1996) as well as lower cardiovascular reactivity (Why & Huang, 2011). A model with two components of PTG has been empirically verified (Zoellner et al., 2008).

Various combinations of these two constructs are possible: "if the illusory perception of PTG co-exists with deliberate thinking about the trauma and does not preclude active coping efforts, then, it may serve as a short-term adaptive palliative coping strategy" (Zoellner & Maercker, 2006, p. 640). The possibility of the existence of different configurations of the two components is convergent with the circumplex structure of coping. The functional component may be associated with Problem solving and Optimistic action, whereas the illusory component with Positive emotional coping and Hedonic disengagement.

Psychological interventions and the CCM. As it has been noted, to date coping models have not provided a sound theoretical basis for psychological interventions and there is a gap between coping theory and clinical practice (Coyne & Racioppo, 2000). Fortunately, there is also an increasing body of research on the effectiveness of different interventions (Foa et al., 1999; Steenkamp et al., 2015). According to a meta-analysis of psychotherapies for war veterans with posttraumatic stress disorder (PTSD), the two most effective methods are cognitive therapy and

exposure therapy (Steenkamp et al., 2015). The idea of cognitive therapy is consistent with the coping structure postulated by the CCM, especially as regards the styles of Optimistic action and Pessimistic passivity, as well as Preoccupation with the problem. For example, cognitive biases in depressed individuals and trauma victims are similar to the cognitive responses included in Pessimistic passivity as a coping style. According to Beck (Beck & Dozois, 2011), depression is associated with negative thoughts about oneself, one's experiences, and the future. Analogously, trauma victims often demonstrate inappropriate guilt related to their experiences, e.g., a veteran might blame himself for the death of his or her colleague(s). These biases result in negative emotions and impaired functioning (Foa et al., 1999).

Cognitive training raises awareness of the content of one's thinking and beliefs, enabling intentional modification of unrealistic cognitive schema and automatic thoughts to improve emotional and behavioral functioning (Beck & Dozois, 2011). However, interventions do not rely on a simple replacement of negative representations with positive thoughts. During cognitive therapy, individuals shift their appraisals from unhealthy thoughts to more evidence-based ones (Beck & Dozois, 2011). This refers to the idea of decentering, which is regarded as a useful therapeutic mechanism (cf., Safran & Segal, 1996) associated with Optimistic action. Similarly, hope (related to Optimistic action) has been found to be a mechanism of change during cognitive therapy for PTSD patients (Gilman et al., 2012). While many processes stimulated by this intervention resemble Optimistic action, it seems that some important strategies remain excluded.

Presumably, processes triggered during one session (or even part of one session) refer to a configuration of a few CCM styles. It cannot be overlooked that cognitive therapy involves problem focusing on negative events and analyzing them, which is similar to Preoccupation with the problem. During a single session, the patient could be encouraged to engage in rational analysis of a painful event (cf. Preoccupation with the problem), which can bring back memories leading to expressing distress (cf. Negative emotional coping/Pessimistic passivity). The identification of negative automatic thoughts and a somewhat better understanding of one's own distressing feelings (cf. Preoccupation with the problem/Problem solving) facilitates finding some meaning in the difficult experience and gradually transforming one's view of the world (cf. Optimistic action). It seems that the adaptive processes activated during a single therapeutic session resemble a complex and dynamic combination of several coping styles with Preoccupation with the problem and Optimistic action being especially important.

Generally, in cognitive therapy change in cognitive processes can be interpreted as a transition from Pessimistic passivity to Optimistic action (presumably through Preoccupation with the problem). Such therapy should increase awareness of one's own cognitive processes and reduce those eliciting negative emotions and negative expectations as to one's own competence. Simultaneously, therapy improves

the capacity for cognitive modifications to find new ways of problem solving. It also stimulates the cognitive processes of eliciting positive emotions as well as positive expectations about one's ability to overcome problems. In addition, it is assumed that the enhancement of adaptable cognitive processes (e.g., reappraisal) is separate from the prevention of negative cognitive processes (e.g., rumination) (cf. Aldao et al., 2010).

The other widely applied therapeutic method in trauma victims is exposure therapy (Steenkamp et al., 2015), which encompasses psychoeducation, exposure to trauma-related stimuli through imagination or narratives, *in vivo* exposure (under natural conditions), and modification of beliefs associated with the difficult experience (Steenkamp et al., 2015). It seems that the processes activated during exposure resemble Preoccupation with the problem, which can facilitate habituation to distress-generating stimuli.

Another method useful in stressful situations is distraction (Malloy & Milling, 2010). A particularly interesting form of this technique involves virtual reality, which has been reported to be effective in pain reduction (Malloy & Milling, 2010). For instance, an individual receiving a medical treatment may wear a helmet rendering a computer-simulated 3-D reality. Thus, during a painful medical procedure, a child may play a game in a virtual ice-cream factory (Chan et al., 2007). Coping through virtual reality distraction is similar to CCM Hedonic disengagement. Indeed, it appears that a variety of psychological interventions can be associated with the coping styles included in the CCM.

Furthermore, CCM categories can be related to other techniques that improve coping with stress, e.g., expressive writing. A study by Low et al. (2008) investigated three types of expressive writing: evaluating the appropriateness of one's emotional response, attending to one's emotions in an accepting way, and describing the objective details of the experience. Evaluating one's emotions reflects Negative emotional coping/Pessimistic passivity, accepting one's emotional responses is similar to Positive emotional coping/Optimistic action, whereas a focus on objective elements of the situation resembles Problem solving. If in fact different strategies can be identified within one coping mode, this could facilitate the refinement of psychological interventions and the aggregation of results from studies using diverse inventories.

Connection between appraisal and the preferred coping strategy. Lazarus and Folkman (1984) argued that coping cannot be regarded as effective or ineffective independently of the situation in which it is employed. This line of reasoning is reflected in the idea of 'goodness of fit' referring to a match between appraisal and the endorsed coping strategy. A greater preference for problem-focused strategies in controllable situations and a more extensive use of emotion-focused efforts in uncontrollable situations should be associated with better adjustment (Lazarus & Folkman, 1984).

Two dimensions seem to be particularly important from the point of view of the fit between appraisal and coping: Optimistic action vs. Pessimistic passivity and Preoccupation with the problem vs. Hedonic disengagement. In relatively controllable situations Optimistic action can be beneficial (Knoll et al., 2005), but also when perceived control is low, it is still associated with better outcomes (Kvillemo & Bränström, 2014; Taylor et al., 2008), or at least it is uncorrelated with distress (Ben-Zur & Zeidner, 1995). In the study of Ben-Zur and Zeidner (1995) situational active coping, planning, and positive reinterpretation were uncorrelated with state anxiety and bodily symptoms during war, but were negatively linked to distress after war. Higher scores on the active coping factor (encompassing problem-focused coping, positive reinterpretation and growth, as well as seeking social support) predicted better mental health in patients with end-stage lung disease awaiting lung transplantation (Taylor et al., 2008). A configuration of situational coping strategies reflecting Optimistic action (i.e., active coping and focus on the positive) was associated with higher positive affect in patients undergoing cataract surgery on the day of admission and on the day of surgery (Knoll et al., 2005). Thus, it seems that Optimistic action is beneficial both in an uncontrollable condition of severe stress (i.e., awaiting lung transplantation) and in a somehow more controllable situation of mild stress (i.e., cataract surgery).

The opposite of Optimistic action is Pessimistic passivity, which can be harmful regardless of situation controllability (Fournier et al., 2002; Knoll et al., 2005; Taylor et al., 2008). Patients awaiting lung transplantation who relied on disengagement coping (including avoidance strategies and focus on and venting of emotions) revealed poorer mental health (Taylor et al., 2008). Knoll et al. (2005) found that in patients undergoing cataract surgery negative affect was associated with situational evasive coping (containing self-blame, denial, and venting) at three out of four analyzed time points. Fournier et al. (2002) investigated the effects of coping on the functioning of patients with different levels of perceived control. People with diabetes represented the highest control perception, rheumatoid arthritis – moderate, and sclerosis multiplex – the lowest. The authors found that situational emotion-oriented coping predicted greater distress for all patient groups (Fournier et al., 2002).

A second dimension useful in elucidating the fit between coping and situation controllability is Preoccupation with the problem vs. Hedonic disengagement. It seems plausible that under controllable conditions the former may be associated with experiencing negative emotions in the short term due to active efforts to deal with the stress. In a long term perspective, however, it can reduce stress and should be related to better adjustment. Preoccupation with the problem arises from configurations of Problem solving, i.e., problem-focused coping (Osowiecki & Compas, 1998; Park et al., 2001) and problem-management coping (Terry & Hynes, 1998), as well as Negative emotional coping, i.e., venting (Ben-Zur & Zeidner, 1995) and accepting responsibility (Penley et al., 2002). The Problem solving component

of that construct seems to be adaptive when control is high and potentially harmful in uncontrollable conditions. When perceived control is high, the endorsement of problem-focused coping is correlated with better mental health (Osowiecki & Compas, 1998; Park et al., 2001). In contrast, in uncontrollable situations problem-management coping predicts increased distress (Terry & Hynes, 1998).

Presumably, the negative emotional component of Preoccupation with the problem is harmful or more harmful under low control. Situational accepting responsibility predicted poorer health for uncontrollable stressors, but no correlation was found for controllable situations (Penley et al., 2002). Situational venting revealed a stronger positive correlation with distress during war than after war (Ben-Zur & Zeidner, 1995). In conclusion, Preoccupation with the problem can be generally beneficial when control is high (Osowiecki & Compas, 1998; Park et al., 2001), but maladaptive when the conditions are uncontrollable (Ben-Zur & Zeidner, 1995; Penley et al., 2002).

In contrast, in controllable situations Hedonic disengagement can be moderately positively associated with distress or uncorrelated with it. For high control conditions, strategies similar to Hedonic disengagement/Problem avoidance, i.e., distancing (Penley et al., 2002), predict worse health. It has been found that when control is high responses similar to Positive emotional coping/Hedonic disengagement, i.e., humor (Eisengart et al., 2003), are unrelated to adjustment. On the other hand, in low-control situations constructs resembling Hedonic disengagement/Positive emotional coping, i.e., humor (Carver et al., 1993; Eisengart et al., 2003) and problem-appraisal coping (Terry & Hynes, 1998), or Hedonic disengagement, i.e., humor and denial (Ben-Zur & Zeidner, 1995), are correlated with better mental health or lower distress. Thus, the construct of Hedonic disengagement could provide a framework for identifying adaptable avoidance responses in uncontrollable situations.

In conclusion, when perceived control is high, the endorsement of Optimistic action seems to be associated with the strongest benefits and the absence of costs. In the same situations, Preoccupation with the problem can be functional, but some costs are possible (e.g., transient negative emotions). In a highly controllable environment Pessimistic passivity is strongly linked to distress, while Hedonic disengagement is unrelated or moderately positively correlated with distress. In uncontrollable conditions, Optimistic action and Hedonic disengagement are probably most adaptable. Under low control, Pessimistic passivity and Preoccupation with the problem may be harmful. It may be hypothesized that Optimistic action is functional regardless of the situation (or useful in the widest spectrum of situations) and Pessimistic passivity is maladaptive irrespectively of conditions. In turn, the dimension of Preoccupation with the problem vs. Hedonic disengagement is beneficial or harmful depending of situation controllability. Thus, the CCM appears to shed new light on the fit between the endorsed coping strategy and situational controllability, but further studies are needed to verify the above insights.

General Conclusions and Limitations

The structure of coping styles postulated for the CCM was fully confirmed using its operationalizing instrument. The vast majority of external coping scales and all mental health indicators were meaningfully located within the CCM, confirming its integrative potential. Indeed, the CCM overcomes some serious problems in coping research. First, the CCM acknowledges that coping can include both goal-directed actions and emotion-induced unreflective responses to stress. Second, the CCM supplements the set of coping categories (i.e., process, strategy, style) with the notion of coping mode. Third, it may provide a platform for the synthesis of different coping constructs and create a common denominator for diffuse research efforts devoted to coping. Furthermore, it is poised to afford a coherent interpretation of the results and integrate the knowledge gained using different coping measures. Fourth, the CCM offers a more theoretically meaningful and parsimonious explanation of mental health than other coping models. Fifth, it can clarify relationships between the effectiveness of coping strategies and situation controllability.

As far as limitations are concerned, five constructs from the COPE could not be located within the CCM. Another major limitation is methodological: the study is based on a self-report measure administered in one culture on a quite homogenous (e.g., in terms of age) sample. Ideally, the structure of coping styles should be investigated by different operationalizations (e.g., other-informant methods, semi-structured interviews), on diverse age groups, and in other languages and cultures.

Future research should also focus on testing CCM applications in predicting coping effects in real stressful situations. The model could elucidate some contradictory findings about relationships between coping (e.g., different forms of problem avoidance) and distress depending on situation controllability. It could also provide a suitable space for the integration of coping with other constructs (e.g., emotion regulation processes) and afford insights into psychosis and adjustment after trauma. Furthermore, the CCM provides a linkage between coping theory and mechanisms of improvement during psychological interventions (such as cognitive therapy). Last but not least, the CCM may foster the generation of new hypotheses and contribute to refining research problems, e.g., concerning the relationship between mental health and the continuum of expressive writing methods. If in fact different coping strategies can be identified within one coping mode, this could facilitate the consolidation of results from studies using different questionnaires, and perhaps help improve psychological interventions.

References

Abele, A.E., & Wojciszke, B. (2007). Agency and communion from the perspective of self versus others. *Journal of Personality and Social Psychology, 93*(5), 751–763. https://doi.org/10.1037/0022-3514.93.5.751

Acton, G.S., & Revelle, W. (2004). Evaluation of ten psychometric criteria for circumplex structure. *Methods of Psychological Research Online, 9*(1), 1–27.

Aldao, A., Nolen-Hoeksema, S., & Schweizer, S. (2010). Emotion regulation strategies across psychopathology: A meta-analytic review. *Clinical Psychology Review, 30(2),* 217–237. https://doi.org/10.1016/j.cpr.2009.11.004

Alden, L.E., Wiggins, J.S., & Pincus, A.L. (1990). Construction of circumplex scales for the Inventory of Interpersonal Problems. *Journal of Personality Assessment, 55*(3-4), 521–536. https://doi.org/10.1080/00223891.1990.9674088

Aldridge, A.A., & Roesch, S. (2007). Coping and adjustment in children with cancer: A meta-analytic study. *Journal of Behavioral Medicine, 30*(2) 115–129. https://doi.org/10.1007/s10865-006-9087-y

Aldwin, C.M., & Revenson, T.A. (1987). Does coping help? A reexamination of the relation between coping and mental health. *Journal of Personality and Social Psychology, 53*(2), 337–348. https://doi.org/10.1037/0022-3514.53.2.337

Allen, A.B., & Leary, M.R. (2010). Self-compassion, stress, and coping. *Social and Personality Psychology Compass, 4*(2), 107–118. https://doi.org/10.1111/j.1751-9004.2009.00246.x

Almássy, Z., Pék, G., Papp, G., & Greenglass, E.R. (2014). The psychometric properties of the Hungarian version of the Proactive Coping Inventory: Reliability, construct validity and factor structure. *International Journal of Psychology & Psychological Therapy, 14*(1), 115–124.

American Psychological Association. (2007). Guidelines for psychological practice with girls and women. *American Psychologist, 62*(9), 949–979. https://doi.org/10.1037/0003-066X.62.9.949

Amirkhan, J.H. (1990). A factor analytically derived measure of coping: The Coping Strategy Indicator. *Journal of Personality and Social Psychology, 59*(5), 1066–1074. https://doi.org/10.1037/0022-3514.59.5.1066

Amstadter, A.B., & Vernon, L.L. (2008). A preliminary examination of thought suppression, emotion regulation, and coping in a trauma-exposed sample. *Journal of Aggression, Maltreatment & Trauma, 17*(3), 279–295. https://doi.org/10.1080/10926770802403236

Ano, G., & Vasconcelles, E. (2005). Religious coping and psychological adjustment to stress: A meta-analysis. *Journal of Clinical Psychology, 61*(4) 461–480. https://doi.org/10.1002/jclp.20049

Anshel, M.H., Kang, M., & Miesner, M. (2010). The approach-avoidance framework for identifying athletes' coping style as a function of gender and race. *Scandinavian Journal of Psychology*, *51*(4), 341–349. https://doi.org/10.1111/j.1467-9450.2009.00796.x

Antonovsky, A. (1979). *Health, stress, and coping.* Jossey-Bass.

Arbuckle, J.L. (2013). *IBM SPSS AMOS 22 Users' Guide.* Amos Development Corporation.

Arslan, C., Dilmac, B., & Hamarta, E. (2009). Coping with stress and trait anxiety in terms of locus of control: A study with Turkish university students. *Social Behavior and Personality*, *37*(6), 791–800. https://doi.org/10.2224/sbp.2009.37.6.791

Aspinwall, L.G., & Taylor, S.E. (1997). A stitch in time: Self-regulation and proactive coping. *Psychological Bulletin, 121*(3), 417–436. https://doi.org/10.1037/0033-2909.121.3.417

Austenfeld, J.L., & Stanton, A.L. (2004). Coping through emotional approach: A new look at emotion, coping, and health-related outcomes. *Journal of Personality*, *72*(6), 1335–1364. https://doi.org/10.1111/j.1467-6494.2004.00299.x

Aydan, A. (2015). Identifying the relationship of teacher candidates' humor styles with anxiety and self-compassion levels. *Eurasian Journal of Educational Research, 15*(59), 1–16. https://ejer.com.tr/identifying-the-relationship-of-teacher-candidates-humor-styles-with-anxiety-and-self-compassion-levels

Ayers, T.S., Sandler, I.N., West, S.G., & Roosa, M.W. (1996). A dispositional and situational assessment of children's coping: Testing alternative models of coping. *Journal of Personality*, *64*(4), 923–958. https://doi.org/10.1111/j.1467-6494.1996.tb00949.x

Bakan, D. (1966). *The duality of human existence: An essay on psychology and religion.* Rand Mcnally.

Balzarotti, S., John, O.P., & Gross, J.J. (2010). An Italian adaptation of the Emotion Regulation Questionnaire. *European Journal of Psychological Assessment*, *26*(1), 61–67. https://doi.org/10.1027/1015-5759/a000009

Band, E.B., & Weisz, J.R. (1988). How to feel better when it feels bad: Children's perspectives on coping with everyday stress. *Developmental Psychology*, *24*(2), 247–253. https://doi.org/10.1037/0012-1649.24.2.247

Barakat, L.P., Schwartz, L.A., Simon, K., & Radcliffe, J. (2007). Negative thinking as a coping strategy mediator of pain and internalizing symptoms in adolescents with sickle cell disease. *Journal of Behavioral Medicine*, *30*(3), 199–208. https://doi.org/10.1007/s10865-007-9103-x

Barez, M., Blasco, T., Fernandez-Castro, J., & Viladrich, C. (2007). A structural model of the relationships between perceived control and adaptation to illness in women with breast cancer. *Journal of Psychosocial Oncology, 25*(1), 21–43. https://doi.org/10.1300/j077v25n01_02

Barrett, P. (1986). Factor comparison: An examination of three methods. *Personality and Individual Differences*, *7*(3), 327–340. https://doi.org/10.1016/0191-8869(86)90008-5

Barrett, P. (2007). Structural equation modelling: Adjudging model fit. *Personality and Individual Differences*, *42*(5), 815–824. https://doi.org/10.1016/j.paid.2006.09.018

Barrett, P. (2019). *Orthosim target-comparison matrix fitting v3.0.* https://www.pbarrett.net/orthosim/orthosim.html

Batten, M., & Oltjenbruns, K.A. (1999). Adolescent sibling bereavement as a catalyst for spiritual development: A model for understanding. *Death Studies*, *23*(6), 529–546. https://doi.org/10.1080/074811899200876

Baumann, N., & Kuhl, J. (2005). Positive affect and flexibility: overcoming the precedence of global over local processing of visual information. *Motivation and Emotion, 29*(2), 123–134. https://doi.org/10.1007/s11031-005-7957-1

Beck, A.T., & Dozois, D.J. (2011). Cognitive therapy: Current status and future directions. *Annual Review of Medicine*, *62*(1), 397–409. https://doi.org/10.1146/annurev-med-052209-100032

Beck, A.T., Weissman, A., Lester, D., & Trexler, L. (1974). The measurement of pessimism: The Hopelessness Scale. *Journal of Consulting and Clinical Psychology, 42*(6), 861–865. https://doi.org/10.1037/h0037562

Ben-Zur, H., & Zeidner, M. (1995). Coping patterns and affective reactions under community crisis and daily routine conditions. *Anxiety, Stress & Coping: An International Journal, 8*(3), 185–201. https://doi.org/10.1080/10615809508249372

Berg, C., Meegan, S., & Deviney, F. (1998). A social–contextual model of coping with everyday problems across the life span. *International Journal of Behavioral Development, 22*(2), 239–261. https://doi.org/10.1080/016502598384360

Berrenberg, J.L. (1987). The belief in personal control scale: A measure of God-mediated and exaggerated control. *Journal of Personality Assessment, 51*(2), 194–206. https://doi.org/10.1207/s15327752jpa5102_4

Billings, A.G., & Moos, R.H. (1981). The role of coping responses and social resources in attenuating the stress of life events. *Journal of Behavioral Medicine, 4*(2), 139–157. https://doi.org/10.1007/bf00844267

Billings, A.G., & Moos, R.H. (1984). Coping, stress, and social resources among adults with unipolar depression. *Journal of Personality and Social Psychology, 46*(4), 877–891. https://doi.org/10.1037/0022-3514.46.4.877

Bishop, S.R., Lau, M., Shapiro, S., Carlson, L., Anderson, N.D., Carmody, J., Segal, Z.V., Abbey, S., Speca, M., Velting, D., & Devins, G. (2004). Mindfulness: A proposed operational definition. *Clinical Psychology: Science and Practice, 11*(3), 230–241. https://doi.org/10.1093/clipsy.bph077

Blanca, M.J., Alarcón, R., Arnau, J., Bono, R., & Bendayan, R. (2017). Effect of variance ratio on ANOVA robustness: Might 1.5 be the limit? *Behavior Research Methods, 50*(3), 937–962. https://doi.org/10.3758/s13428-017-0918-2

Block, J.H., & Block, J. (1980). The role of ego-control and ego-resiliency in the organization of behavior. In W.A. Collins (Ed.), *Development of cognition, affect, and social relations* (Vol. 13, pp. 39–101). Lawrence Erlbaum Associates, Inc.

Block, J.H., Block, J., & Gjerde, P.F. (1986). The personality of children prior to divorce: A prospective study. *Child Development, 57*(4), 827–840. https://doi.org/10.2307/1130360

Block, J., & Kremen, A.M. (1996). IQ and ego-resiliency: Conceptual and empirical connections and separateness. *Journal of Personality and Social Psychology, 70*(2), 349–361. https://doi.org/10.1037/0022-3514.70.2.349

Bodenmann, G. (1997). Dyadic coping: A systemic–transactional view of stress and coping among couples: Theory and empirical findings. *Revue Européenne de Psychologie Appliquée, 47*(2), 137–141.

Bolte, A., Goschke, T., & Kuhl, J. (2003). Emotion and intuition: Effects of positive and negative mood on implicit judgments of semantic coherence. *Psychological Science, 14*(5), 416–421. https://doi.org/10.1111/1467-9280.01456

Bond, M. (2004). Empirical studies of defense style: Relationships with psychopathology and change. *Harvard Review Psychiatry, 12*(5), 263–278. https://doi.org/10.1080/10673220490886167

Bond, M., Gardiner, S.T., Christian, J., & Sigel, J.J. (1983). An empirical examination of defense mechanisms. *Archives of General Psychiatry, 40*, 333–338.

Bouteyre, E., Maurel, M., & Bernaud, J-L. (2007). Daily hassles and depressive symptoms among first year psychology students in France: The role of coping and social support. *Stress and Health, 23*(2), 93–99. https://doi.org/10.1002/smi.1125

Boyd, B. (2002). Examining the relationship between stress and lack of social support in mothers of children with autism. *Focus on Autism and Other Developmental Disorders, 17*(4), 208–215. https://doi.org/10.1177/10883576020170040301

Boysan, M. (2012). Psychometric properties of the Turkish version of the Coping Inventory for Stressful Situations. *Noropsikiyatri Arsivi - Archives of Neuropsychiatry*, *49*(3), 196–202. https://www.noropsikiyatriarsivi.com/en_makaleOzet?id=399

Brands, I.M., Köhler, S., Stapert, S.Z., Wade, D.T., & van Heugten, C.M. (2014). Psychometric properties of the coping inventory for stressful situations (CISS) in patients with acquired brain injury. *Psychological Assessment*, *26*(3), 848–856. https://doi.org/10.1037/a0036275

Brandtstädter, J. (1998). Action perspectives on human development. In W. Damon & R.M. Lerner (Eds.), *Handbook of child psychology: Theoretical models of human development* (pp. 807–863). John Wiley & Sons Inc.

Brandtstädter, J., & Renner, G. (1990). Tenacious goal pursuit and flexible goal adjustment: Explication and age-related analysis of assimilative and accommodative strategies of coping. *Psychology and Aging*, *5*(1), 58–67. https://doi.org/10.1037/0882-7974.5.1.58

Brandtstädter, J., & Rothermund, K. (2002). The life-course dynamics of goal pursuit and goal adjustment: A two-process framework. *Developmental Review*, *22*(1), 117–150. https://doi.org/10.1006/drev.2001.0539

Brans, K., Koval, P., Verduyn, P., Lim, Y.L., & Kuppens, P. (2013). The regulation of negative and positive affect in daily life. *Emotion*, *13*(5), 926–939. https://doi.org/10.1037/a0032400

Brans, K., & Verduyn, P. (2014). Intensity and duration of negative emotions: Comparing the role of appraisals and regulation strategies. *PLOS ONE*, *9*(3), Article e92410. https://doi.org/10.1371/journal.pone.0092410

Brewster, D. (1855). *Memoirs of the life, writings, and discoveries of Sir Isaac Newton* (Vol. 2). Thomas Constable and Co. https://books.google.pl/books/about/Memoirs_of_the_Life_Writings_and_Discove.html?id=Bp8RAAAAYAAJ&redir_esc=y

Browne, M.W. (1992). Circumplex models for correlation matrices. *Psychometrika*, *57*(4), 469–497. https://doi.org/10.1007/bf02294416

Browne, M.W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K.A. Bollen & J.S. Long (Eds.), *Testing structural equation models* (pp. 136–161). Sage Publications, Inc.

Brunstein, J.C., & Olbrich, E. (1985). Personal helplessness and action control: Analysis of achievement-related cognitions, self-assessments, and performance. *Journal of Personality and Social Psychology*, *48*(6), 1540–1551. https://doi.org/10.1037/0022-3514.48.6.1540

Bushman, B.J. (2002). Does venting anger feed or extinguish the flame? Catharsis, rumination, distraction, anger, and aggressive responding. *Personality and Social Psychology Bulletin*, *28*(6), 724–731. https://doi.org/10.1177/0146167202289002

Butler, R.W., Damarin, F.L., Beaulieu, C., Schwebel, A.I., & Thorn, B.E. (1989). Assessing cognitive coping strategies for acute postsurgical pain. *Psychological Assessment: A Journal of Consulting and Clinical Psychology, 1*(1) 41–45. https://doi.org/10.1037/1040-3590.1.1.41

Byrne, D. (1961). The repression-sensitization scale: Rationale, reliability, and validity. *Journal of Personality*, *29*(3), 334–349. https://doi.org/10.1111/j.1467-6494.1961.tb01666.x

Calhoun, L.G., Cann, A., Tedeschi, R.G., & McMillan, J. (2000). A correlational test of the relationship between posttraumatic growth, religion, and cognitive processing. *Journal of Traumatic Stress*, *13*(3), 521–527. https://doi.org/10.1023/a:1007745627077

Calmes, C.A. & Roberts, J.E. (2007). Repetitive thought and emotional distress: Rumination and worry as prospective predictors of depressive and anxious symptomatology. *Cognitive Therapy and Research, 31*, 343–356. https://doi.org/10.1007/s10608-006- 9026-9

Cann, A., Calhoun, L.G., Tedeschi, R.G., Triplett, K.N., Vishnevsky, T., & Lindstrom, C. (2011). Assessing posttraumatic cognitive processes: The Event-Related Rumination Inventory. *Anxiety, Stress & Coping: An International Journal*, *24*(2), 137–156. https://doi.org/10.1080/10615806.2010.529901

Cannon, W.B. (1914). The emergency function of the adrenal medulla in pain and the major emotions. *American Journal of Physiology, 33*(2), 356–372. https://doi.org/10.1152/ajplegacy.1914.33.2.356

Caretta, C. (2011). *Rape Trauma: A Study of Preferred Rape Disclosure Methods and Factors Influencing Psychological Outcomes in Rape Victims* (Order No. 3515544) [Doctoral dissertation, Vanderbilt University]. ProQuest Dissertations and Theses. https://www.proquest.com/openview/c96f71abfb87cc72aofcofb6cdd94450/1?pq-origsite=gscholar&cbl=18750

Carver, C.S. (1997). You want to measure coping but your protocol's too long: Consider the Brief COPE. *International Journal of Behavioral Medicine, 4*(1), 92–100. https://doi.org/10.1207/s15327558ijbm0401_6

Carver, C.S. (2013). *COPE Inventory.* Measurement Instrument Database for the Social Science. https://local.psy.miami.edu/people/faculty/ccarver/availbale-self-report-instruments/cope

Carver, C.S., & Connor-Smith, J. (2010). Personality and coping. *Annual Review of Psychology, 61*(1), 679–704. https://doi.org/10.1146/annurev.psych.093008.100352

Carver, C.S., Pozo, C., Harris, S.D., Noriega, V., Scheier, M.F., Robinson, D.S., Ketcham, A.S., Moffat, F.L., Jr., & Clark, K.C. (1993). How coping mediates the effect of optimism on distress: A study of women with early stage breast cancer. *Journal of Personality and Social Psychology, 65*(2), 375–390. https://doi.org/10.1037/0022-3514.65.2.375

Carver, C.S., & Scheier, M.F. (1994). Situational coping and coping dispositions in a stressful transaction. *Journal of Personality and Social Psychology, 66*(1), 184–195. https://doi.org/10.1037/0022-3514.66.1.184

Carver, C.S., Scheier, M.F., & Fulford, D. (2008). Self-regulatory processes, stress, and coping. In O.P. John, R.W. Robins, & L.A. Pervin (Eds.), *Handbook of personality: Theory and research* (pp. 725–742). The Guilford Press.

Carver, C.S., Scheier, M.F., & Weintraub, J.K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology, 56*(2), 267–283. https://doi.org/10.1037/0022-3514.56.2.267

Chan, D.W. (1994). The Chinese Ways of Coping Questionnaire: Assessing coping in secondary school teachers and students in Hong Kong. *Psychological Assessment, 6*(2), 108–116. https://doi.org/10.1037/1040-3590.6.2.108

Chan, E.A., Chung, J.W., Wong, T.C., Lien, A.S., & Yang, J.Y. (2007). Application of a virtual reality prototype for pain relief of pediatric burn in Taiwan. *Journal of Clinical Nursing, 16*(4), 786–793. https://doi.org/10.1111/j.1365-2702.2006.01719.x

Chang, E.C., Yu, T., Jilani, Z., Fowler, E.E., Yu, E.A., Lin, J., & Hirsch, J.K. (2015). Hope under assault: Understanding the impact of sexual assault on the relation between hope and suicidal risk in college students. *Journal of Social and Clinical Psychology, 34*(3), 221–238. https://doi.org/10.1521/jscp.2015.34.3.221

Christensen, A.J., Turner, C., Smith, T., & Holman, J. (1991). Health locus of control and depression in end-stage renal disease. *Journal of Consulting and Clinical Psychology, 59*(3), 419–424. https://doi.org/10.1037/0022-006x.59.3.419

Christensen, M.V., & Kessing, L. (2005). Clinical use of coping in affective disorder, a critical review of the literature. *Clinical Practice and Epidemiology in Mental Health, 1*, 1–9. https://doi.org/10.1186/1745-0179-1-20

Clark, K.K., Bormann, C.A., Cropanzano, R.S., & James, K. (1995). Validation evidence for three coping measures. *Journal of Personality Assessment, 65*(3), 434–455. https://doi.org/10.1207/s15327752jpa6503_5

Clements, C.M., Sabourin, C.M., & Spiby, L. (2004). Dysphoria and hopelessness following battering: The role of perceived control, coping, and self-esteem. *Journal of Family Violence, 19*(1), 25–36. https://doi.org/10.1023/b:jofv.0000011580.63593.96

Cohan, S.L., Jang, K.L., & Stein, M.B. (2006). Confirmatory factor analysis of a short form of the Coping Inventory for Stressful Situations. *Journal of Clinical Psychology, 62*(3), 273–283. https://doi.org/10.1002/jclp.20211

Cohen, E., & Lazarus, R.S. (1973). Active coping processes, coping dispositions, and recovery from surgery. *Psychosomatic Medicine, 35*(5), 375–389. https://doi.org/10.1097/00006842-197309000-00002

Cohen, S., Janicki-Deverts, D., & Miller, G.E. (2007). Psychological stress and disease. *Journal of the American Medical Association, 298*(14), 1685–1687. https://doi.org/10.1001/jama.298.14.1685

Coleman, M.R. (1992). A comparison of how gifted/LD and average/LD boys cope with school frustration. *Journal for the Education of the Gifted, 15*(3), 239–265. https://doi.org/10.1177/016235329201500304

Compas, B.E., Beckjord, E., Agocha, B. Sherman, M.L., Langrock, A., Grossman, C.I., Dausch, B., Glinder, J., Kaiser, C., Anderson-Hanley, C., & Luecken, L. (2006). Measurement of coping and stress responses in women with breast cancer. *Psycho-Oncology, 15*(12), 1038–1054. https://doi.org/10.1002/pon.999

Compas, B.E., Connor-Smith, J.K., Saltzman, H., Thomsen, A.H., & Wadsworth, M.E. (2001). Coping with stress during childhood and adolescence: Problems, progress, and potential in theory and research. *Psychological Bulletin, 127*(1), 87–127. https://doi.org/10.1037/0033-2909.127.1.87

Compas, B.E., Jaser, S.S., Bettis, A.H., Watson, K.H., Gruhn, M.A., Dunbar, J.P., Williams, E., & Thigpen, J.C. (2017). Coping, emotion regulation, and psychopathology in childhood and adolescence: A meta-analysis and narrative review. *Psychological Bulletin, 143*(9), 939–991. https://doi.org/10.1037/bul0000110

Compas, B.E., Malcarne, V.L., & Fondacaro, K.M. (1988). Coping with stressful events in older children and young adolescents. *Journal of Consulting and Clinical Psychology, 56*(3), 405–411. https://doi.org/10.1037/0022-006x.56.3.405

Compas, B.E., Stoll, M.F., Thomsen, A.H., Oppedisano, G., Epping-Jordan, J.E., & Krag, D.N. (1999). Adjustment to breast cancer: Age-related differences in coping and emotional distress. *Breast Cancer Research and Treatment, 54*(3), 195–203. https://doi.org/10.1023/a:1006164928474

Compas, B.E., Worsham, N., Ey, S., & Howell, D.C. (1996). When mom or dad has cancer: II. Coping, cognitive appraisals, and psychological distress in children of cancer patients. *Health Psychology, 15*(3), 167–175. https://doi.org/10.1037/0278-6133.15.3.167

Connor-Smith, J.K., Compas, B.E., Wadsworth, M.E., Thomsen, A.H., & Saltzman, H. (2000). Responses to stress in adolescence: Measurement of coping and involuntary stress responses. *Journal of Consulting and Clinical Psychology, 68*(6), 976–992. https://doi.org/10.1037/0022-006x.68.6.976

Connor-Smith, J.K., & Flachsbart, C. (2007). Relations between personality and coping: A meta-analysis. *Journal of Personality and Social Psychology, 93*(6), 1080–1107. https://doi.org/10.1037/0022-3514.93.6.1080

Cooke, M., Peters, E., Fannon, D., Anilkumar, A.P., Aasen, I., Kuipers, E., & Kumari, V. (2007). Insight, distress and coping styles in schizophrenia. *Schizophrenia Research, 94*(1-3), 12–22. https://doi.org/10.1016/j.schres.2007.04.030

Cousin, G., & Crane, C. (2016). Changes in disengagement coping mediate changes in affect following mindfulness-based cognitive therapy in a non-clinical sample. *British Journal of Psychology, 107*(3), 434–447. https://doi.org/10.1111/bjop.12153

Coyne, J.C., & Gottlieb, B.H. (1996). The mismeasure of coping by checklist. *Journal of Personality*, *64*(4), 959–991. https://doi.org/10.1111/j.1467-6494.1996.tb00950.x

Coyne, J.C., & Racioppo, M.W. (2000). Never the twain shall meet? Closing the gap between coping research and clinical intervention. *American Psychologist*, *55*(6), 655–664. https://doi.org/10.1037/0003-066x.55.6.655

Cunha, M., & Paiva, M.J. (2012). Text anxiety in adolescents: The role of self-criticism and acceptance and mindfulness skills. *The Spanish Journal of Psychology*, *15*(2), 533–543. https://doi.org/10.5209/rev_sjop.2012.v15.n2.38864

Daryanto, A. (2018). *Heteroskedasticity-SPSS* [Computer software]. https://sites.google.com/site/ahmaddaryanto/scripts/Heterogeneity-test

Davey, G.C., Hampton, J., Farrell, J., & Davidson, S. (1992). Some characteristics of worrying: Evidence for worrying and anxiety as separate constructs. *Personality and Individual Differences*, *13*(2), 133-147. https://doi.org/10.1016/0191-8869(92)90036-O

Dawson, A.E., Allen, J.P., Marston, E.G., Hafen, C.A., & Schad, M.M. (2014). Adolescent insecure attachment as a predictor of maladaptive coping and externalizing behaviors in emerging adulthood. *Attachment & Human Development*, *16*(5), 462–478. https://doi.org/10.1080/14616734.2014.934848

Day, A.L. & Jreige, S. (2002). Examining Type A behavior Pattern to explain the relationship between job stressors and psychosocial outcomes. *Journal of Occupational Health Psychology*, *7*(2), 109–120. https://doi.org/10.1037/1076-8998.7.2.109

Day, A.L., Therrien, D.L., & Carroll, S.A. (2005). Predicting psychological health: assessing the incremental validity of emotional intelligence beyond personality, type A behaviour, and daily hassles. *European Journal of Personality*, *19*(6), 519–536. https://doi.org/10.1002/per.552

De Boo, G., & Wicherts, J. (2009). Assessing cognitive and behavioral coping strategies in children. *Cognitive Therapy and Research*, *33*(1), 1–20. https://doi.org/10.1007/s10608-007-9135-0

Deisinger, J.A., Cassisi, J.E., & Whitaker, S.L. (1996). Relationships between coping-style and PAI profiles in a community sample. *Journal of Clinical Psychology*, *52*(3), 303–310. https://onlinelibrary.wiley.com/doi/10.1002/(SICI)1097-4679(199605)52:3%3C303::AID-JCLP7%3E3.0.CO;2-S

DeYoung, C.G. (2010). Toward a theory of the Big Five. *Psychological Inquiry*, *21*(1), 26–33. https://dx.doi.org/10.1080/10478401003648674

DeYoung, C.G., Peterson, J.B., & Higgins, D.M. (2002). Higher-order factors of the Big Five predict conformity: Are there neuroses of health? *Personality and Individual Differences*, *33*(4), 533–552. https://dx.doi.org/10.1016/S0191-8869(01)00171-4

DeYoung, C.G., Weisberg, Y.J., Quilty, L.C., & Peterson, J.B. (2013). Unifying the Aspects of the Big Five, the Interpersonal Circumplex, and Trait Affiliation. *Journal of Personality*, *81*(5), 465–475. https://dx.doi.org/10.1111/jopy.12020

Devonport, T. (2011). A brief review of commonly used theories and the importance of applying theory in practice. In T.J. Devonport (Ed.), *Managing stress: From theory to application* (pp. 1–12). Nova Science Publishers.

Dohrenwend, B.P. (2006). Inventorying stressful life events as risk factors for psychopathology: Toward resolution of the problem of intracategory variability. *Psychological Bulletin*, *132*(3), 477–495. https://doi.org/10.1037/0033-2909.132.3.477

Dong, M., Giles, W.H., Felitti, V.J., Dube, S.R., Williams, J.E., Chapman, D.P., & Anda, R.F. (2004). Insights into causal pathways for ischemic heart disease. *Circulation*, *110*(13), 1761–1766. https://doi.org/10.1161/01.cir.0000143074.54995.7f

Doron, J., Trouillet, R., Gana, K., Boiché, J., Neveu, D., & Ninot, G. (2014). Examination of the Hierarchical Structure of the Brief COPE in a French Sample: Empirical and Theoretical Convergences. *Journal of Personality Assessment*, *96*(5), 567–575. https://doi.org/10.1080/00223891.2014.886255

Drummond, S., & Brough, P. (2016). Proactive Coping and Preventive Coping: Evidence for Two Distinct Constructs? *Personality and Individual Differences*, *92*, 123–127. https://doi.org/10.1016/j.paid.2015.12.029

Dube, S.R., Fairweather, D., Pearson, W.S., Felitti, V.J., Anda, R.F., & Croft, J.B. (2009). Cumulative childhood stress and autoimmune diseases in adults. *Psychosomatic Medicine*, *71*(2), 243–250. https://doi.org/10.1097/psy.0b013e3181907888

Duncan, S., & Barrett, L.F. (2007). Affect is a form of cognition: A neurobiological analysis. *Cognition & Emotion*, *21*(6), 1184–1211. https://doi.org/10.1080/02699930701437931

Dunkley, D.M., & Blankstein, K.R. (2000). Self-critical perfectionism, coping, hassles, and current distress: A structural equation modeling approach. *Cognitive Therapy and Research*, *24*(6), 713–730. https://doi.org/10.1023/A:1005543529245

Dunkley, D.M., Blankstein, K.R., Halsall, J., Williams, M., & Winkworth, G. (2000). The relation between perfectionism and distress: Hassles, coping, and perceived social support as mediators and moderators. *Journal of Counseling Psychology*, *47*(4), 437–453. https://doi.org/10.1037/0022-0167.47.4.437

D'Zurilla, T.J., Maydeu-Olivares, A., & Kant, G.L. (1998). Age and gender differences in social problem-solving ability. *Personality and Individual Differences*, *25*(2), 241–252. https://doi.org/10.1016/S0191-8869(98)00029-4

Eaton, R.J., & Bradley, G. (2008). The role of gender and negative affectivity in stressor appraisal and coping selection. *International Journal of Stress Management, 15*(1), 94–115. https://doi.org/10.1037/1072-5245.15.1.94

Ebata, A.T., & Moos, R.H. (1991). Coping and adjustment in distressed and health adolescents. *Journal of Applied Developmental Psychology, 12*(1), 33–54. https://doi.org/10.1016/0193-3973(91)90029-4

Eisengart, S.P., Singer, L.T., Fulton, S., & Baley, J.E. (2003). Coping and psychological distress in mothers of very low birth weight young children. *Parenting: Science and Practice*, *3*(1), 49–72. https://doi.org/10.1207/S15327922PAR0301_03

Endler, N.S., Kantor, L., & Parker, J.D. A. (1994). State-trait coping, state-trait anxiety and academic performance. *Personality and Individual Differences*, *16*(5), 617–663. https://doi.org/10.1016/0191-8869(94)90208-9

Endler, N.S., & Parker, J.D. A. (1990a). *Coping Inventory for Stressful Situations (CISS): Manual*. Multi-Health Systems, Inc.

Endler, N.S., & Parker, J.D. (1990b). Multidimensional assessment of coping: A critical evaluation. *Journal of Personality and Social Psychology*, *58*(5), 844–854. https://doi.org/10.1037/0022-3514.58.5.844

Endler, N.S., & Parker, J.D. A. (1994). Assessment of multidimensional coping: Task, emotion, and avoidance strategies. *Psychological Assessment*, *6*(1), 50–60. https://doi.org/10.1037/1040-3590.6.1.50

Falconier, M.K., Jackson, J.B., Hilpert, P., & Bodenmann, G. (2015). Dyadic coping and relationship satisfaction: A meta-analysis. *Clinical Psychology Review*, *42*, 28–46. https://doi.org/10.1016/j.cpr.2015.07.002

Finset, A., Steine, S., Haugli, L., Steen, E., & Lærum, E. (2002). The Brief Approach/Avoidance Coping Questionnaire: Development and validation. *Psychology, Health & Medicine*, *7*(1), 75–85. https://doi.org/10.1080/13548500120101577

Finzi-Dottan, R., & Karu, T. (2006). From emotional abuse in childhood to psychopathology in adulthood – a path mediated by immature defense mechanisms and self-esteem. *Journal of Nervous and Mental Disease, 194*(8), 616–621. https://doi.org/10.1097/01.nmd.0000230654.49933.23

Fletcher, D., & Sarkar, M. (2013). Psychological resilience: A review and critique of definitions, concepts, and theory. *European Psychologist, 18*(1), 12–23. https://doi.org/10.1027/1016-9040/a000124

Flett, G.L., Druckman, T., Hewitt, P.L., & Wekerle, C. (2012). Perfectionism, coping, social support, and depression in maltreated adolescents. *Journal of Rational-Emotive & Cognitive-Behavior Therapy, 30*(2), 118–131. https://doi.org/10.1007/s10942-011-0132-6

Foa, E.B., Davidson, J.R. T., Frances, A., Culpepper, L., Ross, R., Ross, D. (Eds.), & Anxiety Disorders Association of America. (1999). The expert consensus guideline series: Treatment of posttraumatic stress disorder. *The Journal of Clinical Psychiatry, 60*(Suppl 16), 4–76.

Folkman, S. (1997). Positive psychological states and coping with severe stress. *Social Science & Medicine, 45*(8), 1207–1221. https://doi.org/10.1016/S0277-9536(97)00040-3

Folkman, S. (2008). The case for positive emotions in the stress process. *Anxiety, Stress & Coping: An International Journal, 21*(1), 3–14. https://doi.org/10.1080/10615800701740457

Folkman, S., & Lazarus, R.S. (1980). An analysis of coping in a middle-aged community sample. *Journal of Health and Social Behavior, 21(3)* 219–239. https://doi.org/10.2307/2136617

Folkman, S., & Lazarus, R.S. (1985). If it changes it must be a process: Study of emotion and coping during three stages of a college examination. *Journal of Personality and Social Psychology, 48*(1), 150–170. https://doi.org/10.1037/0022-3514.48.1.150

Folkman, S., & Lazarus, R.S. (1988a). Coping as a mediator of emotion. *Journal of Personality and Social Psychology, 54*(3), 466–475. https://doi.org/10.1037/0022-3514.54.3.466

Folkman, S., & Lazarus, R.S. (1988b). *Manual for the Ways of Coping Questionnaire.* Consulting Psychologists Press.

Folkman, S., Lazarus, R.S., Dunkel-Schetter, C., DeLongis, A., & Gruen, R.J. (1986). Dynamics of a stressful encounter: Cognitive appraisal, coping, and encounter outcomes. *Journal of Personality and Social Psychology, 50*(5), 992–1003. https://doi.org/10.1037/0022-3514.50.5.992

Folkman, S., & Moskowitz, J.T. (2000). Positive affect and the other side of coping. *American Psychologist, 55*(6), 647–654. https://doi.org/10.1037/0003-066X.55.6.647

Folkman, S., & Moskowitz, J.T. (2004). Coping: Pitfalls and promise. *Annual Review of Psychology, 55*(1), 745–774. https://doi.org/10.1146/annurev.psych.55.090902.141456

Fontaine, K.R., Manstead, A.S., & Wagner, H. (1993). Optimism, perceived control over stress, and coping. *European Journal of Personality, 7*(4), 267–281. https://doi.org/10.1002/per.2410070407

Forgas, J.P., & East, R. (2008). On being happy and gullible: Mood effects on skepticism and the detection of deception. *Journal of Experimental Social Psychology, 44*(5), 1362–1367. https://doi.org/10.1016/j.jesp.2008.04.010

Fortune, D.G., Richards, H.L., Griffiths, C.E. M., & Main, C.J. (2002). Psychological stress, distress and disability in patients with psoriasis: Consensus and variation in the contribution of illness perceptions, coping and alexithymia. *British Journal of Clinical Psychology, 41*(2), 157–174. https://doi.org/10.1348/014466502163949

Fournier, M., de Ridder, D., & Bensing, J. (2002). Optimism and adaptation to chronic disease: The role of optimism in relation to self-care options of type 1 diabetes mellitus, rheumatoid arthritis and multiple sclerosis. *British Journal of Health Psychology, 7*(4), 409–432. https://doi.org/10.1348/135910702320645390

Frattaroli, J. (2006). Experimental disclosure and its moderators: A meta-analysis. *Psychological Bulletin, 132*(6), 823–865. https://doi.org/10.1037/0033-2909.132.6.823

Fredrickson, B. (2001). The role of positive emotions in positive psychology: The broaden- and-build theory of positive emotions. *American Psychologist*, *56*(3), 218–226. https://doi.org/10.1037/0003-066x.56.3.218

Fredrickson, B.L., & Branigan, C. (2005). Positive emotions broaden the scope of attention and thought–action repertoires. *Cognition & Emotion*, *19*(3), 313–332. https://doi.org/10.1080/02699930441000238

Fredrickson, B.L., Mancuso, R.A., Branigan, C., & Tugade, M.M. (2000). The undoing effect of positive emotions. *Motivation and Emotion*, *24*(4), 237–258. https://doi.org/10.1023/a:1010796329158

Fredrickson, B.L., Tugade, M.M., Waugh, C.E., & Larkin, G.R. (2003). What good are positive emotions in crisis? A prospective study of resilience and emotions following the terrorist attacks on the United States on September 11th, 2001. *Journal of Personality and Social Psychology*, *84*(2), 365–376. https://doi.org/10.1037/0022-3514.84.2.365

Fresco, D.M., Moore, M.T., van Dulmen, M., Segal, Z.V., Ma, S.H.,Teasdale, J.D., & Williams, J.M. G. (2007). Initial psychometric properties of the Experiences Questionnaire: Validation of a self-report measure of decentering. *Behavior Therapy*, *38*(3), 234–246. https://doi.org/10.1016/j.beth.2006.08.003

Freud, A. (2004). *Ego i mechanizmy obronne* [The Ego and the Mechanisms of Defense] (M. Ojrzyńska, Trans.). PWN. (Original work published 1936).

Freud, S. (1936). Inhibitions, symptoms and anxiety. In J. Strachey (Ed. and Trans.), *The standard edition of the complete psychological works of Sigmund Freud* (Vol. 20, pp. 77–175). Hogarth. (Original work published 1926)

Freud, S. (1996). *Objaśnianie marzeń sennych* [The Interpretation of Dreams] (R. Reszke, Trans.). Wydawnictwo KR. (Original work published 1899)

Freund, A.M., & Riediger, M. (2001). What I have and what I do–The role of resource loss and gain throughout life. *Applied Psychology: An International Review*, *50*(3), 370–380. https://doi.org/10.1111/1464-0597.00063

Frost, R.O., Heimberg, R.G., Holt, C.S., Mattia, J.I., & Neubauer, A.L. (1993). A comparison of two measures of perfectionism. *Personality and Individual Differences*, *14*(1), 119–126. https://doi.org/10.1016/0191-8869(93)90181-2

Frydenberg, E., & Lewis, R., (1993). *Adolescent Coping Scale: Administrator's Manual.* ACER.

Gan, Y., Hu, Y., & Zhang,Y. (2010). Proactive and preventive coping in adjustment to college. *Psychological Record*, *60*(4), 643–658. https://doi.org/10.1007/bf03395737

Garland, E.L., Hanley, A., Farb, N.A., & Froeliger, B. (2015). State mindfulness during meditation predicts enhanced cognitive reappraisal. *Mindfulness*, *6*(2), 234–242. https://doi.org/10.1007/s12671-013-0250-6

Gaudreau, P., Carraro, N., & Miranda, D. (2012). From goal motivation to goal progress: The mediating role of coping in the self-concordance model. *Anxiety, Stress & Coping: An International Journal*, *25*(5), 507–528. https://doi.org/10.1080/10615806.2011.628015

Gebhardt, W.A., & Brosschot, J.F. (2002). Desirability of control: Psychometric properties and relationships with locus of control, personality, coping, and mental and somatic complaints in three Dutch samples. *European Journal of Personality*, *16*(6), 423–438. https://doi.org/10.1002/per.463

Gecht, J., Kessel, R., Forkmann, T., Gauggel, S., Drueke, B., Scherer, A., & Mainz, V. (2014). A mediation model of mindfulness and decentering: sequential psychological constructs or one and the same? *BMC Psychology*, *2*(1), 1–13. https://doi.org/10.1186/2050-7283-2-18

Geyh, S., Nick, E., Stirnimann, D., Ehrat, S., Michel, F., Peter, C., & Lude, P. (2012). Self- efficacy and self-esteem as predictors of participation in spinal cord injury–an ICF- based study. *Spinal Cord*, *50*(9), 699–706. https://doi.org/10.1038/sc.2012.18

Gilman, R., Schumm, J.A., & Chard, K.M. (2012). Hope as a change mechanism in the treatment of posttraumatic stress disorder. *Psychological Trauma: Theory, Research, Practice, and Policy, 4*(3), 270–277. https://doi.org/10.1037/a0024252

Gloria, C.T., Faulk, K., & Steinhardt, M. (2013). Positive affectivity predicts successful and unsuccessful adaptation to stress. *Motivation and Emotion, 37*(1), 185–193. https://doi.org/10.1007/s11031-012-9291-8

Gloria, C.T., & Steinhardt, M.A. (2016). Relationships among positive emotions, coping, resilience and mental health. *Stress and Health, 32*(2), 145–156. https://doi.org/10.1002/smi.2589

Gol, A.R. (1994). *Coping theories and their underlying dimensions: a reevaluation using concept mapping* [Doctoral dissertation, Texas Tech University]. Texas Tech University Libraries. http://hdl.handle.net/2346/13172

Gol, A.R., & Cook, S.W. (2004). Exploring the underlying dimensions of coping: A concept mapping approach. *Journal of Social and Clinical Psychology, 23*(2), 155–171. https://doi.org/10.1521/jscp.23.2.155.31021

Goldberg, D., & Williams, P. (1988). *A user's guide to the General Health Questionnaire*. NFER-Nelson.

Gong, X., Fletcher, K.L., & Bolin, J.H. (2015). Dimensions of perfectionism mediate the relationship between parenting styles and coping. *Journal of Counseling & Development, 93*(3), 259–268. https://doi.org/10.1002/jcad.12024

Gotwals, J.K., Stoeber, J., Dunn, J.G. H., & Stoll, O. (2012). Are perfectionistic strivings in sport adaptive? A systematic review of confirmatory, contradictory, and mixed evidence. *Canadian Psychology/Psychologie canadienne, 53*(4), 263–279. https://doi.org/10.1037/a0030288

Graham, S.M., Huang, J.Y., Clark, M.S., & Helgeson, V.S. (2008). The positives of negative emotions: Willingness to express negative emotions promotes relationships. *Personality and Social Psychology Bulletin, 34*(3), 394–406. https://doi.org/10.1177/0146167207311281

Grassi, M., Luccio, R., & Di Blas, L. (2010). CircE: An R implementation of Browne's circular stochastic process model. *Behavior Research Methods, 42*(1), 55–73. https://doi.org/10.3758/brm.42.1.55

Greenglass, E., & Schwarzer, R. (1998). The Proactive Coping Inventory (PCI). In R. Schwarzer (Ed.), *Advances in health psychology research* (CD-ROM). Free University of Berlin.

Greenglass, E.R. (2002). Proactive coping and quality of life management. In E. Frydenberg (Ed.), *Beyond coping: Meeting goals, visions, and challenges* (pp. 37–62). Oxford University Press. https://doi.org/10.1093/med:psych/9780198508144.003.0003

Greenglass, E.R., & Fiksenbaum, L. (2009). Proactive coping, positive affect, and well-being: Testing for mediation using path analysis. *European Psychologist, 14*(1), 29–39. https://doi.org/10.1027/1016-9040.14.1.29

Greenglass, E., Schwarzer, R., Jakubiec, D., Fiksenbaum, L., & Taubert, S. (1999). *The Proactive Coping Inventory (PCI): A multidimensional research instrument*. http://estherg.info.yorku.ca/files/2014/09/pci.pdf

Grinker, R.P., & Spiegel, J.P. (1945). *Men under stress*. Blakiston. https://doi.org/10.1037/10784-000

Gross, J.J., & John, O.P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology, 85*(2), 348–362. https://doi.org/10.1037/0022-3514.85.2.348

Gruszczyńska, E. (2013). State affect and emotion-focused coping: Examining correlated change and causality. *Anxiety, Stress & Coping: An International Journal, 26*(1), 103–119. https://doi.org/10.1080/10615806.2011.633601

Gudjonsson, G.H., & Sigurdsson, J.F. (2003). The relationship of compliance with coping strategies and self-esteem. *European Journal of Psychological Assessment, 19*(2), 117–123. https://doi.org/10.1027//1015-5759.19.2.117

Gurtman, M.B. (1991). Evaluating the interpersonalness of personality scales. *Personality and Social Psychology Bulletin*, *17*(6), 670–677. https://doi.org/10.1177/0146167291176010

Gurtman, M.B. (1992). Construct validity of interpersonal personality measures: The interpersonal circumplex as a nomological net. *Journal of Personality and Social Psychology*, *63*(1), 105–118. https://doi.org/10.1037/0022-3514.63.1.105

Gurtman, M.B. (1994). The circumplex as a tool for studying normal and abnormal personality: A methodological primer. In S. Strack & M. Lorr (Eds.), *Differentiating normal and abnormal personality* (pp. 243–263). Springer Publishing Company.

Gurtman, M.B., & Pincus, A.L. (2003). The circumplex model: Methods and research applications. In J.A. Schinka & W.F. Velicer (Eds.), *Handbook of psychology: Research methods in psychology* (Vol. 2, pp. 407–428). John Wiley & Sons Inc.

Gustafson, W.I., & Shaocai, Y. (2012). Generalized Approach for Using Unbiased Symmetric Metrics with Negative Values: Normalized Mean Bias Factor and Normalized Mean Absolute Error Factor. *Atmospheric Science Letter*, *13*(4), 262–267. https://doi.org/10.1002/asl.393

Guttman, L. (1954). A new approach to factor analysis: the Radex. In P.F. Lazarsfeld (Ed.), *Mathematical thinking in the social sciences* (pp. 258–348). Free Press.

Haan, N. (1963). Proposed model of ego functioning: Coping and defense mechanisms in relationship to IQ change. *Psychological Monographs: General and Applied*, *77*(8), 1–23. https://doi.org/10.1037/h0093848

Halbesleben, J.R. B., Neveu, J.P., Paustian-Underdahl, S.C., & Westman, M. (2014). Getting to the "COR". Understanding the role of resources in conservation of resources theory. *Journal of Management*, *40*(5), 1334–1364. https://doi.org/10.1177/0149206314527130

Hardin, E.E., & Larsen, J.T. (2014). Distinct sources of self-discrepancies: Effects of being who you want to be and wanting to be who you are on well-being. *Emotion*, *14*(1), 214–226. https://doi.org/10.1037/a0033893

Hardy, D.F., Power, T.G., & Jaedicke, S. (1993). Examining the relation of parenting to children's coping with everyday stress. *Child Development*, *64*(6), 1829–1841. https://doi.org/10.2307/1131472

Harper, K.T. (2012). *Emotional expression and coping style in predicting well-being after traumatic brain injury* [Doctoral dissertation, Wayne State University]. Wayne State University Dissertations. https://digitalcommons.wayne.edu/oa_dissertations/542/

Harris, A.H. S. (2006). Does expressive writing reduce health care utilization? A meta analysis of randomized trials. *Journal of Consulting and Clinical Psychology*, *74*(2), 243–252. https://doi.org/10.1037/0022-006X.74.2.243

Hastings, R.P., Kovshoff, H., Brown, T., Ward, N.J., Espinosa, F.D., & Remington, B. (2005). Coping strategies in mothers and fathers of preschool and school-age children with autism. *Autism*, *9*(4), 377–391. https://doi.org/10.1177/1362361305056078

Hayes, A.F. (2007). *Macro for SPSS and SAS for estimating OLS regression models with heteroscedasticity-consistent standard errors* [Computer software]. http://afhayes.com/spss-sas-and-r-macros-and-code.html

Hayes, A.F., & Cai, L. (2007). Using heteroscedasticity-consistent standard error estimators in OLS regression: An introduction and software implementation. *Behavior Research Methods*, *39*(4), 709–722. https://doi.org/10.3758/bf03192961

Hayes-Skelton, S., & Graham, J. (2013). Decentering as a common link among mindfulness, cognitive reappraisal, and social anxiety. *Behavioural and Cognitive Psychotherapy*, *41*(3), 317–328. https://doi.org/10.1017/s1352465812000902

Haynes, S.G., Levine, S., Scotch, N., Feinleib, M., & Kannel, W.B. (1978). The relationship of psychosocial factors to coronary heart disease in the Framingham Study: methods and risk-factors. *American Journal of Epidemiology*, *107*(5), 362–383. https://doi.org/10.1093/oxfordjournals.aje.a112556

Heller, W. (1990). The neuropsychology of emotion: Developmental patterns and implications for psychopathology. In N.L. Stein, B. Leventhal, & T. Trabasso (Eds.), *Psychological and biological approaches to emotion* (pp. 167–211). Lawrence Erlbaum Associates, Inc.

Herman-Stahl, M.A., Stemmler, M., & Petersen, A.C. (1995). Approach and avoidant coping: Implications for adolescent mental health. *Journal of Youth and Adolescence, 24*(6), 649–665. https://doi.org/10.1007/BF01536949

Hertel, G., Rauschenbach, C., Thielgen, M.M., & Krumm, S. (2015). Are older workers more active copers? Longitudinal effects of age–contingent coping on strain at work. *Journal of Organizational Behavior, 36*(4), 514–537. https://doi.org/10.1002/job.1995

Heszen, I. (2011). Changes of coping activity in patients suffering from illnesses with different courses. In K. Janowski & S. Steuden (Eds.), *The multidisciplinary approach to health and disease* (pp. 74–85). CPPP Scientific Press.

Heszen, I. (2013). *Psychologia stresu. Korzystne i niekorzystne skutki stresu życiowego* [The psychology of stress. Beneficial and adverse effects of life stress]. PWN.

Heszen-Niejodek, I. (1997). Coping Style and Its Role in Coping with Stressful Encounters. *European Psychologist, 2*(4), 342–351. https://doi.org/10.1027/1016-9040.2.4.342

Heszen-Niejodek, I. (2005). Teoria stresu psychologicznego i radzenia sobie [The theory of psychological stress and coping]. In J. Strelau (Ed.), *Psychologia. Podręcznik akademicki. Jednostka w społeczeństwie i elementy psychologii stosowanej* [Psychology. An academic handbook. An individual in society and the elements of applied psychology] (pp. 465–492). Gdańskie Wydawnictwo Psychologiczne.

Hill, A.P., & Curran, T. (2016). Multidimensional perfectionism and burnout: A meta-analysis. *Personality and Social Psychology Review, 20*(3), 269–288. https://doi.org/10.1177/1088868315596286

Ho, S., Rajandram, R.K., Chan, N., Samman, N., McGrath, C., & Zwahlen, R.A. (2011). The roles of hope and optimism on posttraumatic growth in oral cavity cancer patients. *Oral Oncology, 47*(2), 121–124. https://doi.org/10.1016/j.oraloncology.2010.11.015

Hobfoll, S.E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist, 44*(3), 513–524. https://doi.org/10.1037/0003-066X.44.3.513

Hobfoll, S.E. (2001). The influence of culture, community, and the nested-self in the stress process: Advancing Conservation of Resources theory. *Applied Psychology: An International Review, 50*(3), 337–370. https://doi.org/10.1111/1464-0597.00062

Hobfoll, S.E., & Lilly, R.S. (1993). Resource conservation as a strategy for community psychology. *Journal of Community Psychology, 21*(2), 128–148. https://doi.org/10.1002/1520-6629(199304)21:2<128::AID-JCOP2290210206>3.0.CO;2-5

Hofstee, W.K. B., de Raad, B., & Goldberg, L.R. (1992). Integration of the Big Five and circumplex approaches to trait structure. *Journal of Personality and Social Psychology, 63(1)*, 146–163. https://doi.org/10.1037/0022-3514.63.1.146

Holland, J.L. (1997). *Making vocational choices: A theory of vocational personalities and work environments* (3rd ed.). Psychological Assessment Resources.

Holmes, T.H., & Rahe, R.H. (1967). The Social Readjustment Rating Scale. *Journal of Psychosomatic Research, 11*(2), 213–218. https://doi.org/10.1016/0022-3999(67)90010-4

Holtforth, M.G., Pincus, A.L., Grawe, K., Mauler, B., & Castonguay, L.G. (2007). When what you want is not what you get: Motivational correlates of interpersonal problems in clinical and nonclinical samples. *Journal of Social and Clinical Psychology, 26*(10), 1095–1119. https://doi.org/10.1521/jscp.2007.26.10.1095

Holzel, B.K., Lazar, S.W., Gard, T., Schuman-Olivier, Z., Vago, D.R., & Ott, U. (2011). How does mindfulness meditation work? Proposing mechanisms of action from a conceptual and neural perspective. *Perspectives on Psychological Science, 6*(6), 537–559. https://doi.org/10.1177/1745691611419671

Houston, B.K., Smith, T.W., & Zurawski, R.M. (1986). Principal dimensions of the Framingham Type A scale: Differential relationships to cardiovascular reactivity and anxiety. *Journal of Human Stress*, *12*(3), 105–112.

Howerton, A., & Van Gundy, K. (2009). Sex differences in coping styles and implications for depressed mood. *International Journal of Stress Management*, *16*(4), 333–350. https://doi.org/10.1037/a0016843

Hu, T., Zhang, D., & Wang, J. (2015). A meta-analysis of the trait resilience and mental health. *Personality and Individual Differences*, *76*, 18–27. https://doi.org/10.1016/j.paid.2014.11.039

Hubert, L., & Arabie, P. (1987). Evaluating order hypotheses within proximity matrices. *Psychological Bulletin*, *102*(1), 172–178. https://doi.org/10.1037/0033-2909.102.1.172

James, W. (1890). *Principles of psychology*. http://psychclassics.yorku.ca/James/Principles/index.htm/

Janis, I.L. (1958/2016). *Psychological Stress: Psychoanalytic and Behavioral Studies of Surgical Patients*. Academic Press.

Janssen, P., & Heuberger, P., (1995). Calibration of process-oriented models. *Ecological Modelling*, *83*(1-2), 55–66. https://doi.org/10.1016/0304-3800(95)00084-9

Jarvis, M. (2004). *Psychodynamic Psychology: Classical theory and contemporary research*. Thomson Learning.

Johnson, D.P., & Whisman, M.A. (2013). Gender differences in rumination: A meta-analysis. *Personality and Individual Differences*, *55*(4), 367–374. https://doi.org/10.1016/j.paid.2013.03.019

Jonason, P.K., Talbot, D., Cunningham, M.L., & Chonody, J. (2020). Higher-order coping strategies: Who uses them and what outcomes are linked to them. *Personality and Individual Differences*, *155*, Article 109755. https://doi.org/10.1016/j.paid.2019.109755

Jordan, C., & Revenson, T.A. (1999). Gender differences in coping with infertility: A meta-analysis. *Journal of Behavioral Medicine*, *22*(4), 341–358. https://doi.org/10.1023/a:1018774019232

Juczyński, Z. (2012). *Narzędzia pomiaru w promocji i psychologii zdrowia* [Assessment and diagnostic instruments for health psychology promotion]. Pracownia Testów Psychologicznych PTP.

Juczyński, Z., & Ogińska-Bulik, N. (2009). *Narzędzia pomiaru stresu i radzenia sobie ze stresem* [Tools for measuring stress & for coping with stress]. Pracownia Testów Psychologicznych PTP.

Kabat-Zinn, J. (1994). *Wherever you go, there you are: Mindfulness meditation in everyday life*. Hyperion.

Kaczmarek, Ł., Sęk, H. & Ziarko, M. (2011). Sprężystość psychiczna i zmienne pośredniczące w jej wpływie na zdrowie [Ego Resiliency and the mediators of its effect on health]. *Przegląd Psychologiczny*, *54*, 29–46.

Kallasmaa, T., & Pulver, A. (2000). The structure and properties of the Estonian COPE inventory. *Personality and Individual Differences*, *29*(5), 881–894. https://doi.org/10.1016/S0191-8869(99)00240-8

Kashdan, T.B., Volkmann, J.R., Breen, W.E., & Han, S. (2007). Social anxiety and romantic relationships: The costs and benefits of negative emotion expression are context-dependent. *Journal of Anxiety Disorders*, *21*(4), 475–492. https://doi.org/10.1016/j.janxdis.2006.08.007

Kato, T. (2015). Frequently used coping scales: A meta-analysis. *Stress & Health*, *31*(4), 315–323. https://doi.org/10.1002/smi.2557

Kelly, M.M., Tyrka, A.R., Price, L.H., & Carpenter, L.L. (2008). Sex differences in the use of coping strategies: Predictors of anxiety and depressive symptoms. *Depression and Anxiety*, *25*(10), 839–846. https://doi.org/10.1002/da.20341

Keng, S.L., Smoski, M.J., & Robins, C.J. (2011). Effects of mindfulness on psychological health: A review of empirical studies. *Clinical Psychology Review*, *31*(6), 1041–1056. https://doi.org/10.1016/j.cpr.2011.04.006

Kenny, D.A., Kaniskan, B., & McCoach, D.B. (2015). The performance of RMSEA in models with small degrees of freedom. *Sociological Methods & Research*, *44*(3), 486–507. https://doi.org/10.1177/0049124114543236

Kiesler, D.J., Schmidt, J.A., & Wagner, C.C. (1997). A circumplex inventory of impact messages: An operational bridge between emotion and interpersonal behavior. In R. Plutchik & H.R. Conte (Eds.), *Circumplex models of personality and emotions* (pp. 221–244). American Psychological Association. https://doi.org/10.1037/10261-010

Kivimäki, M., Virtanen, M., Elovainio, M., Kouvonen, A., Vaananen, A., & Vahtera, J. (2006). Work stress in the etiology of coronary heart disease – a meta-analysis. *Scandinavian Journal of Work, Environment, and Health*, *32*(6), 431–442. https://doi.org/10.5271/sjweh.1049

Klimecki, O., Leiberg, S., Lamm, C., & Singer, T. (2013). Functional neural plasticity and associated changes in positive affect after compassion training. *Cerebral Cortex*, *23*(7), 1552–1561. https://doi.org/10.1093/cercor/bhs142

Knoll, N., Rieckmann, N., & Schwarzer, R. (2005). Coping as a mediator between personality and stress outcomes: A longitudinal study with cataract surgery patients. *European Journal of Personality*, *19*(3), 229–247. https://doi.org/10.1002/per.546

Koch, A.S., Forgas, J.P., & Matovic, D. (2013). Can negative mood improve your concentration? Affective influences on conforming to Grice's communication norms. *European Journal of Social Psychology*, *43*(5), 326–334. https://doi.org/10.1002/ejsp.1950

Kohls, N., Sauer, S., & Walach, H. (2009). Facets of mindfulness–Results of an online study investigating the Freiburg mindfulness inventory. *Personality and Individual Differences*, *46*(2), 224–230. https://doi.org/10.1016/j.paid.2008.10.009

Koole, S.L., Kuhl, J., Jostmann, N., & Vohs, K.D. (2005). On the hidden benefits of state orientation: Can people prosper without efficient affect regulation skills? In A. Tesser, J. Wood & D.A. Stapel (Eds.), *On building, defending, and regulating the self: A psychological perspective* (pp. 217–243). Taylor & Francis. https://doi.org/10.4324/9780203998052-13

Kozak, B., Strelau, J., & Miles, J.N. V. (2005). Genetic determinants of individual differences in coping styles. *Anxiety, Stress & Coping: An International Journal*, *18*(1), 1–15. https://doi.org/10.1080/10615800500040844

Kraaij, V., Garnefski, N., & Schroevers, M.J. (2009). Coping, goal adjustment, and positive and negative affect in definitive infertility. *Journal of Health Psychology*, *14*(1), 18–26. https://doi.org/10.1177/1359105308097939

Krohne, H.W. (1986). Coping with stress: Dispositions, strategies, and the problem of measurement. In M.H. Appley & R. Trumbull (Eds.), *Dynamics of stress: Physiological, psychological, and social perspectives* (pp. 207–232). Plenum Press.

Kruskal, J.B. (1964). Multidimensional scaling by optimizing goodness of fit to a nonmetric hypothesis. *Psychometrika*, *29*(1), 1–27. https://doi.org/10.1007/BF02289565

Kruskal, J.B., & Wish, M. (1978). *Multidimensional scaling*. Sage Publications, Inc.

Kuhl, J. (1981). Motivational and functional helplessness: The moderating effect of state versus action orientation. *Journal of Personality and Social Psychology*, *40*(1), 155–170. https://doi.org/10.1037/0022-3514.40.1.155

Kuhl, J. (1992). A theory of self-regulation: Action versus state orientation, self-discrimination, and some applications. *Applied Psychology: An International Review*, *41*(2), 97–129. https://doi.org/10.1111/j.1464-0597.1992.tb00688.x

Kuhl, J. (2000). A functional-design approach to motivation and self-regulation: The dynamics of personality systems interactions. In M. Boekaerts, P.R. Pintrich & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 111–169). Academic Press. https://doi.org/10.1016/b978-012109890-2/50034-2

Kuhl, J., & Baumann, N. (2000). Self-regulation and rumination: Negative affect and impaired self-accessibility. In W.J. Perrig & A. Grob (Eds.), *Control of human behavior, mental processes, and consciousness: Essays in honor of the 60th birthday of August Flammer* (pp. 283–305). Lawrence Erlbaum Associates, Inc.

Kuiper, N.A., & Martin, R.A. (1993). Humor and self-concept. *Humor: International Journal of Humor Research, 6*(3), 251–270. https://doi.org/10.1515/humr.1993.6.3.251

Kuiper, N.A., Martin, R.A., & Olinger, L.J. (1993). Coping humour, stress, and cognitive appraisals. *Canadian Journal of Behavioural Science / Revue canadienne des sciences du comportement, 25*(1), 81–96. https://doi.org/10.1037/h0078791

Kuiper, N.A., McKenzie, S.D., & Belanger, K.A. (1995). Cognitive appraisals and individual differences in sense of humor: Motivational and affective implications. *Personality and Individual Differences, 19*(3), 359–372. https://doi.org/10.1016/0191-8869(95)00072-E

Kvillemo, P., & Bränström, R. (2014). Coping with breast cancer: A meta-analysis. *PLOS ONE, 9*(11), 1–26. https://doi.org/10.1371/journal.pone.0112733

Larsen, R.J., & Diener, E. (1992). Promises and problems with the circumplex model of emotion. In M.S. Clark (Ed.), *Emotion* (pp. 25–59). Sage Publications, Inc.

Latack, J.C., & Havlovic, S.J. (1992). Coping with job stress: A conceptual evaluation framework for coping measures. *Journal of Organizational Behavior, 13*(5), 479–508. https://doi.org/10.1002/job.4030130505

Lazarus, R.S. (1966). *Psychological stress and the coping process.* McGraw-Hill.

Lazarus, R.S. (1993). From psychological stress to the emotions: A history of a changing outlook. *Annual Review of Psychology, 44*(1), 1–22. https://doi.org/10.1146/annurev.ps.44.020193.000245

Lazarus, R.S. (1996). The role of coping in the emotions and how coping changes over the life course. In C. Magai & S.H. McFadden (Eds.), *Handbook of emotion, adult development, and aging* (pp. 289–306). Academic Press. https://doi.org/10.1016/B978-012464995-8/50017-0

Lazarus, R.S. (1998). The stress and coping paradigm. In R.S. Lazarus (Ed.), *Fifty years of the research and theory of R.S. Lazarus: An analysis of the historical and perennial issues* (pp. 182–222). Lawrence Erlbaum Associates, Inc.

Lazarus, R.S. (2000). Toward better research on stress and coping. *American Psychologist, 55*(6), 665–673. https://doi.org/10.1037/0003-066x.55.6.665

Lazarus, R.S. (2001). Conservation of Resources theory (COR): Little more than words masquerading as a new theory. *Applied Psychology: An International Review, 50*(3), 381–391.

Lazarus, R.S., & Alfert, E. (1964). Short-circuiting of threat by experimentally altering cognitive appraisal. *The Journal of Abnormal and Social Psychology, 69*(2), 195–205. https://doi.org/10.1037/h0044635

Lazarus, R.S., DeLongis, A., Folkman, S., & Gruen, R. (1985). Stress and adaptational outcomes: The problem of confounded measures. *American Psychologist, 40*(7), 770–779. https://doi.org/10.1037/0003-066X.40.7.770

Lazarus, R.S., & Folkman, S. (1984). *Stress, appraisal, and coping.* Springer Publishing Company.

Lazarus, R.S., & Folkman, S. (1987). Transactional theory and research on emotions and coping. *European Journal of Personality, 1*(3, Spec Issue), 141–169. https://doi.org/10.1002/per.2410010304

Lazarus, R.S., Kanner, A.D., & Folkman, S. (1980). Emotions: A cognitive-phenomenological analysis. In R. Plutchik & H. Kellerman (Eds.), *Emotion: Theory, research, and experience* (pp. 189–217). Academic Press. https://doi.org/10.1016/b978-0-12-558701-3.50014-4

Lazarus, R.S., & Smith, C.A. (1988). Knowledge and appraisal in the cognition€motion relationship. *Cognition and Emotion, 2*(4), 281–300. https://doi.org/10.1080/02699938808412701

Leandro, P.G., & Castillo, M.D. (2010). Coping with stress and its relationship with personality dimensions, anxiety, and depression. *Journal of Procedia Social and Behavioral Sciences, 5*, 1562–573. https://doi.org/10.1016/j.sbspro.2010.07.326

Leary, T. (1957). *Interpersonal diagnosis of personality*. Ronald Press.

Ledermann, T., Bodenmann, G., Gagliardi, S., Charvoz, L., Verardi, S., Rossier, J., Bertoni, A., & Iafrate, R. (2010). Psychometrics of the Dyadic Coping Inventory in three language groups. *Swiss Journal of Psychology, 69*(4), 201–212. https://doi.org/10.1024/1421-0185/a000024

Lee, C., Ashford, S.J., & Jamieson, L.F. (1993). The effects of Type A behavior dimensions and optimism on coping strategy, health, and performance. *Journal of Organizational Behavior, 14*(2), 143–157. https://doi.org/10.1002/job.4030140205

Lengua, L.J., & Stormshak, E.A. (2000). Gender, gender roles and personality: Gender differences in the prediction of coping and psychological symptoms. *Sex Roles: A Journal of Research, 43*(11–12), 787–820. https://doi.org/10.1023/A:1011096604861

Leventhal, E.A., Suls, J., & Leventhal, H. (1993). Hierarchical analysis of coping: Evidence from lifespan studies. In H.W. Krohne (Ed.), *Attention and avoidance: Strategies in coping with aversiveness* (pp. 71–99). Hogrefe & Huber Publishers.

Li, C., DiGiuseppe, R., & Froh, J. (2006). The roles of sex, gender, and coping in adolescent depression. *Adolescence, 41*(163), 409–415.

Li, R., Cooper, C., Bradley, J., Shulman, A., & Livingston, G. (2012). Coping strategies and psychological morbidity in family careers of people with dementia: A systematic review and meta-analysis. *Journal of Affective Disorders, 139*(1), 1–11. https://doi.org/10.1016/j.jad.2011.05.055

Linley, P.A., & Joseph, S. (2004). Positive change following trauma and trauma: A review. *Journal of Traumatic Stress, 17*(1), 11–21. https://doi.org/10.1023/b:jots.0000014671.27856.7e

Litman, J.A. (2006). The COPE inventory: Dimensionality and relationships with approach and avoidance-motives and positive and negative traits. *Personality and Individual Differences, 41*(2), 273–284. https://doi.org/10.1016/j.paid.2005.11.032

Litman, J.A., & Lunsford, G. (2009). Frequency of use and impact of coping strategies assessed by the COPE inventory and their relationships to post-event health and well- being. *Journal of Health Psychology, 14*(7), 982–991. https://doi.org/10.1177/1359105309341207

Littleton, H.L., Horsley, S., John, S., & Nelson, D.V. (2007). Trauma coping strategies and psychological distress: A meta-analysis. *Journal of Traumatic Stress, 20*(6), 977–988. https://doi.org/10.1002/jts.20276

Litwic-Kaminska, K., & Izdebski, P. (2016). Resiliency against stress among athletes. *Health Psychology Report, 4*(1), 79–90.

Liverant, G.I., Hofmann, S.G., & Litz, B.T. (2004). Coping and anxiety in college students after the September 11th terrorist attacks. *Anxiety, Stress & Coping: An International Journal, 17*(2), 127–139. https://doi.org/10.1080/0003379042000221412

Livneh, H., Antonak, R.F., & Gerhardt, J. (2000). Multidimensional investigation of the structure of coping among people with amputations. *Psychosomatics: Journal of Consultation and Liaison Psychiatry, 41*(3), 235–244. https://doi.org/10.1176/appi.psy.41.3.235

Locke, K.D. (2000). Circumplex scales of interpersonal values: Reliability, validity, and applicability to interpersonal problems and personality disorders. *Journal of Personality Assessment, 75*(2), 249–267. https://doi.org/10.1207/S15327752JPA7502_6

Locke, K.D., & Sadler, P. (2007). Self-efficacy, values, and complementarity in dyadic interactions: Integrating interpersonal and social-cognitive theory. *Personality and Social Psychology Bulletin, 33*(1), 94–109. https://doi.org/10.1177/0146167206293375

Longe, O., Maratos, F., Gilbert, P., Evans, G., Volker, F., Rockliff, H., & Rippon, G. (2010). Having a word with yourself: Neural correlates of self-criticism and self-reassurance. *NeuroImage*, *49*(2), 1849–1856. https://doi.org/10.1016/j.neuroimage.2009.09.019

Low, C.A., Stanton, A.L., & Bower, J.E. (2008). Effects of acceptance-oriented versus evaluative emotional processing on heart rate recovery and habituation. *Emotion*, *8*(3), 419–424 https://doi.org/10.1037/1528-3542.8.3.419

Lowery, B.J., Jacobsen, B.S., & DuCette, J. (1993). Causal attribution, control, and adjustment to breast cancer. *Journal of Psychosocial Oncology*, *10*(4), 37–53. https://doi.org/10.1300/J077V10N04_03

Lu, L., Kao, S.F., Siu, O.L., & Lu, C.Q. (2010). Work stressors, Chinese coping strategies, and job performance in the greater China. *International Journal of Psychology*, *45*(4), 294–302. https://doi.org/10.1080/00207591003682027

Luo, X., Wang, Q., Wang, X., & Cai, T. (2016). Reasons for living and hope as the protective factors against suicidality in Chinese patients with depression: A cross sectional study. *BMC Psychiatry*, *16*, Article 252. https://doi.org/10.1186/s12888-016-0960-0

Lyne, K., & Roger, D. (2000). A psychometric re-assessment of the COPE questionnaire. *Personality and Individual Differences*, *29*(2), 321–335. https://doi.org/10.1016/S0191-8869(99)00196-8

Lyons, R.F., Mickelson, K.D., Sullivan, M.J., & Coyne, J.C. (1998). Coping as a communal process. *Journal of Social and Personal Relationships*, *15*(5), 579–605. https://doi.org/10.1177/0265407598155001

Lysaker, P.H., Campbell, K., & Johannesen, J.K. (2005). Hope, awareness of illness, and coping in schizophrenia spectrum disorders: evidence of an interaction. *Journal of Nervous and Mental Disease*, *193*(5), 287–292. https://doi.org/10.1097/01.nmd.0000161689.96931.0f

Łaguna, M., Lachowicz-Tabaczek, K., & Dzwonkowska, I. (2007). Skala samooceny SES Morrisa Rosenberga – polska adaptacja metody [The Rosenberg Self-Esteem Scale: Polish adaptation of the scale]. *Psychologia Społeczna*, *2*(4), 164–176.

Łaguna, M., Trzebiński, J., & Zięba, M. (2005). *KNS – Kwestionariusz Nadziei na Sukces* [Hope for success questionnaire]. Pracownia Testów Psychologicznych PTP.

Łuszczynska, A., Mohamed, N.E., & Schwarzer, R. (2005). Self-efficacy and social support predict benefit finding 12 months after cancer surgery: The mediating role of coping strategies. *Psychology, Health & Medicine*, *10*(4), 365–375. https://doi.org/10.1080/13548500500093738

Maercker, A., & Zoellner, T. (2004). The Janus face of self-perceived growth: Toward a two component model of posttraumatic growth. *Psychological Inquiry*, *15*(1), 41–48. https://www.jstor.org/stable/20447200

Mak, W.W., Ng, I.S., & Wong, C.C. (2011). Resilience: Enhancing well-being through the positive cognitive triad. *Journal of Counseling Psychology*, *58*(4), 610–617. https://doi.org/10.1037/a0025195

Makowska, Z., & Merecz, D. (2001). *Ocena zdrowia psychicznego na podstawie badań Kwestionariuszami Davida Goldberga. Podręcznik dla użytkowników kwestionariuszy GHQ-12 i GHQ-28* [The assessment of mental health on the basis of questionnaire research by David Goldberg. A handbook for the users of the GHQ-12 and GHQ-28 questionnaires]. Instytut Medycyny Pracy im. Prof. J. Nofera.

Malamut, A.B., & Offermann, L.R. (2001). Coping with sexual harassment: Personal, environmental, and cognitive determinants. *Journal of Applied Psychology*, *86*(6), 1152–1166. https://doi.org/10.1037/0021-9010.86.6.1152

Malloy, K.M., & Milling, L.S. (2010). The effectiveness of virtual reality distraction for pain reduction: A systematic review. *Clinical Psychology Review*, *30*(8), 1011–1018. https://doi.org/10.1016/j.cpr.2010.07.001

Maltby, J., & Day, L. (2000). The reliability and validity of a susceptibility to embarrassment scale among adults. *Personality and Individual Differences, 29*(4), 749–756. https://doi.org/10.1016/S0191-8869(99)00229-9

Mantzios, M., Wilson, J.C., & Giannou, K. (2015). Psychometric properties of the Greek versions of the Self-Compassion and Mindful Attention and Awareness Scales. *Mindfulness, 6*(1), 123–132. https://doi.org/10.1007/s12671-013-0237-3

Markey, P.M., & Markey, C.N. (2009). A brief assessment of the interpersonal circumplex. *Assessment, 16*, 352–361. https://doi.org/10.1177/1073191109340382

Marsland, A.L., Pressman, S., & Cohen, S. (2007). Positive affect and immune function. In R. Ader (Ed.), *Psychoneuroimmunology* (4th ed., Vol. 2, pp. 761–779). Academic Press. https://doi.org/10.1016/b978-012088576-3/50042-3

Marsh, H.W., Hau, K.-T., & Wen, Z. (2004). In search of golden rules: Comment on hypothesis testing approaches to setting cut off values for fit indexes and dangers in overgeneralizing Hu and Bentler's (1999) findings. *Structural Equation Modeling, 11*(3), 320–341. https://doi.org/10.1207/s15328007sem1103_2

Martin, J.R. (1997). Mindfulness: A proposed common factor. *Journal of Psychotherapy Integration, 7*(4), 291–312. https://doi.org/10.1023/B:JOPI.0000010885.18025.bc

Martin, R.A., & Lefcourt, H.M. (1983). Sense of humor as a moderator of the relation between stressors and moods. *Journal of Personality and Social Psychology, 45*(6), 1313–1324. https://doi.org/10.1037/0022-3514.45.6.1313

Matthews, G., Campbell, S., & Falconer, S. (2001) Assessment of motivational states inperformance environments. *Proceedings of the Human Factors and Ergonomics Society, 45*(13), 906–910. https://doi.org/10.1177/154193120104501302

Matud, M.P. (2004). Gender differences in stress and coping styles. *Personality and Individual Differences, 37*(7), 1401–1415. https://doi.org/10.1016/j.paid.2004.01.010

McGlashan, T.H., Levy, S.T., & Carpenter, W.T. (1975). Integration and sealing over: Clinically distinct recovery styles from schizophrenia. *Archives of General Psychiatry, 32*(10), 1269–1272. https://doi.org/10.1001/archpsyc.1975.01760280067006

McWilliams, L.A., Cox, B.J., & Enns, M.W. (2003). Use of the Coping Inventory for Stressful Situations in a clinically depressed sample: Factor structure, personality correlates, and prediction of distress. *Journal of Clinical Psychology, 59*(4), 423–437. https://doi.org/10.1002/jclp.10080

Mechanic, D., & Volkart, E.H. (1961). Stress, illness behavior, and the sick role. *American Sociological Review, 26*, 51–58. https://doi.org/10.2307/2090512

Meissner, W.W. (1981). *Internalization in psychoanalysis.* International Universities Press.

Merrill, J.E., & Thomas, S.E. (2013). Interactions between adaptive coping and drinking to cope in predicting naturalistic drinking and drinking following a lab-based psychosocial stressor. *Addictive Behaviors, 38*(3), 1672–1678. https://doi.org/10.1016/j.addbeh.2012.10.003

Messer, D., Horan, J.J., Turner, W., & Weber, W. (2016). The Effects of internet-delivered mindfulness training on stress, coping, and mindfulness in university students. *AERA Open, 2*(1), 1–8. https://doi.org/10.1177/2332858415625188

Miller, S.M. (1987). Monitoring and blunting: Validation of a questionnaire to assess styles of information-seeking under threat. *Journal of Personality and Social Psychology, 52*(2), 345–353. https://doi.org/10.1037/0022-3514.52.2.345

Mischel, W. (1968). *Personality and assessment.* John Wiley & Sons Inc.

Mishel, M.H., & Sorenson, D.S. (1993). Revision of the Ways of Coping Checklist for a clinical population. *Western Journal of Nursing Research, 15*(1), 59–74. https://doi.org/10.1177/019394599301500105

Mohr, D.C., Kart, S.L., Julian, L., Cox, D., & Pelletier, D. (2004). Association between stressful life events and exacerbation in multiple sclerosis: A meta-analysis. *British Medical Journal, 328*(7442), 1–5. https://doi.org/10.1136/bmj.38041.724421.55

Moore, B., Biegel, D., & McMahon, T. (2011). Maladaptive coping as a mediator of family stress. *Journal of Social Work Practice in the Addictions, 11*(1), 17–39. https://doi.org/10.1080/1533256x.2011.544600

Mor, N., & Winquist, J. (2002). Self-focused attention and negative affect: A meta-analysis. *Psychological Bulletin, 128*(4), 638–662. https://doi.org/10.1037/0033-2909.128.4.638

Morling, B., & Evered, S. (2006). Secondary control reviewed and defined. *Psychological Bulletin, 132*(2), 269–296. https://doi.org/10.1037/0033-2909.132.2.269

Muris, P., & Petrocchi, N. (2017). Protection or vulnerability? A meta-analysis of the relations between the positive and negative components of self-compassion and psychopathology. *Clinical Psychology & Psychotherapy, 24*(2), 373–383. https://doi.org/10.1002/cpp.2005

Myers, A., & Rosen, J.C. (1999). Obesity stigmatization and coping: Relation to mental health symptoms, body image, and self-esteem. *International Journal of Obesity, 23*(3), 221–230. https://doi.org/10.1038/sj.ijo.0800765

Naragon-Gainey, K., & DeMarree, K.G. (2017). Structure and validity of measures of decentering and defusion. *Psychological Assessment, 29*(7), 935–954. https://doi.org/10.1037/pas0000405

Neff, K.D. (2003). The development and validation of a scale to measure self-compassion. *Self and Identity, 2*(3), 223–250. https://doi.org/10.1080/15298860309027

Neff, K.D., Hsieh, Y.-P., & Dejitterat, K. (2005). Self-compassion, Achievement Goals, and Coping with Academic Failure. *Self and Identity, 4*(3), 263–287. https://doi.org/10.1080/13576500444000317

Neff, K.D., Rude, S.S., & Kirkpatrick, K.L. (2007). An examination of self-compassion in relation to positive psychological functioning and personality traits. *Journal of Research in Personality, 41*(4), 908–916. https://doi.org/10.1016/j.jrp.2006.08.002

Nicholls, A.R., & Polman, R.C. J. (2007). Coping in sport: A systematic review. *Journal of Sport Sciences, 25*(1), 11–31.https://doi.org/10.1080/02640410600630654

Nielsen, M.B., & Knardahl, S. (2014). Coping strategies: a prospective study of patterns, stability, and relationships with psychological distress. *Scandinavian Journal of Psychology, 55*(2), 142–150. https://doi.org/10.1111/sjop.12103

Nieśpiałowski, A., & Terelak, J.F. (2016). Obesity related self-esteem and relationship to coping stress. *Polish Journal of Aviation Medicine, Bioengineering and Psychology, 22*(2), 18–26. https://doi.org/10.13174/pjambp.31.12.2016.02

O'Connor, B.P. (2000). SPSS and SAS programs for determining the number of components using parallel analysis and Velicer's MAP test. *Behavior Research Methods, Instruments, & Computers, 32*(3), 396–402. https://doi.org/10.3758/bf03200807

O'Connor, R.C., & Noyce, R. (2008). Personality and cognitive processes: Self-criticism and different types of rumination as predictors of suicidal ideation. *Behaviour Research and Therapy, 46*(3), 392–401. https://doi.org/10.1016/j.brat.2008.01.007

O'Connor, R.C., & O'Connor, D.B. (2003). Predicting hopelessness and psychological distress: The role of perfectionism and coping. *Journal of Counseling Psychology, 50*(3), 362–372. https://doi.org/10.1037/0022-0167.50.3.362

Ochsner, K.N., Ray, R.R., Cooper, J.C., Robertson, E.R., Chopra, S., Gabrieli, J.D. E., & Gross, J.J. (2004). For better or for worse: Neural systems supporting the cognitive down– and up–regulation of negative emotion. *Neuroimage, 23*(2), 483–499. https://doi.org/10.1016/j.neuroimage.2004.06.030

Ojanen, T., Grönroos, M., & Salmivalli, C. (2005). An Interpersonal Circumplex Model of Children's Social Goals: Links With Peer-Reported Behavior and Sociometric Status. *Developmental Psychology*, *41*(5), 699–710. https://doi.org/10.1037/0012-1649.41.5.699

O'Keefe, V.M., & Wingate, L.R. (2013). The role of hope and optimism in suicide risk for American Indians/Alaska Natives. *Suicide and Life-Threatening Behavior*, *43*(6), 621–633. https://doi.org/10.1111/sltb.12044

Olson, D.H. (2000). Circumplex model of marital and family systems. *Journal of Family Therapy*, *22*(2), 144–167. https://doi.org/10.1111/1467-6427.00144

Olson, D.H., Gorall, D.M., & Tiesel, J.W. (2004). *Faces IV Package*. Life Innovations.

Ong, A.D., Bergeman, C.S., Bisconti, T.L., & Wallace, K.A. (2006). Psychological resilience, positive emotions, and successful adaptation to stress in later life. *Journal of Personality and Social Psychology*, *91*(4), 730–749. https://doi.org/10.1037/0022-3514.91.4.730

Osowiecki, D., & Compas, B.E. (1998). Psychological adjustment to cancer: Control beliefs and coping in adult cancer patients. *Cognitive Therapy and Research*, *22*(5), 483–499. https://doi.org/10.1023/A:1018725716620

Ouwehand, C., De Ridder, D.T. D., & Bensing, J.M. (2006). Situational aspects are more important in shaping proactive coping behaviour than individual characteristics: A vignette study among adults preparing for ageing. *Psychology & Health*, *21*(6), 809–825. https://doi.org/10.1080/14768320500537639

Ozbay, F., Johnson, D.C., Dimoulas, E., Morgan, C.A. III, Charney, D., & Southwick, S. (2007). Social support and resilience to stress: From neurobiology to clinical practice. *Psychiatry*, *4*(5), 35–40.

Palmer, A., & Rodger, S. (2009). Mindfulness, stress, and coping among university students. *Canadian Journal of Counselling*, *43*(3), 198–212.

Pargament, K.I., Koenig, H.G., & Perez, L.M. (2000). The many methods of religious coping: Development and initial validation of the RCOPE. *Journal of Clinical Psychology*, *56*(4), 519–543. https://doi.org/10.1002/(sici)1097-4679(200004)56:4<519::aid-jclp6>3.0.co;2-1

Pargament, K.I., Koenig, H.G., Tarakeshwar, N., & Hahn, J. (2004). Religious coping methods as predictors of psychological, physical and spiritual outcomes among medically ill elderly patients: A two-year longitudinal study. *Journal of Health Psychology*, *9*(6), 713–730. https://doi.org/10.1177/1359105304045366

Park, C.L., Armeli, S., & Tennen, H. (2004). Appraisal-Coping goodness of fit: A daily internet study. *Personality and Social Psychology Bulletin*, *30*(5), 558–569. https://doi.org/10.1177/0146167203262855

Park, C.L., Folkman, S., & Bostrom, A. (2001). Appraisals of controllability and coping in caregivers and HIV + men: testing the goodness-of-fit hypothesis. *Journal of Consulting and Clinical Psychology*, *69*(3), 481–488. https://doi.org/10.1037/0022-006x.69.3.481

Park, H.I., Jacob, A.C., Wagner, S.H., & Baiden, M. (2014). Job control and burnout: A meta analytic test of the Conservation of Resources model. *Applied Psychology: An International Review*, *63*(4), 607–642. https://doi.org/10.1111/apps.12008

Parker, J.D., & Endler, N.S. (1992). Coping with coping assessment: A critical review. *European Journal of Personality*, *6*(5), 321–344. https://doi.org/10.1002/per.2410060502

Parker, J. D.A., & Wood, L.M. (2008). Personality and the coping process. In G.J. Boyle, G. Matthews, & D.H. Saklofske (Eds.), *The SAGE handbook of personality theory and assessment, Vol. 1. Personality theories and models* (pp. 506–519). Sage Publications, Inc. https://doi.org/10.4135/9781849200462.n24

Patterson, J.M., & McCubbin, H.I. (1987). ACOPE: Adolescent Coping Orientation for Problem Experiences. In H.I. McCubbin & A.I. Thompson (Eds.), *Family assessment inventories for research and practice* (pp. 225–243). University of Wisconsin Press.

Pearlin, L.I., & Schooler, C. (1978). The structure of coping. *Journal of Health and Social Behavior, 19*(1), 2–21. https://doi.org/10.2307/2136319

Penley, J.A., Tomaka, J., & Wiebe, J.S. (2002). The association of coping to physical and psychological health outcomes: A meta-analytic review. *Journal of Behavioral Medicine, 25*(6), 551–603. https://doi.org/10.1023/A:1020641400589

Pennebaker, J.W., & Beall, S.K. (1986). Confronting a traumatic event: Toward an understanding of inhibition and disease. *Journal of Abnormal Psychology, 95*(3), 274–281. https://doi.org/10.1037/0021-843X.95.3.274

Pessoa, L. (2008). On the relationship between emotion and cognition. *Nature Reviews Neuroscience, 9*(2), 148–158. https://doi.org/10.1038/nrn2317

Phillips, W.J., & Ferguson, S.J. (2013). Self-compassion: A resource of positive aging. *Journal of Gerontology Series B: Psychological Sciences and Social Sciences, 68*(4), 529–539. https://doi.org/10.1093/geronb/gbs091

Piekarska, J. (2015). Zdolności emocjonalne kobiet i mężczyzn a stosowane strategie radzenia sobie ze stresem [Women's and men's emotional abilities and stress coping strategies]. *Studia Psychologica UKSW, 1*(15), 5–18. https://doi.org/10.21697/sp.2015.15.01.01

Ponizovsky, A., Grinshpoon, A., Sasson, R., & Levav, I. (2004). Stress in adult students with schizophrenia in a supported education program. *Comprehensive Psychiatry, 45*(5), 401–407. https://doi.org/10.1016/j.comppsych.2004.03.012

Popplestone, J.A., & McPherson, M.W. (1988). *Dictionary of concepts in general psychology*. Greenwood Press.

Prati, G., & Pietrantoni, L. (2009). Optimism, social support, and coping strategies as factors contributing to posttraumatic growth: A meta-analysis. *Journal of Loss and Trauma, 14*(5), 364–388. https://doi.org/10.1080/15325020902724271

Prati, G., Pietrantoni, L., & Cicognani, E. (2011). Coping strategies and collective efficacy as mediators between stress appraisal and quality of life among rescue workers. *International Journal of Stress Management, 18*(2), 181–195. https://doi.org/10.1037/a0021298

Ptacek, J.T., Smith, R.E., & Dodge, K.L. (1994). Gender differences in coping with stress: When stressor and appraisals do not differ. *Personality and Social Psychology Bulletin, 20*(4), 421–430. https://doi.org/10.1177/0146167294204009

Raes, F. (2010). Rumination and worry as mediators of the relationship between self- compassion and depression and anxiety. *Personality and Individual Differences, 48*(6), 757–761. https://doi.org/10.1016/j.paid.2010.01.023

Rafnsson, F.D., Smari, J., Windle, M., Mears, S.A., & Endler, N.S. (2006). Factor structure and psychometric characteristics of the Icelandic version of the Coping Inventory for Stressful Situations (CISS). *Personality and Individual Differences, 40*(6), 1247–1258. https://doi.org/10.1016/j.paid.2005.11.011

Raine, A., Dodge, K., Loeber, R., Gatzke-Kopp, L., Lynam, D., Reynolds, C., Stouthamer Loeber, M., & Liu, J. (2006). The reactive–proactive aggression questionnaire: Differential correlates of reactive and proactive aggression in adolescent boys. *Aggressive Behavior: Official Journal of the International Society for Research on Aggression, 32*(2), 159–171. https://doi.org/10.1002/ab.20115

Rajandram, R.K., Ho, S.M. Y., Samman, N., Chan, N., McGrath, C., & Zwahlen, R.A. (2011). Interaction of hope and optimism with anxiety and depression in a specific group of cancer survivors: A preliminary study. *BMC Research Notes, 4*(1), 1–7. https://doi.org/10.1186/1756-0500-4-519

Randles, D., Flett, G.L., Nash, K.A., McGregor, I.D., & Hewitt, P. (2010). Dimensions of perfectionism, behavioral inhibition, and rumination. *Personality and Individual Differences, 49*(2), 83–87. https://doi.org/10.1016/j.paid.2010.03.002

Rayan, A., & Ahmad, M. (2016). Effectiveness of mindfulness-based interventions on quality of life and positive reappraisal coping among parents of children with autism spectrum disorder. *Research in Developmental Disabilities*, *55*, 185–196. https://doi.org/10.1016/j.ridd.2016.04.002

Renard, M., & Snelgar, R.J. (2013). Exploring the factor structure of the Proactive Coping Inventory: A Southern African study. *Journal of Psychology in Africa*, *23*(3), 519–522. https://doi.org/10.1080/14330237.2013.10820662

Rey, J.J., Abad, F.J., Barrada, J.R., Garrido, L.E., & Ponsoda, V. (2014). The impact of ambiguous response categories on the factor structure of the GHQ–12. *Psychological Assessment*, *26*(3), 1021–1030. https://doi.org/10.1037/a0036468

Rice, V.H. (Ed.) (2000). *Handbook of stress, coping and health. Implications for nursing research, theory and practice.* Sage Publications, Inc.

Ritsner, M., Ben-Avi, I., Ponizovsky, A., Timinsky, I., Bistrov, E., & Modai, I. (2003). Quality of life and coping with schizophrenia symptoms. *Quality of Life Research*, *12*(1), 1–9. https://doi.org/10.1023/a:1022049111822

Roesch, S.C., Aldridge, A.A., Huff, T.L. P., Langner, K., Villodas, F., & Bradshaw, K. (2009). On the dimensionality of the proactive coping inventory: 7, 5, 3 factors? *Anxiety, Stress & Coping: An International Journal*, *22*(3), 327–329. https://doi.org/10.1080/10615800802082304

Romppel, M., Braehler, E., Roth, M., & Glaesmer, H. (2013). What is the General Health Questionnaire–12 assessing? Dimensionality and psychometric properties of the General Health Questionnaire–12 in a large scale German population sample. *Comprehensive Psychiatry*, *54*,(4), 406–413. https://doi.org/10.1016/j.comppsych.2012.10.010

Rosenberg, M. (1965). *Society and adolescent self-image.* Princeton University Press. https://doi.org/10.1515/9781400876136

Roth, S., & Cohen, L.J. (1986). Approach, avoidance, and coping with stress. *American Psychologist*, *41*(7), 813–819. https://doi.org/10.1037/0003-066X.41.7.813

Rothbaum, F., Weisz, J.R., & Snyder, S.S. (1982). Changing the world and changing the self: A two-process model of perceived control. *Journal of Personality and Social Psychology*, *42*(1), 5–37. https://doi.org/10.1037/0022-3514.42.1.5

Rovira, T., Fernandez-Castro, J., & Edo, S. (2005). Antecedents and consequences of coping in the anticipatory stage of an exam: A longitudinal study emphasizing the role of affect. *Anxiety, Stress & Coping: An International Journal*, *18*(3), 209–225. https://doi.org/10.1080/10615800500134654

Rubin, K.H., Coplan, R.J., & Bowker, J.C. (2009). Social withdrawal in childhood. *Annual Review of Psychology*, *60*(1), 141–171. https://doi.org/10.1146/annurev.psych.60.110707.163642

Rubio, L., Dumitrache, C.G., Cordón-Pozo, E., & Rubio-Herrera, R. (2016). Psychometric properties of the Spanish version of the Coping Strategies Inventory (CSI) in elderly people. *Anales de Psicología/Annals of Psychology*, *32*(2) 355–365. https://doi.org/10.6018/analesps.32.2.216141

Rudolph, K.D., Dennig, M.D., & Weisz, J.R. (1995). Determinants and consequences of children's coping in the medical setting: Conceptualization, review, and critique. *Psychological Bulletin*, *118*(3), 328–357. https://doi.org/10.1037/0033-2909.118.3.328

Russell, D.W. (2002). In search of underlying dimensions:The use (and abuse) of factor analysis in Personality and Social Psychology Bulletin. *Personality and Social Psychology Bulletin*, *28*(12), 1629–1646. https://doi.org/10.1177/014616702237645

Russell, J.A. (1980). A circumplex model of affect. *Journal of Personality and Social Psychology*, *39*(6), 1161–1178. https://doi.org/10.1037/h0077714

Safran, J.D., & Segal, Z.V. (1996). *Interpersonal process in cognitive therapy.* Jason Aronson.

Saklofske, D.H., Austin, E.J., Mastoras, S.M., Beaton, L., & Osborne, S.E. (2012). Relationships of personality, affect, emotional intelligence and coping with student stress and academic

success: Different patterns of association for stress and success. *Learning and Individual Differences, 22*(2), 251–257. https://doi.org/10.1016/j.lindif.2011.02.010

Samson, A., & Gross, J.J. (2012). Humor as emotion regulation: The differential consequences of negative versus positive humor. *Cognition & Emotion, 26*(2), 375–384. https://doi.org/10.1080/02699931.2011.585069

Sęk, H., Kaczmarek, Ł., Ziarko, M., Pietrzykowska, E., & Lewicka, J. (2012). Sprężystość psychiczna a dobrostan w chorobie przewlekłej – mediująca rola podmiotowego umocowania i radzenia sobie [Resiliency and well-being in chronic diseases – mediating role of empowerment and coping]. *Polskie Forum Psychologiczne, 17*,(2), 327–343.

Schanowitz, J.Y., & Nicassio, P.M. (2006). Predictors of positive psychosocial functioning of older adults in residential care facilities. *Journal of Behavioral Medicine, 29*,(2) 191–201. https://doi.org/10.1007/s10865-005-9034-3

Scheier, M.F., & Carver, C.S. (1988). A model of behavioral self-regulation: Translating intention into action. In L. Berkowitz (Ed.), *Advances in experimental social psychology, Vol. 21. Social psychological studies of the self: Perspectives and programs* (pp. 303–346). Academic Press.

Scheier, M.F., Carver, C.S., & Bridges, M.W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A reevaluation of the life orientation test. *Journal of Personality and Social Psychology, 67*,(6), 1063–1078. https://doi.org/10.1037/0022-3514.67.6.1063

Scheier, M.F., Weintraub, J.K., & Carver, C.S. (1986). Coping with stress: Divergent strategies of optimists and pessimists. *Journal of Personality and Social Psychology, 51*(6), 1257–1264. https://doi.org/10.1037/0022-3514.51.6.1257

Schmitt, D.P., Realo, A., Voracek, M., & Allik, J. (2008). Why can't a man be more like a woman? Sex differences in Big Five personality traits across 55 cultures. *Journal of Personality and Social Psychology, 94*(1), 168–182. https://doi.org/10.1037/0022-3514.94.1.168

Schmitt, T.A. (2011). Current methodological considerations in exploratory and confirmatory factor analysis. *Journal of Psychoeducational Assessment, 29*(4), 304–321. https://doi.org/10.1177/0734282911406653

Schmitz, U., Saile, H., & Nilges, P. (1996). Coping with chronic pain: Flexible goal adjustment as an interactive buffer against pain-related distress. *Pain, 67*(1), 41–51. https://doi.org/10.1016/0304-3959(96)03108-9

Schröder, K.E. E., Schwarzer, R., & Konertz, W. (1998). Coping as a mediator in recovery from cardiac surgery. *Psychology & Health, 13*(1), 83–97. https://doi.org/10.1080/08870449808406133

Schwarzer, R. (2001). Stress, resources, and proactive coping. *Applied Psychology: An International Review, 50*(3), 400–407.

Schwarzer, R., & Schwarzer, C. (1996). A critical survey of coping instruments. In M. Zeidner & N.S. Endler (Eds.), *Handbook of coping: Theory, research, applications* (pp. 107–132). John Wiley & Sons.

Schwarzer, R., & Taubert, S. (2002). Tenacious goal pursuits and striving toward personal growth: Proactive coping. In E. Frydenberg (Ed.), *Beyond coping: Meeting goals, visions, and challenges* (pp. 19–35). Oxford University Press. https://doi.org/10.1093/med:psych/9780198508144.003.0002

Scott, S.L., Carper, T.M., Middleton, M., White, R., Renk, K., & Grills-Taquechel, A. (2010). Relationships among locus of control, coping behaviors, and levels of worry following exposure to hurricanes. *Journal of Loss and Trauma, 15*(2), 123–137. https://doi.org/10.1080/15325020902925985

Selye, H. (1936). A Syndrome Produced by Diverse Nocuous Agents. *Nature, 138*, 32. https://doi.org/10.1038/138032a0

Selye, H. (1974). *Stress without distress.* Lippincott Company.

Semrad, E., Grinspoon, L., & Fienberg, S.E. (1973). Development of an Ego Profile Scale. *Archives of General Psychiatry, 28*(1), 70–77. https://doi.org/10.1001/archpsyc.1973.01750310050008

Sica, C., Novara, C., Dorz, S., & Sanavio, E. (1997). Coping strategies: Evidence for cross- cultural differences? A preliminary study with the Italian version of coping orientations to problems experienced (COPE). *Personality and Individual Differences*, *23*(6), 1025–1029. https://doi.org/10.1016/s0191-8869(97)00112-8

Siddique, H.I., LaSalle-Ricci, V.H., Glass, C.R., Arnkoff, D.B., & Diaz, R.J. (2006). Worry, optimism, and expectations as predictors of anxiety and performance in the first year of law school. *Cognitive Therapy and Research, 30*(5), 667–676. https://doi.org/10.1007/s10608-006-9080-3

Sirois, F.M., & Kitner R. (2015). Less adaptive or more maladaptive? A meta-analytic investigation of procrastination and coping. *European Journal of Personality*, *29*(4), 433–444. https://doi.org/10.1002/per.1985

Sirois, F.M., Molnar, D.S., & Hirsch, J.K. (2015). Self-compassion, stress, and coping in the context of chronic illness. *Self and Identity*, *14*(3), 334–347. https://doi.org/10.1080/15298868.2014.996249

Siu, O.-l., Spector, P.E., Cooper, C.L., & Donald, I. (2001). Age differences in coping and locus of control: A study of managerial stress in Hong Kong. *Psychology and Aging*, *16*(4), 707–710. https://doi.org/10.1037/0882-7974.16.4.707

Skinner, E.A., Edge, K., Altman, J., & Sherwood, H. (2003). Searching for the structure of coping: A review and critique of category systems for classifying ways of coping. *Psychological Bulletin*, *129*(2), 216–269. https://doi.org/10.1037/0033-2909.129.2.216

Skinner, E.A., & Wellborn, J.G. (1994). Coping during childhood and adolescence: A motivational perspective. In D.L. Featherman, R.M. Lerner, & M. Perlmutter (Eds.), *Life-span development and behavior* (Vol. 12, pp. 91–133). Lawrence Erlbaum Associates, Inc.

Smeekens, S., Riksen-Walraven, J.M., & van Bakel, H.J. A. (2007). Cortisol reactions in five-year-olds to parent–child interaction: The moderating role of ego-resiliency. *Journal of Child Psychology and Psychiatry*, *48*(7), 649–656. https://doi.org/10.1111/j.1469-7610.2007.01753.x

Smith, C.A., & Lazarus, R.S. (1990). Emotion and adaptation. In L.A. Pervin (Ed.), *Handbook of personality: Theory and research* (pp. 609–637). The Guilford Press.

Smith, M.M., Sherry, S.B., Rnic, K., Saklofske, D.H., Enns, M., & Gralnick, T. (2016). Are perfectionism dimensions vulnerability factors for depressive symptoms after controlling for neuroticism? A meta–analysis of 10 longitudinal studies. *European Journal of Personality*, *30*(2), 201–212. https://doi.org/10.1002/per.2053

Smith, M., Wethington, E., & Zhan, G. (1996). Self-concept clarity and preferred coping styles. *Journal of Personality*, *64*(2), 407–434. https://doi.org/10.1111/j.1467-6494.1996.tb00516.x

Snell, D.L., Siegert, R.J., Hay-Smith, E.J., & Surgenor, L.J. (2011). Factor Structure of the Brief COPE in People With Mild Traumatic Brain Injury. *The Journal of Head Trauma Rehabilitation*, *26*(6), 468–477. https://doi.org/10.1097/htr.0b013e3181fc5e1e

Snyder, C.R., Harris, C., Anderson, J.R., Holleran, S.A., Irving, L.M., Sigmon, S.T., Yoshinobu, L., Gibb, J., Langelle, C., & Harney, P. (1991). The will and the ways: Development and validation of an individual-differences measure of hope. *Journal of Personality and Social Psychology*, *60*(4), 570–585. https://doi.org/10.1037/0022-3514.60.4.570

Snyder, C.R., & Pulvers, K. (2001). Dr. Seuss, the coping machine, and "Oh, the places you will go." In C.R. Snyder (Ed.), *Coping and copers: Adaptive processes and people* (pp. 3–29). Oxford University Press.

Søgaard, A.J., Dalgard, O.S., Holme, I., Røysamb, E., & Håheim, L.L. (2008). Associations between type A behavior pattern and psychological distress. *Social Psychiatry and Psychiatric Epidemiology*, *43*(3), 216–223. https://doi.org/10.1007/s00127-007-0288-7

Somerfield, M.R., & McCrae, R.R. (2000). Stress and coping research: Methodological challenges, theoretical advances, and clinical applications. *American Psychologist*, *55*(6), 620–625. https://doi.org/10.1037/0003-066X.55.6.620

Sonnentag, S., & Fritz, C. (2007). The Recovery Experience Questionnaire: Development and validation of a measure for assessing recuperation and unwinding from work. *Journal of Occupational Health Psychology, 12*(3), 204–221. https://doi.org/10.1037/1076-8998.12.3.204

Sørlie, T., & Sexton, H. (2001). The factor structure of ''The Ways of Coping Questionnaire'' and the process of coping in surgical patients. *Personality and Individual Differences, 30*(6), 961–975. https://doi.org/10.1016/s0191-8869(00)00086-6

Spence, J.T., Helmreich, R.L., & Pred, R.S. (1987). Impatience versus achievement strivings in the Type A pattern: Differential effects on students' health and academic achievement. *Journal of Applied Psychology, 72*(4), 522–528. https://doi.org/10.1037/0021-9010.72.4.522

Stanisławski, K. (2019). The Coping Circumplex Model: An integrative model of the structure of coping with stress. *Frontiers in Psychology, 10*, Article 694. https://doi.org/10.3389/fpsyg.2019.00694

Stanisławski, K., Cieciuch, J., Strus, W. (2021). Ellipse rather than a circumplex: A systematic test of various circumplexes of emotions. *Personality and Individual Differences, 181*, Article 111052. https://doi.org/10.1016/j.paid.2021.111052

Stanton, A.L., Danoff-Burg, S., Cameron, C.L., & Ellis, A.P. (1994). Coping through emotional approach: Problems of conceptualizaton and confounding. *Journal of Personality and Social Psychology, 66*(2), 350–362. https://doi.org/10.1037/0022-3514.66.2.350

Stanton, A.L., Kirk, S.B., Cameron, C.L., & Danoff-Burg, S. (2000). Coping through emotional approach: Scale construction and validation. *Journal of Personality and Social Psychology, 78*(6), 1150–1169. https://doi.org/10.1037/0022-3514.78.6.1150

Stanton, A.L., & Low, C.A. (2012). Expressing emotions in stressful contexts: Benefits, moderators, and mechanisms. *Current Directions in Psychological Science, 21*(2), 124–128. https://doi.org/10.1177/0963721411434978

Stanton, A.L., Parsa, A., & Austenfeld, J.L. (2002). The adaptive potential of coping through emotional approach. In C.R. Snyder & S.J. Lopez (Eds.), *Handbook of positive psychology* (pp. 148–158). Oxford University Press.

Steenkamp, M.M., Litz, B.T., Hoge, C.W., & Marmar, C.R. (2015). Psychotherapy for military-related PTSD: a review of randomized clinical trials. *JAMA, 314*(5), 489–500. https://doi.org/10.1001/jama.2015.8370

Steptoe, A., Dockray, S., & Wardle, J. (2009). Positive affect and psychobiological processes relevant to health. *Journal of Personality, 77*(6), 1747–1776. https://doi.org/10.1111/j.1467-6494.2009.00599.x

Stober, J., & Joormann, J. (2001). Worry, procrastination, and perfectionism: Differentiating amount of worry, pathological worry, anxiety, and depression. *Cognitive Therapy and Research, 25*(1), 49–60. https://doi.org/10.1023/A:1026474715384

Stoeber, J., & Janssen, D.P. (2011). Perfectionism and coping with daily failures: Positive reframing helps achieve satisfaction at the end of the day. *Anxiety, Stress & Coping: An International Journal, 24*(5), 477–497. https://doi.org/10.1080/10615806.2011.562977

Storbeck, J. & Clore, G.L. (2007). On the interdependence of cognition and emotion. *Cognition & Emotion, 21*(6), 1212–1237. https://doi.org/10.1080/02699930701438020

Stowell, J.R., Kiecolt-Glaser, J.K., & Glaser, R. (2001). Perceived stress and cellular immunity: When coping counts. *Journal of Behavioral Medicine, 24*(4), 323–339. https://doi.org/10.1023/a:1010630801589

Strack, J., & Esteves, F. (2015). Exams? Why worry? Interpreting anxiety as facilitative and stress appraisals. *Anxiety, Stress & Coping: An International Journal, 28*(2), 205–214. https://doi.org/10.1080/10615806.2014.931942

Straud, C., McNaughton-Cassill, M., & Fuhrman, R. (2015). The role of the Five Factor Model of personality with proactive coping and preventative coping among college students. *Personality and Individual Differences, 83*, 60–64. https://doi.org/10.1016/j.paid.2015.03.055

Strelau, J. (1995). Temperament and stress: Temperament as a moderator of stressors, emotional states, coping and costs. In C. Spielberger & I. Sarason (Eds.), *Stress and emotion: Anxiety, anger and curiosity* (Vol. 15, pp. 215–254). Hemisphere.

Strelau, J. (2000). Temperament a stres [Temperament and stress]. In I. Heszen-Niejodek & Z. Ratajczak (Eds.), *Człowiek w sytuacji stresu* [A human being in a situation of stress] (pp. 88–132). Wydawnictwo UŚ.

Strelau, J., Jaworowska, A., Wrześniewski, K., & Szczepaniak, P. (2005). *Kwestionariusz Radzenia sobie w Sytuacjach Stresowych. Podręcznik* [The Coping in Stressful Situations Inventory. Manual]. Pracownia Testów Psychologicznych PTP.

Strus, W., & Cieciuch, J. (2017). Towards a synthesis of personality, temperament, motivation, emotion and mental health models within the Circumplex of Personality Metatraits. *Journal of Research in Personality, 66*, 70–95. https://doi.org/10.1016/j.jrp.2016.12.002

Strus, W., Cieciuch, J., & Rowiński, T. (2014). The Circumplex of Personality Metatraits: A synthesizing model of personality based on the Big Five. *Review of General Psychology, 18*(4), 273–286. https://doi.org/10.1037/gpr0000017

Struthers, C.W., Perry, R.P., & Menec, V.H. (2000). An examination of the relationship among academic stress, coping, motivation, and performance in college. *Higher Education, 41*(5), 581–592. https://doi.org/10.1023/A:1007094931292

Suls, J., & Wan, C.K. (1989). The relation between Type A behavior and chronic emotional distress: A meta-analysis. *Journal of Personality and Social Psychology, 57*(3), 503–512. https://doi.org/10.1037/0022-3514.57.3.503

Sveinbjornsdottir, S., & Thorsteinsson, E.B. (2008). Adolescent coping scales: A critical psychometric review. *Scandinavian Journal of Psychology, 49*(6), 533–548. https://doi.org/10.1111/j.1467-9450.2008.00669.x

Taft, C.T., Resick, P.A., Panuzio, J., Vogt, D., & Mechanic, M.B. (2007). Coping among victims of relationship abuse: A longitudinal examination. *Violence and Victims, 22*(4), 408–418. https://doi.org/10.1891/088667007781553946

Tamir, M. (2009). What Do People Want to Feel and Why? *Current Directions in Psychological Science, 18*(2), 101–105. https://doi.org/10.1111/j.1467-8721.2009.01617.x

Tamres, L.K., Janicki, D., & Helgeson, V.S. (2002). Sex differences in coping behavior: A meta-analytic review and an examination of relative coping. *Personality and Social Psychology Review, 6*(1), 2–30. https://doi.org/10.1207/S15327957PSPR0601_1

Taylor, J.L., Smith, P.J., Babyak, M.A., Barbour, K.A., Hoffman, B.M., Sebring, D.L., Davis, R.D., Palmer, S.M., Keefe, F.J., Carney, R.M., Csik, I., Freedland, K.E., & Blumenthal, J.A. (2008). Coping and quality of life in patients awaiting lung transplantation. *Journal of Psychosomatic Research, 65*(1), https://doi.org/10.1016/j.jpsychores.2008.04.009

Taylor, S.E., & Armor, D.A. (1996). Positive illusions and coping with adversity. *Journal of Personality, 64*(4), 873–898. https://doi.org/10.1111/j.1467-6494.1996.tb00947.x

Taylor, S.E., Lichtman, R.R., & Wood, J.V. (1984). Attributions, beliefs about control, and adjustment to breast cancer. *Journal of Personality and Social Psychology, 46*(3), 489–502. https://doi.org/10.1037/0022-3514.46.3.489

Tedeschi, R.G., & Calhoun, L.G. (1996). The Posttraumatic Growth Inventory: Measuring the positive legacy of trauma. *Journal of Traumatic Stress, 9*(3), 455–472. https://doi.org/10.1002/jts.2490090305

Tedeschi, R.G., Calhoun, L.G., & Cann, A. (2007). Evaluating resource gain: Understanding and misunderstanding posttraumatic growth. *Applied Psychology: An International Review*, *56*(3), 396–406. https://doi.org/10.1111/j.1464-0597.2007.00299.x

Tennen, H., Affleck, G., Armeli, S., & Carney, M.A. (2000). A daily process approach to coping: Linking theory, research, and practice. *American Psychologist*, *55*(6), 626–636. https://doi.org/10.1037/0003-066X.55.6.626

Terelak, J.F. (2017). *Stres życia. Perspektywa psychologiczna* [The Stress of Life. A Psychological Perspective]. Wydawnictwo UKSW.

Terry, D.J., & Hynes, G.J. (1998). Adjustment to a low-control situation: Reexamining the role of coping responses. *Journal of Personality and Social Psychology*, *74*(4), 1078–1092. https://doi.org/10.1037/0022-3514.74.4.1078

Thompson, R.A. (1994). Emotion regulation: A theme in search of definition. *Monographs of the Society for Research in Child Development*, *59*(2-3), 25–52, 250–283. https://doi.org/10.2307/1166137

Tobin, D.L., Holroyd, K.A., Reynolds, R.V., & Wigal, J.K. (1989). The hierarchical factor structure of the Coping Strategies Inventory. *Cognitive Therapy and Research*, *13*(4), 343–361. https://doi.org/10.1007/BF01173478

Tolor, A., & Fehon, D. (1987). Coping with stress: A study of male adolescents' coping strategies as related to adjustment. *Journal of Adolescent Research*, *2*(1), 33–42. https://doi.org/10.1177/074355488721003

Tomich, P.L., & Helgeson, V.S. (2006). Cognitive adaptation theory and breast cancer recurrence: Are there limits? *Journal of Consulting and Clinical Psychology*, *74*(5), 980–987. https://doi.org/10.1037/0022-006X.74.5.980

Torkelson, E., & Muhonen, T. (2004). The role of gender and job level in coping with occupational stress. *Work & Stress*, *18*(3), 267–274. https://doi.org/10.1080/02678370412331323915

Tracey, T.J. G. (1997). RANDALL: A Microsoft FORTRAN program for a randomization test of hypothesized order relations. *Educational and Psychological Measurement*, *57*(1), 164–168. https://doi.org/10.1177/0013164497057001012

Tracey, T.J. G. (2000). Analysis of circumplex models. In H.E. A. Tinsley & S.D. Brown (Eds.), *Handbook of applied multivariate statistics and mathematical modeling* (pp. 641–664). Academic Press. https://doi.org/10.1016/B978-012691360-6/50023-9

Tracey, T.J. G. (2002). Personal Globe Inventory: Measurement of the spherical model of interests and competence beliefs. *Journal of Vocational Behavior*, *60*(1), 113–172. https://doi.org/10.1006/jvbe.2001.1817

Tracey, T.J. G., & Rounds, J. (1996). The spherical representation of vocational interests. *Journal of Vocational Behavior*, *48*(1), 3–41. https://doi.org/10.1006/jvbe.1996.0002

Tran, U.S., Cebolla, A., Glück, T.M., Soler, J., Garcia-Campayo, J., & von Moy, T. (2014). The serenity of the meditating mind: A cross-cultural psychometric study on a two- factor higher order structure of mindfulness, its effects, and mechanisms related to mental health among experienced meditators. *PLOS ONE*, *9*(10), Article e110192. https://doi.org/10.1371/journal.pone.0110192

Trochim, W.M. (1989). An introduction to concept mapping for planning and evaluation. *Evaluation and Program Planning*, *12*(1), 1–16. https://doi.org/10.1016/0149-7189(89)90016-5

Tugade, M.M., & Fredrickson, B.L. (2004). Resilient Individuals Use Positive Emotions to Bounce Back From Negative Emotional Experiences. *Journal of Personality and Social Psychology*, *86*(2), 320–333. https://doi.org/10.1037/0022-3514.86.2.320

Turner, N.E. (1998). The effect of common variance and structure pattern on random data eigenvalues: Implications for the accuracy of parallel analysis. *Educational and Psychological Measurement*, *58*(4), 541–568. https://doi.org/10.1177/0013164498058004001

Vaillant, G.E. (1977). *Adaptation to life*. Little, Brown, & Co.

Vaillant, G.E. (1994). Ego mechanisms of defense and personality psychopathology. *Journal of Abnormal Psychology, 103*(1), 44–50. https://doi.org/10.1037/0021-843X.103.1.44

Vălenaş, S.P., Szentágotai-Tătar, A., Grafton, B., Notebaert, L., Miu, A.C., & MacLeod, C. (2017). Prediction of pre-exam state anxiety from ruminative disposition: The mediating role of impaired attentional disengagement from negative information, *Behaviour Research and Therapy, 91*, 102–110. https://doi.org/10.1016/j.brat.2017.01.014

Van Lankveld, W., van Diemen, T., & van Nes, I. (2011). Coping with spinal cord injury: Tenacious goal pursuit and flexible goal adjustment. *Journal of Rehabilitation Medicine, 43*(10), 923–929. https://doi.org/10.2340/16501977-0870

Van Liew, C., Santoro, M.S., Edwards, L., Kang, J., & Cronan, T.A. (2016). Assessing the structure of the Ways of Coping Questionnaire in fibromyalgia patients using common factor analytic approaches. *Pain Research & Managemen*t, *2016*, Article 7297826. https://doi.org/10.1155/2016/7297826

Wadsworth, M.E., Raviv, T., Compas, B.E., & Connor-Smith, J.K. (2005). Parent and Adolescent Responses to Poverty-Related Stress: Tests of Mediated and Moderated Coping Models. *Journal of Child and Family Studies, 14*(2), 283–298. https://doi.org/10.1007/s10826-005-5056-2

Walker, L.S., Smith, C.A., Garber, J., & Van Slyke, D.A. (1997). Development and validation of the pain response inventory for children. *Psychological Assessment, 9*(4), 392–405. https://doi.org/10.1037/1040-3590.9.4.392

Watanabe, K., Yokoyama, K., & Furukawa, T.A. (2015). Reliability and Validity of the Japanese Version of the Coping Inventory for Adults for Stressful Situations in Healthy People. *Psychological Reports, 116*(2), 447–469. https://doi.org/10.2466/08.02.pro.116k23w6

Watson, D., & Clark, L.A. (1994). *The PANAS-X: Manual for the Positive Affect and Negative Affect Schedule–Expanded Form*. University of Iowa. https://www2.psychology.uiowa.edu/faculty/clark/panas-x.pdf

Watson, D., & Tellegen, A. (1985). Toward a consensual structure of mood. *Psychological Bulletin, 98*(2), 219–235. https://doi.org/10.1037/0033-2909.98.2.219

Watson, D., Wiese, D., Vaidya, J., & Tellegen, A. (1999). The two general activation systems of affect: Structural findings, evolutionary considerations, and psychobiological evidence. *Journal of Personality and Social Psychology, 76*(5), 820–838. https://doi.org/10.1037/0022-3514.76.5.820

Waugh, C.E., Fredrickson, B.L., & Taylor, S.F. (2008). Adapting to life's slings and arrows: Individual differences in resilience when recovering from an anticipated threat. *Journal of Research in Personality, 42*(4), 1031–1046. https://doi.org/10.1016/j.jrp.2008.02.005

Wei, M., Alvarez, A.N., Ku, T.-Y., Russell, D.W., & Bonett, D.G. (2010). Development and validation of a Coping with Discrimination Scale: Factor structure, reliability, and validity. *Journal of Counseling Psychology, 57*(3), 328–344. https://doi.org/10.1037/a0019969

Weinstein, N., Brown, K.W., & Ryan, R.M. (2009). A multi-method examination of the effects of mindfulness on stress attribution, coping, and emotional well-being. *Journal of Research in Personality, 43*(3), 374–385. https://doi.org/10.1016/j.jrp.2008.12.008

Weiss, N.H., Duke, A.A., & Sullivan, T.P. (2014). Evidence for a curvilinear dose-response relationship between avoidance coping and drug use problems among women who experience intimate partner violence. *Anxiety, Stress & Coping: An International Journal, 27*(6), 722–732. https://doi.org/10.1080/10615806.2014.899586

Weisz, J.R., McCabe, M.A., & Dennig, M.D. (1994). Primary and secondary control among children undergoing medical procedures: Adjustment as a function of coping style. *Journal of Consulting and Clinical Psychology, 62*(2), 324–332. https://doi.org/10.1037/0022-006X.62.2.324

West, S.G., Finch, J.F., & Curran, P.J. (1995). Structural equation models with nonnormal variables: Problems and remedies. In R.H. Hoyle (Ed.), *Structural equation modeling: Concepts, issues, and applications* (pp. 56–75). Sage Publications, Inc.

Wherry, R.J. (1984). *Contributions to correlational analysis*. Academic Press. https://doi.org/10.1016/c2013-0-11694-7

Why, Y.P., & Huang, R.Z. (2011). Positive illusions and its association with cardiovascular functions. *International Journal of Psychophysiology, 81*(3), 305–311. https://doi.org/10.1016/j.ijpsycho.2011.07.016

Wiggins, J.S. (1979). A psychological taxonomy of trait-descriptive terms: The interpersonal domain. *Journal of Personality and Social Psychology, 37*(3), 395–412. https://doi.org/10.1037/0022-3514.37.3.395

Wiggins, J.S. (1995). *Interpersonal Adjective Scales: professional manual*. Psychological Assessment Resources.

Wiggins, J.S., & Broughton, R. (1991). A geometric taxonomy of personality scales. *European Journal of Personality, 5*(5), 343–365. https://doi.org/10.1002/per.2410050503

Wiggins, J.S., Phillips, N., & Trapnell, P. (1989). Circular reasoning about interpersonal behavior: Evidence concerning some untested assumptions underlying diagnostic classification. *Journal of Personality and Social Psychology, 56*(2), 296–305. https://doi.org/10.1037/0022-3514.56.2.296

Wiggins, J.S., Trapnell, P., & Phillips, N. (1988). Psychometric and Geometric Characteristics of the Revised Interpersonal Adjective Scales (IAS-R). *Multivariate Behavioral Research, 23*(4), 517–530. https://doi.org/10.1207/s15327906mbr2304_8

Williams, F., & Hasking, P. (2010). Emotion regulation, coping and alcohol use as moderators in the relationship between non-suicidal self-injury and psychological distress. *Prevention Science, 11*(1), 33–41. https://doi.org/10.1007/s11121-009-0147-8

Winnicott, D.W. (1988). *Human nature*. Free Association Books.

Wong, S.S., & Lim, T. (2009). Hope versus optimism in Singaporean adolescents: Contributions to depression and life satisfaction. *Personality and Individual Differences, 46*(5-6), 648–652. https://doi.org/10.1016/j.paid.2009.01.009

Worthington, E.L., Jr., & Scherer, M. (2004). Forgiveness is an emotion-focused coping strategy that can reduce health risks and promote health resilience: Theory, review, and hypotheses. *Psychology & Health, 19*(3), 385–405. https://doi.org/10.1080/08870440420000196674

Wright, A.G.C., Pincus, A.L., Conroy, D.E., & Hilsenroth, M.J. (2009). Integrating methods to optimize circumplex description and comparison of groups. *Journal of Personality Assessment, 91*(4), 311–322. https://doi.org/10.1080/00223890902935696

Wrześniewski, K. (2000). Style a strategie radzenia sobie ze stresem. Problemy pomiaru [Styles and strategies of coping with stress. Problems of measurement]. In I. Heszen- Niejodek & Z. Ratajczak (Eds.), *Człowiek w sytuacji stresu* [A human being in a situation of stress] (pp. 44–64). Wydawnictwo UŚ.

Yik, M., Russell, J.A., & Steiger, J.H. (2011). A 12-point circumplex structure of core affect. *Emotion, 11*(4), 705–731 https://doi.org/10.1037/a0023980

Zhou, C., Wu, Y., An, S., & Li, X. (2015). Effect of expressive writings intervention on health outcomes in breast cancer patients: a systematic review and meta-analysis of randomized controlled trials. *PLOS ONE, 10*(7), Article e0131802. https://doi.org/10.1371/journal.pone.0131802

Zimmer-Gembeck, M.J., & Skinner, E.A. (2011). Review: The development of coping across childhood and adolescence: An integrative review and critique of research. *International Journal of Behavioral Development, 35*(1), 1–17. https://doi.org/10.1177/0165025410384923

Zoellner, T., & Maercker, A. (2006). Posttraumatic growth in clinical psychology: A critical review and introduction of a two-component model. *Clinical Psychology Review*, *26*(5), 626–653. https://doi.org/10.1016/j.cpr.2006.01.008

Zoellner, T., Rabe, S., Karl, A., & Maercker, A. (2008). Post-traumatic growth in accident survivors: Openness and optimism as predictors of its constructive or illusory sides. *Journal of Clinical Psychology*, *64*(3), 245–263. https://doi.org/10.1002/jclp.20441

Appendix

Translation of CCI Items (Grouped in Scales)

CCI[7]

Gender F M Age: .....

Below are descriptions of different people's reactions to difficult situations. How do you react when you find yourself in a difficult and stressful situation? For each item, select one response: 1 (*very seldom*), 2 (*seldom*), 3 (*from time to time*), 4 (*often*), or 5 (*very often*).

Problem solving

1.	I develop a strategy of action and carry it out right away.
9.	I try to predict the course of events and be a step ahead.
17.	When I learn about unpleasant things, different thoughts cross my mind and I try to choose the right solution.
25.	I take a variety of actions to solve the problem.
33.	I try to understand the root cause and prevent adverse consequences.
41.	I consider different ways of solving the problem and choose the best ones.
49.	I try to predict the consequences of my actions and take steps that seem most appropriate.
57.	I look at the situation from a different perspective and choose the most adequate actions.
60.	I carry out the most important tasks one by one.
69.	I overcome obstacles to my goal one by one.
74.	I set out a plan of action and carry it out consistently.
76.	I can see the goal clearly and I simply strive to achieve it.

7 This part of Appendix presents translation of CCI items. As it was described in Chapter 5 "Method", original study was conducted in Polish and all psychometric properties of the instrument were based on original Polish version. Original Polish version of the CCI is available from author upon request.

Problem avoidance

5.	I give up looking for a solution and occupy myself with something else.
13.	I want to somehow wait out the difficult situation.
21.	I wait and see what fate has in store.
29.	I postpone making a difficult decision.
37.	I avoid the problem.
45.	I put the problem off until later.
53.	I back out and I no longer attempt to achieve my goal.
65.	I wait until things sort themselves out.
67.	After some time, I stop looking for a way out of the situation.
71.	I want to take my mind off the problem.

Positive emotional coping

7.	I notice something funny about it.
15.	When something does not work out for me, I try to go easy on myself.
23.	I make fun of the situation.
31.	I think of something that cheers me up.
39.	I look at the problem from a different perspective and find something that would calm me down.
47.	When I experience failure, I try to be kind to myself.
55.	I don't think that the problem is all that serious and I manage to relax.
61.	I find something comforting about the situation.

Negative emotional coping

3.	I feel tension and pressure.
11.	Stress evokes strong emotions in me.
19.	I'm anxious and I think a lot about what's going on.
27.	When something difficult happens, I'm critical of myself.
35.	I often think about what happened to make sure that I didn't do anything wrong.
43.	I'm anxious and in my head I have obsessive thoughts related to the problem.
51.	Difficult situations make me angry.

Optimistic action

4.	I notice something interesting and positive about the difficult situation.
12.	Even when something unpleasant happens I still feel that there's a lot of good in the world.
20.	A difficult situation may bring new opportunities.
28.	I try to deal with the problem believing that everything's going to be all right.
36.	I look at difficult situations with optimism and hope.
44.	I try to see the situation from a different perspective and I remain in a good mood.
52.	I notice something about the situation that makes it easier for me to take action towards my goal.
64.	I know that the situation is difficult, but I'm optimistic.

Pessimistic passivity

8.	When faced with a problem I get an impression that my efforts are futile.
16.	I don't know how to get down to solving the problem.
24.	I realize that the problem may be too hard for me.
32.	The situation is unclear and I'm afraid of something.
40.	I'm tense and I wonder if I can handle the problem.
48.	The problem is beyond my control and failures make me angry.
56.	When someone treats me badly it is my fault.
59.	In some way I've brought about the difficult situation myself.
62.	I reproach myself for not having enough perseverance.
68.	I wonder if I'm doing the right thing and I think others are better at solving such problems.
73.	It seems to me that I've caused the problem.

Preoccupation with the problem

6.	I can't get any rest until I've solved the problem.
14.	I imagine different scenarios and I don't put off addressing the problem.
22.	I'm worried and I'm getting ready all the time.
30.	I don't think about my own needs but focus all my energy on solving the problem.
38.	I'm preparing all the time and I'd hate to fail people who are counting on me.
46.	I'm afraid that something will get out of hand and so I act immediately.
54.	It seems to me that if I don't deal with the issue immediately, something bad will happen.
63.	I'm impatient, but I follow my plan of action.
66.	I try to thoroughly understand the problem and I want to avoid letting somebody down.
70.	I'm oblivious to the world as I try to do as much as possible.
72.	I don't want to waste my chance and try to think it over carefully.
75.	I must do my best, so I take action without a moment's delay.

Hedonic disengagement

2.	I imagine that the problem doesn't exist and try to relax.
10.	I meet with friends; the problem can wait.
18.	I don't engage in solving the problem and I don't worry about it.
26.	I'm not looking for a solution and I think that things will go my way after all.
34.	My well-being is more important than any problem.
42.	I don't think about the difficult situation and I feel that nothing unpredictable is going to happen.
50.	I don't treat the problem all that seriously.
58.	I take the problem lightly.

What makes this monograph unique? First, the systematic and reliable reporting of the state of knowledge on coping with stress. [...] The Author's erudition in this respect is truly profound – the book can be an extremely valuable source of knowledge about coping styles for all readers, even those who are not only interested in the Author's model, but also look for systematized knowledge about the state of research in this field.
Second, the originality of the Author's model of coping styles. [...] I believe that it represents an original approach of very high theoretical importance. In addition, the effect in the form of the developed tool (i.e., the Coping Circumplex Inventory), enabling the measurement of coping styles with stress in accordance with the Coping Circumplex Model, clearly indicates that the Author's ambitious project ended with a research success (also in the sense that it is complete), constituting a valuable research inspiration for other authors.

prof. dr hab. Bogdan Zawadzki
University of Warsaw

When analyzing the content of the theoretical part, I consider the transition from categorical to dimensional thinking about coping strategies to be the most interesting theoretical idea. [...] It should be remembered that the dimensionality of coping is not a new idea. This idea has been present in the scientific discourse since the 1970s. However, until now, it has mainly referred to an understanding of a coping style based on the dimension of approach-avoidance of a stressful stimulus. What the Author did and demonstrated is to create and verify the idea that we can think dimensionally about coping strategies as well.

dr hab. Michał Ziarko
Adam Mickiewicz University Poznań

The Coping Circumplex Model proposed by Krzysztof Stanisławski is a new and very important contribution to the existing knowledge on the phenomenon of stress. The Author has succeeded in constructing a coping model that neatly organizes knowledge about coping with stress. Likewise, the Author's Coping Circumplex Inventory is an interesting new tool for the measurement of coping.

dr hab. Małgorzata Sobol
University of Warsaw

ISBN 978-83-8281-137-7

Wydawnictwo Naukowe
Uniwersytetu Kardynała Stefana Wyszyńskiego