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**An attempt to integrate coping constructs  
within the Coping Circumplex Model**

Próba integracji konstruktów radzenia sobie  
w Kołowym Modelu Radzenia Sobie ze Stresem

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## Abstract

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 as to the core coping constructs hinders the consolidation of knowledge. Moreover, the relationship between coping and posttraumatic growth has not been fully elucidated. Then, it is not surprising that the mechanisms underlying interventions aimed at coping improvement are still unclear. It is worth noting that also the influence of situational appraisal on the effectiveness of coping requires clarification.

In an attempt to address the above issues, the Coping Circumplex Model (CCM) has been developed and subjected to empirical verification in the presented dissertation. The main goal of the model was to enable broad integration of various coping constructs. To that end, it was necessary to supplement the set of coping categories distinguished in the literature (process, strategy and style) with a fourth category – coping mode.

The model is based on the assumption that in stressful situations individuals face two tasks: they need to solve the problem at hand and regulate their emotions. This is reflected in two corresponding dimensions, that is, Problem coping and Emotion coping. Both dimensions can be interpreted as bipolar, containing opposite pairs of constructs. The two poles of Problem coping are Problem solving and Problem avoidance, whereas those of Emotion coping are Positive emotional coping and Negative emotional coping. Importantly, these underlying dimensions define a space that can accommodate other coping categories. The model contains a total of eight coping styles forming a circumplex: Positive emotional



coping, Efficiency, Problem solving, Preoccupation with the problem, Negative emotional coping, Helplessness, Problem avoidance and Hedonic disengagement.

A new measure – the Coping Circumplex Inventory (CCI) – was developed in order to evaluate constructs identified in the CCM. The psychometric properties of four subsequent versions of the instrument were analyzed on four independent samples ( $N = 334$ ,  $N = 216$ ,  $N = 284$ ,  $N = 649$ ). The structural validity of the inventory was verified using a program for testing circumplex models, i.e., RANDALL, as well as multidimensional scaling (MDS), and additionally principal component analysis (PCA) and confirmatory factor analysis (CFA). External validity was assessed using instruments measuring coping (i.e., Coping Inventory for Stressful Situations, CISS; COPE Inventory) and mental health (Rosenberg Self-Esteem Scale, RSES; Snyder's Hope Scale, HS; General Health Questionnaire – 12, GHQ-12; Framingham Type A Scale, FTAS).

While the first two studies indicated a quasi-circumplex structure of coping styles, the two latter ones demonstrated a full circumplex. Twenty-four out of 29 external coping scales revealed meaningful associations with the CCM coping styles. All CISS categories demonstrated significant relationships with them. Task-oriented coping was linked to Problem solving and Efficiency, while emotion-oriented coping – to Helplessness. Avoidance-oriented coping was related to Problem avoidance and Hedonic disengagement. Distraction was associated with Problem avoidance, whereas social diversion was most similar to Hedonic disengagement.

It was found that 10 out of the 15 COPE strategies were significantly related to the CCM coping styles. Active coping and planning were correlated with Problem solving, while the suppression of competing activities was linked to Problem solving and Preoccupation with the problem. Positive reinterpretation and growth was located in the area of Efficiency. Humor was similar to Hedonic disengagement and Positive emotional coping,

whereas substance use was associated with Hedonic disengagement and Problem avoidance. Furthermore, focus on and venting of emotions was related to Negative emotional coping. Mental disengagement and denial were assigned to Problem avoidance, whereas behavioral disengagement was correlated with Problem avoidance and Helplessness. The location of five strategies within the CCM was problematic: turning to religion, acceptance, seeking social support for instrumental reasons, seeking social support for emotional reasons and restraint coping. Importantly, the restraint coping scale was proven to consist of two subscales representing opposite CCM styles (i.e., Problem solving and Problem avoidance). Interestingly, when scrutinized separately, both forms of restraint coping demonstrated meaningful relationships with the CCM.

All four mental health indicators used in the study were reliably located within the space of the CCM. Hope and self-esteem were linked to Efficiency, whereas proneness to mental health problems was associated with a preference for Helplessness and Negative emotional coping. The Type A behavior pattern was related to Negative emotional coping and Preoccupation with the problem. Furthermore, it was found that all mental health variables and almost all coping scales represented a sinusoidal pattern of relationships with the eight CCM coping styles.

Based on the obtained results, this dissertation presents the potential of the CCM to overcome some of the existing problems in stress psychology by: (a) providing a foundation for the integration of numerous coping constructs (including all CISS coping styles and most COPE strategies); (b) enabling the interpretation of results obtained by means of different coping measures, and thus facilitating the consolidation of findings and knowledge; (c) explaining the relationship between coping and posttraumatic growth as well as the mechanisms underlying psychological interventions (e.g., cognitive therapy, exposure therapy); (d) clarifying linkages between the effectiveness of coping strategies and situation

controllability. Moreover, the CCM can be helpful in understanding connections between coping and emotion regulation processes (e.g., cognitive reappraisal and expressive suppression).

*Keywords:* coping style, coping strategy, coping mode, Coping Circumplex Model, Problem coping, Emotion coping

## Streszczenie

W celu zrozumienia wpływu stresu na zdrowie, funkcjonowanie psychiczne i dobrostan niezbędne jest uwzględnienie konstruktów radzenia sobie. Niestety, istnieje niewielki konsensus co do struktury radzenia sobie – w literaturze wyróżniono przynajmniej 100 taksonomii radzenia sobie i ponad 400 różnych kategorii radzenia sobie. Brak porozumienia odnośnie podstawowych konstruktów radzenia sobie powoduje, że trudno jest zastosować te same kategorie w różnych narzędziach. Zatem ograniczony konsensus co do podstawowych konstruktów radzenia sobie utrudnia konsolidację wiedzy. Co więcej, istnieją problemy w wyjaśnianiu zależności między radzeniem sobie i rozwojem potraumatycznym. Nie jest zatem zaskakujące, że mechanizmy leżące u podstaw interwencji psychologicznych pozostają niejasne. Warto zauważyć, że również skuteczność radzenia sobie w zależności od oceny poznawczej sytuacji wymaga klaryfikacji.

Próba odpowiedzi na powyższe problemy jest skonstruowany w ramach niniejszej pracy, a następnie poddany empirycznej weryfikacji Kołowy Model Radzenia Sobie ze Stresem (KMRSS). Głównym celem modelu było umożliwienie szerokiej integracji różnorodnych konstruktów radzenia sobie ze stresem. Wymagało to uzupełnienia wyróżnionego w literaturze zestawu kategorii radzenia sobie (proces, strategia i styl) o czwartą kategorię – tryb radzenia sobie.

Model opiera się na założeniu, że osoby znajdujące się w sytuacjach stresowych muszą poradzić sobie z dwoma zadaniami: rozwiązać problem i wyregulować swoje emocje. Te zadania znajdują odzwierciedlenie w dwóch wymiarach, czyli problemowym radzeniu sobie i emocjonalnym radzeniu sobie. Oba wymiary można interpretować jako dwubiegunowe, zawierające parę przeciwstawnych konstruktów. Problemowe radzenie sobie obejmuje rozwiązywanie problemu i unikanie problemu, natomiast emocjonalne radzenie sobie

zawiera pozytywnie emocjonalne radzenie sobie i negatywnie emocjonalne radzenie sobie. Co ważne, te wymiary definiują przestrzeń dla innych kategorii radzenia sobie. Model obejmuje osiem stylów radzenia sobie, tworzących model kołowy: pozytywnie emocjonalne radzenie sobie, efektywność, rozwiązywanie problemu, zaabsorbowanie problemem, negatywnie emocjonalne radzenie sobie, bezradność, unikanie problemu i hedoniczne oderwanie.

W celu dokonania pomiaru konstruktów wyróżnionych w KMRSS wprowadzono nowe narzędzie – Kołowy Inwentarz Radzenia Sobie ze Stresem (KIRSS). Właściwości czterech kolejnych wersji inwentarza analizowano w czterech niezależnych próbach ( $N = 334$ ,  $N = 216$ ,  $N = 284$ ,  $N = 649$ ). Trafność strukturalną kwestionariusza, a tym samym weryfikację struktury modelu przeprowadzono przy pomocy programu do testowania modeli kołowych RANDALL, skalowania wielowymiarowego (MDS, ang. *multidimensional scaling*), a także analizy głównych składowych (PCA, ang. *principal component analysis*) i confirmacyjnej analizy czynnikowej (CFA, ang. *confirmatory factor analysis*). Trafność zewnętrzna została oszacowana z zastosowaniem kwestionariuszy mierzących radzenie sobie ze stresem (tj. *Kwestionariusza radzenia sobie w sytuacjach stresowych CISS*, *Wielowymiarowego inwentarza do pomiaru radzenia sobie ze stresem COPE*) oraz zdrowie psychiczne (*Skali samooceny Rosenberga*, *Kwestionariusza nadziei na sukces*, *Oceny zdrowia psychicznego – 12* oraz *Skali typu A-Framingham*).

Podczas gdy dwa pierwsze badania wykazały strukturę quasi-kołową stylów radzenia sobie, dwa następne ujawniły istnienie pełnej struktury kołowej. Stwierdzono, że 24 spośród 29 skal mierzących radzenie sobie z innych modeli posiada znaczące związki ze stylami z KMRSS. Wszystkie kategorie z *CISS* wykazały znaczące zależności z konstruktami KMRSS. Styl skoncentrowany na zadaniu był powiązany z rozwiązywaniem problemu i efektywnością, podczas gdy styl skoncentrowany na emocjach był najbardziej podobny do bezradności.

Styl skoncentrowany na unikaniu korelował z unikaniem problemu i hedonicznym oderwaniem. Angażowanie się w czynności zastępcze było powiązane z unikaniem problemu, natomiast poszukiwanie kontaktów towarzyskich było najbardziej podobne do hedonicznego oderwania.

Stwierdzono, że dziesięć z 15 strategii z *COPE* było istotnie powiązanych ze stylami KMRSS. Aktywne radzenie sobie i planowanie były skorelowane z rozwiązywaniem problemu, a unikanie konkurencyjnych działań zostało powiązane z rozwiązywaniem problemu i zaabsorbowaniem problemem. Pozytywne przewartościowanie i rozwój zostało ulokowane w efektywności. Poczucie humoru było podobne do hedonicznego oderwania i pozytywnie emocjonalnego radzenia sobie, podczas gdy zażywanie alkoholu lub innych środków psychoaktywnych było powiązane z hedonicznym oderwaniem i unikaniem problemu. Stwierdzono, że koncentracja na emocjach i ich wyładowanie korelowała z negatywnie emocjonalnym radzeniem sobie. Odwracanie uwagi i zaprzeczanie wykazywały podobieństwo do unikania problemu, a zaprzestanie działań było powiązane z unikaniem problemu i bezradnością. Ulokowanie pięciu strategii z *COPE* w KMRSS było problematyczne: zwrot ku religii, akceptacja, poszukiwanie wsparcia instrumentalnego, poszukiwanie wsparcia emocjonalnego, powstrzymanie się od działania. Co ważne, udowodniono, że skala powstrzymanie się od działania rozpada się na dwie podskale, które reprezentują przeciwstawne style KMRSS (tj. rozwiązywanie problemu i unikanie problemu). Ciekawe, że obie formy radzenia sobie analizowane oddzielnie wykazywały znaczące zależności z KMRSS.

Wszystkie cztery wskaźniki zdrowia psychicznego zostały w sposób teoretycznie i statystycznie spójny ulokowane w przestrzeni KMRSS. Nadzieja na sukces i samoocena były powiązane z efektywnością, podczas gdy podatność na problemy ze zdrowiem psychicznym korelowała z bezradnością i negatywnie emocjonalnym radzeniem sobie. Wzór zachowania

typu A wykazywał zależność z negatywnie emocjonalnym radzeniem sobie i zaabsorbowaniem problemem. Ponadto stwierdzono, że wszystkie wskaźniki zdrowia psychicznego i prawie wszystkie skale radzenia sobie posiadały sinusoidalne zależności z ośmioma stylami radzenia sobie z KMRSS.

Na podstawie uzyskanych wyników praca przedstawia potencjał KMRSS do przezwyciężenia części problemów psychologii stresu poprzez: (a) stworzenie możliwości integracji rozmaitych konstruktów radzenia sobie (m.in. wszystkich stylów radzenia sobie z *CISS* i większości strategii radzenia sobie z *COPE*); (b) umożliwienie interpretacji wyników uzyskiwanych za pomocą różnych narzędzi radzenia sobie, ułatwiając w ten sposób konsolidację wiedzy; (c) wyjaśnianie zależności między radzeniem sobie a rozwojem potraumatycznym oraz mechanizmami interwencji psychologicznych (np. terapią poznawczą i terapią ekspozycyjną); (d) klaryfikację relacji między skutecznością stosowanych strategii radzenia sobie a kontrolowalnością sytuacji. Ponadto KMRSS może być pomocny w zrozumieniu związków między radzeniem sobie a procesami regulacji emocji (np. poznawczą reinterpretacją i tłumieniem ekspresji emocji).

*Słowa kluczowe:* styl radzenia sobie, strategia radzenia sobie, tryb radzenia sobie, Kołowy Model Radzenia Sobie ze Stresem, problemowe radzenie sobie, emocjonalne radzenie sobie

“... 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)



## 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, Janicki-Deverts, & Miller, 2007; Dong et al., 2004; Dube et al., 2009; Kivimäki et al., 2006; Mohr, Kart, Julian, Cox, & Pelletier, 2004). However, it appears that the effects of stress on health and psychological well-being are mediated by coping (Folkman & Lazarus, 1988a; Littleton, Horsley, John, & Nelson, 2007; Pargament, Koenig, Tarakeshwar, & Hahn, 2004; Penley, Tomaka, & Wiebe, 2002; Prati & Pietrantonio, 2009).

Having said that, there is a lack of consensus among researchers regarding the structure of coping (Skinner, Edge, Altman, & Sherwood, 2003). Moreover, the application of the same coping categories using different questionnaires and samples is problematic (cf. Compas,

Connor-Smith, Saltzman, Thomsen, & Wadsworth, 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

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, Scheier, & Fulford, 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, Kanner and Folkman 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, Mancuso, Branigan, & Tugade, 2000), and can stimulate the immune function (Marsland, Pressman, & Cohen, 2007; Steptoe, Dockray, & Wardle, 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, Tugade, Waugh, & Larkin, 2003; Gloria, Faulk, & Steinhardt, 2013; Ong, Bergeman, Bisconti, & Wallace, 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.

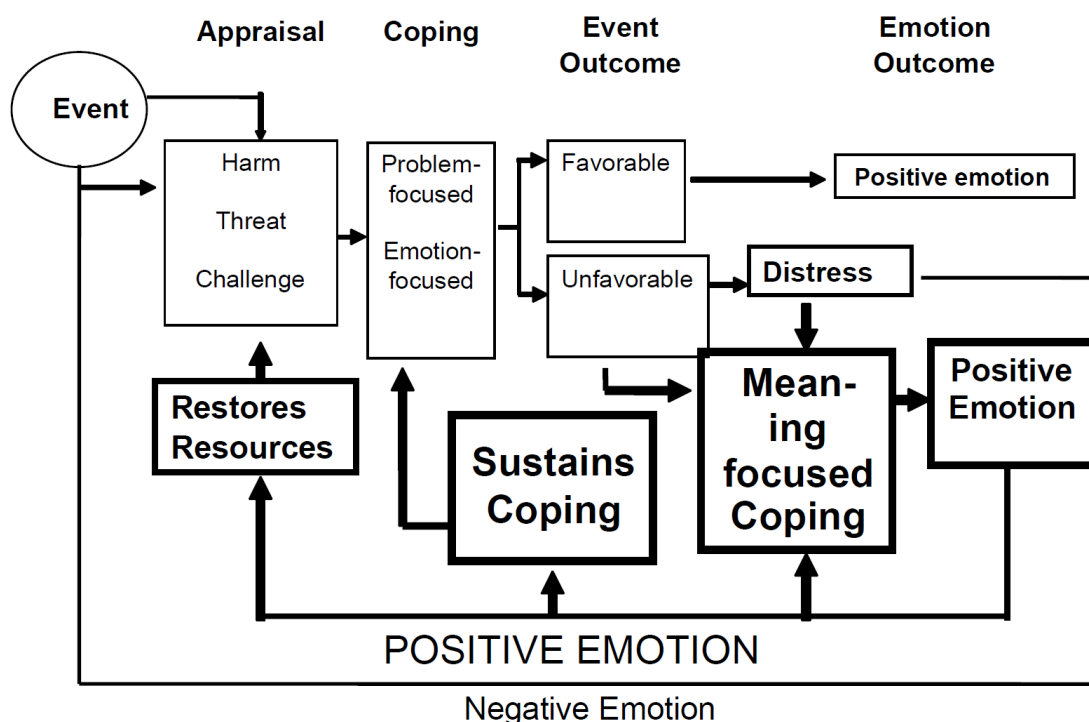


Figure 1. The revised transactional model of stress and coping.

The bolded elements were added by Folkman (1997, 2008) to the classical model.

Source: 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, Fernandez-Castro and Edo (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 conservation of resources theory (2001) contains two major principles: the primacy of resource loss, according to which “resource loss is disproportionately 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, Neveu, Paustian-Underdahl, & Westman, 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, Rieckmann, & Schwarzer, 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, Jacob, Wagner, & Baiden, 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<sup>1</sup>

#### 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).

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, Scheier, & Weintraub, 1989; Endler & Parker, 1990a; Skinner et al., 2003). Moreover, Anna Freud suggested that some defense mechanisms could be more maladaptive than others, which has

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<sup>1</sup> “Functional Models of Coping” and “Problems in Coping Research” include small and slightly modified parts of text from Stanisławski (2019).



also inspired many authors to investigate the organization of defenses (e.g., Bond, Gardiner, Christian, & Sigel, 1983; Haan, 1963; Semrad, Grinspoon, & Fienberg, 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 (Poplestone & 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; 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, Schwartz, Simon, & Radcliffe, 2007; Dunkley & Blankstein, 2000; Schröder, Schwarzer, & Konertz, 1998; Weiss, Duke, & Sullivan, 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).

Table 1  
*Coping Models Included in the Overview*

Coping models and their basic categories	Authors
<b>Functional models</b>	
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)
<b>Topological models</b>	
Approach and avoidance coping	Roth & Cohen (1986)
<b>Action models</b>	
Primary, secondary and relinquished control	Band & Weisz (1988)
Assimilative and accommodative coping	Brandtstädter & Renner (1990)
<b>Models with blended categories</b>	
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, Holroyd, Reynolds, & Wigal (1989)
Approach vs. avoidance Emotional equilibrium vs. emotional disequilibrium	Gol & Cook (2004)
<b>Models with a temporal aspect</b>	
Proactive coping	Aspinwall & Taylor (1997)
Reactive, anticipatory, preventive and proactive coping	Schwarzer (2001)
<b>Models of social forms of coping</b>	
Communal coping	Lyons, Mickelson, Sullivan, & Coyne (1998)
Dyadic coping	Bodenmann (1997)

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).

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).

Solutions with different numbers of WCQ factors have been extracted: four (Chan, 1994; Van Liew, Santoro, Edwards, Kang, & Cronan, 2016), five (Sørli & Sexton, 2001), seven (Mishel & Sorenson, 1993) and eight (Folkman & Lazarus, 1985; Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986). Folkman, Lazarus, Dunkel-Schetter 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, Lazarus, Dunkel-Schetter et al., 1986).

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, Lazarus, Dunkel-Schetter et al. (1986, p. 995).

***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, 2013). 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 strategies 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” strategies (focus on and venting of emotions, behavioral disengagement, mental disengagement) (Carver et al., 1989).

To measure these 13 coping strategies, Carver et al. (1989) developed the COPE Inventory, 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).

Table 3  
*Definitions of COPE Strategies*

Coping category	Definition
<b>Problem-focused coping</b>	
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
<b>Emotion-focused coping</b>	
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 <sup>a</sup>
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
<b>"Less useful"</b>	
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
<b>Two additional scales</b>	
Humor	Dealing with negative emotions through humor <sup>a</sup>
Substance use	Use of alcohol or drugs to disengage from a stressor or feel better <sup>a</sup>

*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 <sup>a</sup>).

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.

*Conclusion and critique.* The COPE is the most widely used coping inventory in academic journals (Kato, 2013). 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, Kiecolt-Glaser, & Glaser, 2001), four (e.g., Carver et al., 1989) and five (e.g., Deisinger, Cassisi, & Whitaker, 1996; Sica, Novara, Dorz, & Sanavio, 1997). The main advantages of the COPE seem to be a wide range of coping strategies included, the existence of two versions of the questionnaire (dispositional and situational) and utility proven in many studies (e.g., Fontaine, Manstead, & Wagner, 1993; Maltby & Day, 2000; Scheier, Carver, & Bridges, 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, Kantor and Parker (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, Jaworowska, Wrześniewski, & Szczepaniak, 2005), Icelandic (Rafnsson, Smari, Windle, Mears, & Endler, 2006), Turkish (Boysan, 2012) and Japanese (Watanabe, Yokoyama, & Furukawa, 2015). Moreover, it seems that CISS styles have a substantial genetic component (Kozak, Strelau, & Miles, 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, Kang, & Miesner, 2010; Finset, Steine, Haugli, Steen, & Laerum, 2002; Herman-Stahl, Stemmler, & Petersen, 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, Dennig, & Weisz, 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, McCabe and Dennig (1994) applied the model of primary and secondary control (Rothbaum, Weisz, & Snyder, 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, Secondary and Relinquished Control Coping Strategies*

Coping category	Definition
<b>Primary control strategies</b>	
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)
<b>Secondary control strategies</b>	
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)
<b>Relinquished control</b>	
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, Compas, Wadsworth, Thomsen, & Saltzman 2000; Hardy, Power, & Jaedicke, 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  $\geq .80$ ) 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, Saile, & Nilges, 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, Smith, Garber and Van Slyke (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).

***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.



Table 5

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

Higher coping category	Lower coping categories
<b>Voluntary responses to stress</b>	
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
<b>Involuntary responses to stress</b>	
Involuntary engagement	Rumination, intrusive thoughts, physiological arousal, emotional arousal, impulsive action
Involuntary disengagement	Emotional numbing, cognitive interference, inaction, escape

**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.

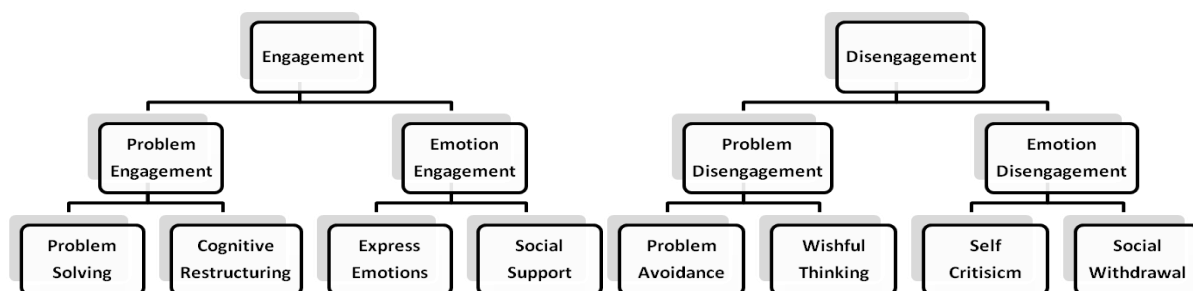


Figure 2. Hierarchical model of coping by Tobin et al. (1989).

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, Dumitrache, Cordon-Pozo, & Rubio-Herrera, 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).

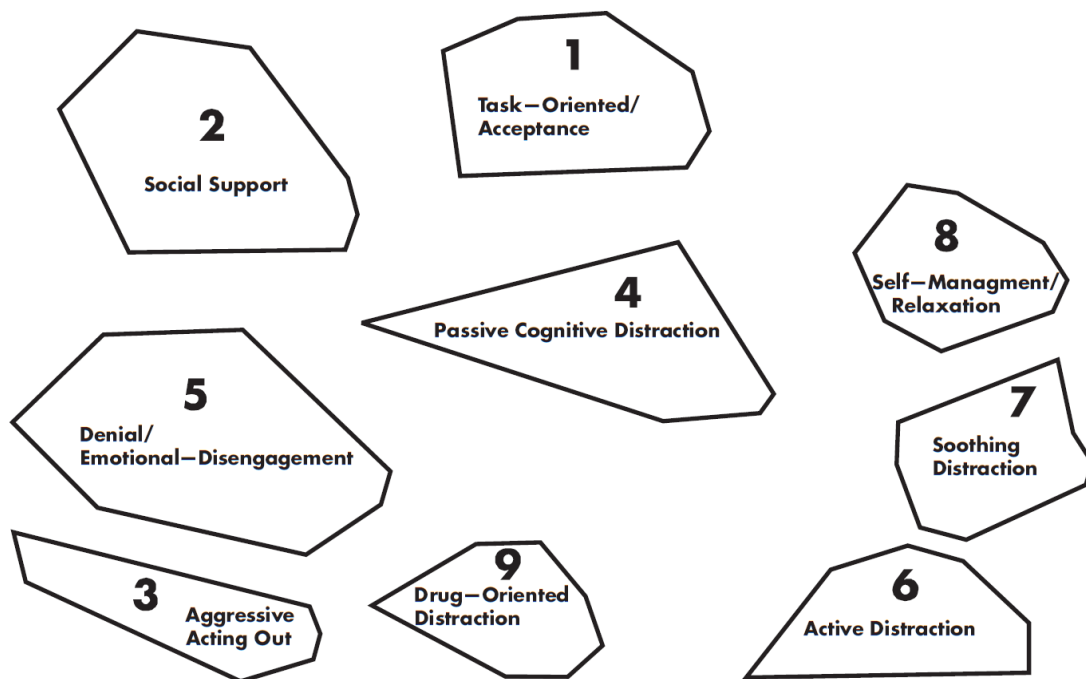


Figure 3. Model of coping by Gol and Cook (2004).

Source: 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, Schwarzer, Jakubiec, Fiksenbaum, & Taubert, 1999). The items forming this measure were derived from an earlier version of the PCI (Greenglass, 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  $\alpha >.70$ ) (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, Hu, & Zhang, 2010; Greenglass & Fiksenbaum, 2009; Ouwehand, De Ridder, & Bensing, 2006; Straud,



McNaughton-Cassill, & Fuhrman, 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, Pék, Papp, & Greenglass, 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, Meegan, & Deviney, 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, Alvarez, Ku, Russell, & Bonett, 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, Jackson, Hilpert, & Bodenmann, 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, Gorall, & Tiesel, 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, Affleck, Armeli, & Carney, 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, Suls, & Leventhal, 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, Lazarus, Dunkel-Schetter 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, Lazarus, Dunkel-Schetter 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, Danoff-Burg, Cameron, & Ellis, 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, DeLongis, Folkman and Gruen (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, Parsa, & Austenfeld, 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, Wu, An, & Li, 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, Weintraub, & Carver, 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, Nolen-Hoeksema, & Schweizer, 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, Jang, & Stein, 2006; McWilliams, Cox, & Enns, 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 strategies 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 strategies. In addition, different authors may assign the same coping strategies 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 strategies 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, Litz, Hoge, & Marmar, 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<sup>2</sup>

#### 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). 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:

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<sup>2</sup> 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.”

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, Lazarus, Dunkel-Schetter 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 face two major tasks: they need to solve the problem at hand and regulate their emotions (cf. Lazarus & Folkman, 1984). The two tasks correspond to two dimensions: Problem coping (solving or avoiding the problem) and Emotion coping (regulating one’s emotions under stress). 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).

Problem coping and Emotion coping may be connected to the two 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, 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, Antonak, and Gerhardt (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, Wiese, Vaidya, & Tellegen, 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; Yik, Russell, & Steiger, 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 (cf. Carver, 1997; Carver et al., 1989) 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 aggression (i.e., dealing with problems by aggressive reactions) and emotion-focused aggression (i.e., reducing tension by aggressive behaviors); they also identified other strategies: 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 aggression and crying may be interpreted as two different coping modes, emotion-focused aggression and emotion-focused crying are examples of negative emotional coping strategies, while problem-focused aggression and problem-focused crying are strategies 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, Koenig, and Perez (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, Lazarus, Dunkel-Schetter 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, Blasco, Fernandez-Castro, & Viladrich, 2007; Lowery, Jacobsen, & DuCette, 1993; Taylor, Lichtman, & Wood, 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 Carver et al. (1989), coping strategies may form a coping style understood as a “preferred set of coping strategies that remains relatively fixed across time and circumstances” (Carver et al., 1989, p. 270). 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 (Carver et al., 1989; Endler & Parker, 1990a), the coping style as defined above has broad content and is relatively stable across different situations. As in the proposal of Carver et al. (1989), 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 (Carver et al., 1989; Endler & Parker, 1990a) 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 <sup>1</sup>
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. <sup>1</sup> 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 innumerable 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, 1985) 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, Pincus, Conroy, & Hilsenroth, 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, Wiggins, & Pincus, 1990), Big Five personality traits (Hofstee, de Raad, & Goldberg, 1992), personality metatraits (Strus & Cieciuch, 2017; Strus, Cieciuch, & Rowiński 2014), vocational interests (Tracey & Rounds, 1996), and identity formation modes (Cieciuch & Topolewska, 2016; Topolewska & Cieciuch, 2016).

**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 face two tasks – solving the problem and 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: Efficiency vs. Helplessness 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–), Efficiency (P+ E+), Helplessness (P– E–), Preoccupation with the problem (P+ E–) and Hedonic disengagement (P– E+). The CCM is shown in Figure 4.

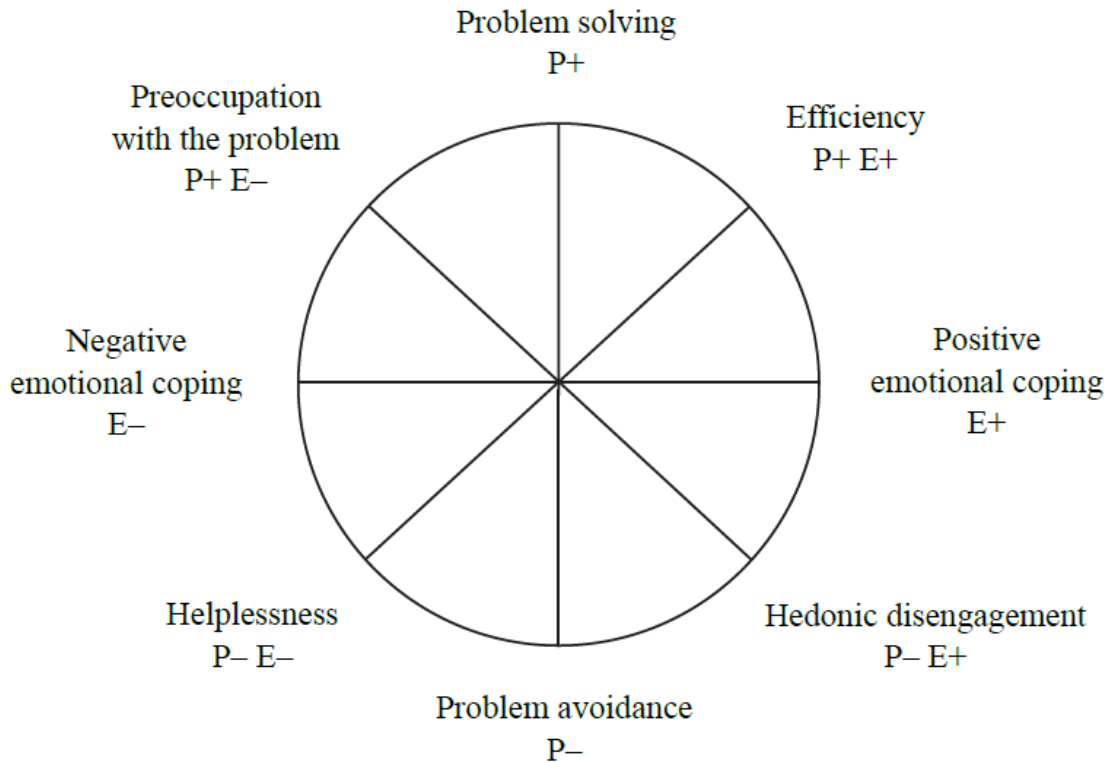


Figure 4. The Coping Circumplex Model.

### 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.

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, Lazarus, Dunkel-Schetter 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, Bormann, Cropanzano, and James (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). Therefore, 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 strategies, 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, Dilmac, & Hamarta, 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, Carraro, & Miranda, 2012; Matthews, Campbell, & Falconer, 2001; Struthers, Perry, & Menec, 2000) as well as academic goal progress (Gaudreau et al., 2012; Saklofske, Austin, Mastoras,

Beaton, & Osborne, 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, Kao, Siu, & Lu, 2010). Among COPE strategies, behavioral disengagement and active coping reveal the strongest positive and negative correlations with procrastination, respectively (Sirois & Kitner, 2015).

### **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, Martin, & Olinger, 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, Pietrantonio, & Cicognani, 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, Molnar, & Hirsch, 2015) and situational positive reinterpretation and growth (Neff, Hseih, & Dejithirat, 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, McKenzie, & Belanger, 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, Lazarus, Dunkel-Schetter 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, Flett, Nash, McGregor, & Hewitt, 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 (Vălenaș 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, Hofmann, & Litz, 2004). More generally, negative affect is associated with self-criticism (Compas et al., 1999), rumination (Kvillemo & Bränström, 2014; Mor & Winqvist, 2002), focus on and venting of emotions (Kato, 2013), 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, Volkmann, Breen, & Han, 2007; Koch, Forgas,

& Matovic, 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, Huang, Clark, & Helgeson, 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, Leiberg, Lamm, & Singer, 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, Koval, Verduyn, Lim, & Kuppens, 2013; Brans & Verduyn, 2014; Bushman, 2002; Kraaij, Garnefski, & Schroevers, 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 and Negative emotional coping represent opposite, but distinct, constructs containing additional psychological qualities.

## **Efficiency vs. Helplessness**

Some forms of coping focus both on problems and 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 Efficiency. The opposite pole, combining Problem avoidance with Negative emotional coping, corresponds to Helplessness. Efficiency vs. Helplessness can be related to the personality dimension of ego-resiliency vs. ego-brittleness (Block, Block, & Gjerde, 1986; Block & Kremen, 1996; cf. trait resilience, Fletcher & Sarkar, 2013).

**Definition of Efficiency.** Efficiency 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 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 Efficiency is actually taking action to solve the problem.

The coping strategies subsumed under Efficiency 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). Smeeckens, Riksen-Walraven and Van Bakel (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 Efficiency 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 Efficiency and Problem solving, whereas positive reinterpretation evinces Positive emotional coping. 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, Richards, Griffiths, & Main, 2002) and dispositional (Lyne & Roger, 2000; Stowell et al., 2001) versions of COPE scales corroborated the existence of a construct similar to Efficiency. 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 Efficiency is proactive coping (Schwarzer, 2001). Both efficient copers 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 efficient copers 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 Efficiency.

**Definition of Helplessness.** In the CCM, Helplessness is a configuration of Problem avoidance and Negative emotional coping. Helplessness 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 Helplessness 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). Helplessness 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 persevere or fall apart under stress” (Block et al., 1986, p. 830).

Helplessness 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 Helplessness 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 Helplessness. 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).

Helplessness 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, Helplessness 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, Helplessness 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, Siegert, Hay-Smith, & Surgenor, 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 Helplessness (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 Efficiency and Helplessness.

**Theoretical relationships of Efficiency and Helplessness with other psychological constructs.** Efficiency and Helplessness 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 Efficiency and Helplessness to external variables. Trait resilience has been shown to be positively correlated with mindfulness (Mantzios, Wilson & Giannou, 2015), emotion regulation (i.e., trait reappraisal; Waugh, Fredrickson, & Taylor, 2008), hope, and self-esteem (Mak, Ng, & Wong, 2011), and negatively with mental health problems (Hu, Zhang, & Wang, 2015). Similarly to ego-resiliency vs. ego-brittleness,

Efficiency vs. Helplessness are thought to be related to mindfulness, emotion regulation, hope, self-esteem and mental health problems. Furthermore, Efficiency and Helplessness 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, Sauer, & Walach, 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 Efficiency, while orientation to experience is similar to Efficiency and Positive emotional coping. Thus, overall mindfulness is expected to be associated with Efficiency.

Mindfulness is related both to coping with a specific event (Weinstein, Brown, & Ryan, 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, Horan, Turner, & Weber, 2016). In conclusion, a combination

of coping constructs similar to Efficiency and Helplessness 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, John, & Gross, 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 Efficiency.

*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, Kuhl, Jostmann, & Vohs, 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 consciously 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, Goschke, & Kuhl, 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/Helplessness vs. Problem solving/Efficiency, whereas preoccupation vs. disengagement has some commonalities with Negative emotional coping/Helplessness vs. Positive emotional coping/Efficiency. It should be noted that Problem solving/Efficiency vs. Problem avoidance/Helplessness can be linked to intention memory, while Positive emotional coping/Efficiency vs. Negative emotional coping/Helplessness seems to be related to the extension memory function. Generally, action vs. state orientation is similar to Efficiency vs. Helplessness. The flexibility of Efficiency requires good access to extension and intention memory, while Helplessness represents inhibited access to both.

***Hope and hopelessness.*** Both Efficiency and Helplessness 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, Weissman, Lester, & Trexler, 1974). Individuals scoring high on hopelessness prefer greater use of emotion-focused disengagement and lower use of problem-focused engagement (Taft, Resick, Panuzio, Vogt, & Mechanic, 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, Sabourin, & Spiby, 2004; Smith, Wethington, & Zhan, 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 Helplessness. 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 Helplessness predicts mental health problems.

In Kato's meta-analysis (2013), eight COPE strategies 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 strategies excluding restraint coping reflects the Efficiency–Helplessness 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, Cooper, Bradley, Shulman, & Livingston, 2012). It seems that the Efficiency–Helplessness 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, 2013; Leandro & Castillo, 2010; Li et al., 2012).

**Conclusion.** Efficiency vs. Helplessness 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). Efficiency is expected to be negatively associated with mental health problems, while Helplessness demonstrates a positive relationship with them (Kato, 2013; 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 preoccupation (a form of action orientation; Kuhl, 1992).



## **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 aggression and problem-focused crying, which are 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.

**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.

Preoccupation with the problem is somewhat similar to confrontive coping, which is more often used by individuals perceiving the situation as a threat resulting in financial difficulties. This way of coping is employed more frequently if the people concerned believe they are capable of changing the situation (Folkman, Lazarus, Dunkel-Schetter et al., 1986). 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 depression (Kato, 2013).

Similarly, confrontive coping is correlated with distress (Folkman, Lazarus, Gruen, & DeLongis, 1986) and negative emotions (Folkman & Lazarus, 1988a). Blankstein, Flett, and Watson (1992) found a relationship between confrontive coping and test anxiety. Analogously, the group of coping strategies reflecting Preoccupation with the problem (i.e., logical analysis and venting of unpleasant emotions) is associated with cognitive and somatic competitive state anxiety in athletes during sports contests (Gaudreau & Blondin, 2002). Athletes who perceive their anxiety as facilitative tend to suppress competing activities more than those who interpret it as debilitating (Ntoumanis & Biddle, 2000). Thus, Preoccupation with the problem may encompass both functional and maladaptive elements.

The configuration of coping constructs corresponding to Preoccupation with the problem seems to be related to insight in psychosis (Cooke et al., 2007), perfectionism (Flett, Druckman, Hewitt, & Wekerle, 2012; Gong, Fletcher, & Bolin, 2015), and the type A behavior pattern (TABP; Carver et al., 1989). Spence, Helmreich, and Pred (1987) demonstrated that the TABP contained two relatively independent components: achievement striving (cf. competitive drive; Houston, Smith, & Zurawski, 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, Therrien, & Carroll, 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/Efficiency, while impatience irritability seems to be related to Negative emotional coping/Helplessness.

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, Dalgard, Holme, Røysamb, & Håheim, 2008; Suls & Wan, 1989) and perfectionism (Flett, Hewitt, Blankstein, & Dynin, 1994).

The two components of perfectionism are perfectionistic concerns and perfectionistic strivings. The latter reflect self-oriented perfectionism and personal standards (Frost, Heimberg, Holt, Mattia, & Neubauer, 1993; Gotwals, Stoeber, Dunn, & Stoll, 2012). Perfectionistic strivings are similar to Preoccupation with the problem and are positively associated with problem-focused coping (Dunkley, Blankstein, Halsall, Williams, & Winkworth, 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.

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.

**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 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, Turner, Smith, & Holman, 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, 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, 2013; 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, Sęk, & Ziarko, 2011; Sęk, Kaczmarek, Ziarko, Pietrzykowska, & Lewicka, 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.

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, Grinshpoon, Sasson, & Levav, 2004). In some studies social diversion was not correlated with distress (Brands, Köhler, Stapert, Wade, & Van Heugten, 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).

Coping responses similar to Hedonic disengagement are also related to some dysfunctional tendencies (Huflejt-Łukasik & Czarnota-Bojarska, 2006; Ogińska & Ogińska-Bruchal, 2014). Individuals with a strong tendency for Hedonic disengagement may be expected to have a low ability to adjust their behaviors (e.g., auto-presentation) to signals from their environment, i.e., they exhibit low self-monitoring (Snyder, 1974). Indeed, self-monitoring has a negative relationship with social diversion (Huflejt-Łukasik & Czarnota-Bojarska, 2006). Furthermore, social diversion has been shown to be connected with susceptibility to seasonal fluctuations of mood, energy levels, and sleep length in a nonclinical sample (Ogińska & Ogińska-Bruchal, 2014). It seems that Hedonic disengagement contains a potential for both adaptive and maladaptive aspects.

### **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 (see Table 8). The goals of the remaining coping styles include combinations of the above four goals. The goal of Efficiency involves eliciting positive expectations about the ability to solve the problem at hand and solving the problem. The goal of Helplessness is opposite – avoiding a problem that is preconceived as unsolvable. The negative expectations as to solving the problem elicited by helplessness 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).

Table 8  
*CCM Coping Styles and the Corresponding Coping Goals*

Coping style	Coping goal
Positive emotional coping	Calming down
Efficiency	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
Helplessness	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

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.

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 Helplessness (palliative coping; Gruszczyńska, 2013). It may be the case that three coping styles (i.e., Helplessness, 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.



## **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, Brandstädter 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, Lazarus, Dunkel-Schetter 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, Lazarus, Dunkel-Schetter et al. (1986) <sup>a</sup>	Carver et al. (1989) <sup>a</sup>	Endler & Parker (1990a)	Roth & Cohen (1986)	Band & Weisz (1988)	Brandtstädter & Renner (1990)	Connor-Smith et al. (2000)	Tobin et al. (1989)	Gol & Cook (2004) <sup>a</sup>	Schwarzer (2001)
Positive emotional coping		Humor					Secondary control engagement			
Efficiency	Positive reappraisal	Positive reinterpretation and growth				Accommodative coping		Problem engagement		Proactive coping
Problem solving	Planful problem-solving	Active coping Planning	Task-oriented coping	Approach		Assimilative coping	Primary control engagement		Task-oriented/acceptance	Preventive coping
Preoccupation with the problem		Suppression of competing activities								
Negative emotional coping	Confrontive coping	Focus on and venting of emotions			Secondary control			Emotion engagement	Aggressive acting out	
	Accepting responsibility						Involuntary engagement	Emotion disengagement	Drug-oriented distraction	
Helplessness			Emotion-oriented coping	Avoidance			Disengagement coping			Denial/emotional-disengagement
	Escape-avoidance	Mental disengagement	Distraction		Primary control		Involuntary disengagement	Problem disengagement		

Problem avoidance		Behavioral disengagement Denial		Secondary control Relinquished control		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 color when they are assigned to coping styles that graphically do not appear adjacent to each other.

<sup>a</sup> No counterparts within the CCM: Folkman, Lazarus, Dunkel-Schetter et al. (1986): self-controlling and 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, Lazarus, Dunkel-Schetter et al. (1986).* Six out of the eight coping strategies from the model by Folkman, Lazarus, Dunkel-Schetter et al. (1986) can be located within the CCM. Three categories are located between two CCM styles each: confrontive coping is related to Preoccupation with the problem and Negative emotional coping, escape–avoidance to Problem avoidance and Helplessness, and distancing to Hedonic disengagement and Problem avoidance. Self-controlling and seeking social support have no equivalents within the CCM. Generally, four WCQ factors correspond to the poles of two dimensions: Problem solving vs. Problem avoidance, and Preoccupation with the problem vs. Hedonic disengagement. The other two factors are associated with one pole of the remaining two CCM dimensions, that is, Negative emotional coping and Efficiency, respectively.

*Coping dimensions derived theoretically by Carver et al. (1989).* Ten out of the 15 COPE strategies 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 strategies (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 strategies 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 Efficiency. 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 – Efficiency, 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 Efficiency, 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 Helplessness, 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, Levy, & Carpenter, 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 Efficiency. Avoidance coping is related to Helplessness 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, 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, Van Diemen, & Van Nes, 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 (Łuszczynska, Mohamed, & Schwarzer, 2005). The first predicts personal growth and the latter is correlated with the acceptance of life imperfections (Łuszczynska 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 Efficiency, whereas accommodative coping resembles Efficiency 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 Efficiency.

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 Efficiency (“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 Helplessness. 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 Helplessness.

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 Helplessness. 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 Helplessness.

Involuntary disengagement responses are linked to Problem avoidance and Helplessness: 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 Efficiency. Secondary control engagement coping refers to Positive emotional coping and Hedonic disengagement. Disengagement coping and involuntary disengagement are linked to Problem avoidance and Helplessness, whereas involuntary engagement resembles Negative emotional coping and Helplessness. Three RSQ

categories, i.e. disengagement coping, involuntary engagement, and involuntary disengagement, are related to Helplessness. 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, Raviv, Compas, & Connor-Smith, 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 Efficiency. 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 Helplessness, 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/Helplessness (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, Coplan, & Bowker, 2009). Thus, it might be presumed that social withdrawal reflects Helplessness. In conclusion, emotion disengagement resembles Helplessness and Negative emotional

coping, emotion engagement – Negative emotional coping, problem disengagement – Problem avoidance, and problem engagement – Efficiency.

*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 Efficiency, 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 Helplessness. Also drug-oriented distraction with sample items such as “Drank” or “Cried” evinces Helplessness. 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 (Helplessness, 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 Efficiency, 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: two out of the eight strategies from the proposal of Folkman, Lazarus, Dunkel-Schetter et al. (1986), five out of the 15 strategies 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 emotion-oriented coping (Cohan et al., 2006; Endler & Parker, 1990b; Endler & Parker, 1994; Strelau et al., 2005), emotional coping (Matud, 2004), and focus on and venting of emotions (Carver et al., 1989; Kallasmaa & Pulver, 2000; Torkelson & Muhonen, 2004). Men have been reported to show a higher preference for some problem-focused strategies, e.g., planning (Torkelson & Muhonen, 2004) or suppression of competing activities (Kallasmaa & Pulver, 2000), task-oriented coping (Cohan et al., 2006), as well as rational coping (similar to Problem solving; Matud, 2004), but some 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 strategies, e.g., denial and mental disengagement (Kallasmaa & Pulver, 2000), avoidance-oriented coping (Cohan et al., 2006; Endler & Parker, 1990b; Endler & Parker, 1994; Howerton & Gundy, 2009; Watanabe et al., 2015), and avoidance coping (Matud, 2004), while in other works these effects have been observed only for individual age groups (Strelau et al., 2005).

In many studies women appeared to be more stressed than men (Tamres, Janicki, & Helgeson, 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, Smith, and Dodge (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 Helplessness, i.e., emotion-oriented coping (Cohan et al., 2006; Endler & Parker, 1990b; Endler & Parker, 1994; Strelau et al., 2005) and to Problem avoidance, i.e., avoidance-oriented coping (Cohan et al., 2006; Endler & Parker, 1990b; Endler & Parker, 1994; Howerton & Gundy, 2009).

### **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 (Austefeld & 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 Helplessness, 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, Kirk, Cameron, & Danoff-Burg, 2000). Similarly, relationships between emotional approach coping and problem-focused coping have been found using the daily diary method (Park,

Armeli, & Tennen, 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 Helplessness (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 Helplessness 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

### Current Study

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, Helplessness and Problem avoidance 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 Helplessness.

- 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 Efficiency.

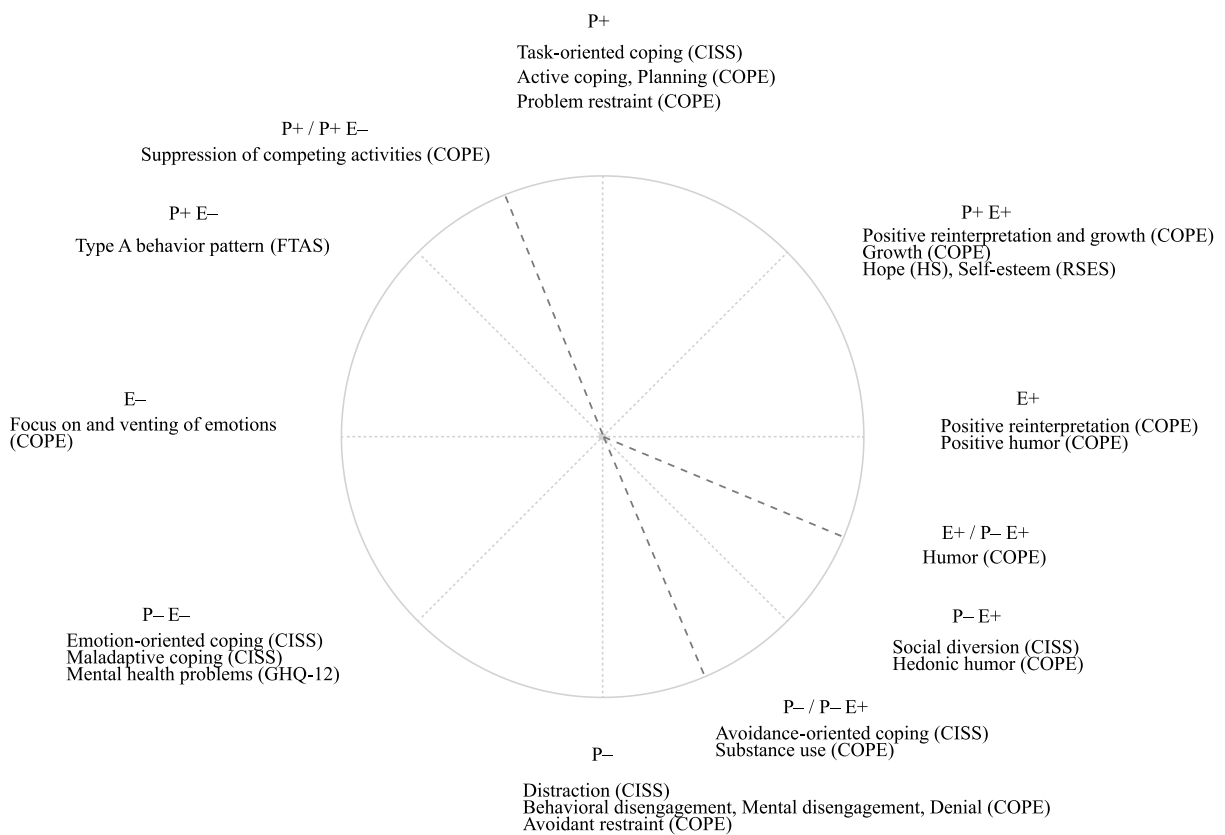
As it was explained in the section “Concepts of Coping Strategy and Coping Mode”, a coping strategy is a response to stress associated with a particular function, while a coping mode is a set of coping strategies including similar responses to stress, but associated with different functions. For example, 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 Efficiency.
  - b. Positive reinterpretation and positive humor are located close to Positive emotional coping.
  - c. Hedonic humor is located close to Hedonic disengagement.
  - d. Problem restraint is located close to Problem solving.
  - e. 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:
  - a. Hope and self-esteem are related to Efficiency.
  - b. Mental health problems are related to Helplessness.
  - c. Type A behavior pattern (TABP) is related to Preoccupation with the problem.

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



*Figure 5.* Graphical representation of the hypothesized locations of coping constructs and mental health variables within the CCM.

E+: Positive emotional coping; P+ E+: Efficiency; P+: Problem solving; P+ E-: Preoccupation with the problem; E-: Negative emotional coping; P- E-: Helplessness; 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, Levine, Scotch, Feinleib, & Kannel, 1978); GHQ-12: General Health Questionnaire – 12 (Goldberg & Williams, 1988); HS: Hope Scale (Snyder et al., 1991); RSES: Rosenberg Self-Esteem Scale (Rosenberg, 1965).

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.

## Chapter 5

### 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;  $M_{\text{age}} = 17.98$ ,  $SD = 1.43$ ) 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;  $M_{\text{age}} = 22.83$ ,  $SD = 4.25$ ) 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;  $M_{\text{age}} = 21.27$ ,  $SD = 2.52$ ), 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;  $M_{\text{age}} = 22.02$ ,  $SD = 2.80$ ). 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;  $M_{\text{age}} = 21.66$ ,  $SD = 2.25$ ). 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;  $M_{\text{age}} = 22.81$ ,  $SD = 3.62$ ).

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

Study	<i>N</i>	% of women	Age	
			<i>M</i>	<i>SD</i>
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 exploratory and one confirmatory methods were applied. The first exploratory test was based on principal component analysis (PCA) with Varimax rotation. The use of PCA on correlation matrices is well-established in examining circumplex structures (Gurtman & Pincus, 2003; Locke, 2000; Ojanen, Grönroos, & Salmivalli, 2005; Tracey & Rounds, 1996; Wiggins, Phillips, & Trapnell, 1989). PCA does have some shortcomings, e.g., it can inflate the variance explained for the components (Schmitt, 2011), but it enables comparison of results in circumplex structures. In each study, PCA was performed on a correlation matrix of eight scales. When analyzing the correlation matrix, it was expected that two components would explain most of the variance and that they would explain similar proportions of the variance.

Communalities ( $h^2$ ) and angular locations ( $\theta$ ) for each coping style were computed based on PCA using the formulas adopted from the interpersonal approach (e.g., Wiggins et al., 1989):

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

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

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

The second 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; Topolewska & Ciecuch, 2016;

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;  $.10 \leq$  Stress 1  $\leq$  .20: fair;  $.05 \leq$  Stress 1  $\leq$  .10: good;  $.025 \leq$  Stress 1  $\leq$  .05: excellent; .00: perfect. MDS, PCA, as well as correlation analysis were carried out in SPSS 24.

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. RANDALL analyses and MDS were conducted on the correlation matrices of eight scales. PCA, MDS, and RANDALL 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 (Kline, 1998). The other indicators,



CFI > .90 and RMSEA < .08 (Browne & Cudeck, 1993) 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 (Locke, 2000; Ojanen et al., 2005; Wiggins et al., 1989). The two vectors were computed for each person using the following equations:

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

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

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):

$$\text{vector length} = (r_{\text{problem}}^2 + r_{\text{emotion}}^2)^{1/2} \quad (5)$$

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

where  $r_{\text{problem}}$  and  $r_{\text{emotion}}$  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, Pincus, Grawe, Mauler, and Castonguay (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  $15^\circ$  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  $15^\circ$ ), 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),  $\theta_i$  is the angle assigned to the coping style  $i$ , and  $\delta$  reflects the angular displacement of the peak of the curve from  $0^\circ$ .

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

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

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 be 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:

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

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 4.80, 2.47, and .33. Following rotation,

the first two components accounted for 59.94% and 30.97% of the total variance. Angular locations and communalities for each preliminary study are given in Table 13. Communalities were in the range .82–.97, with the mean for the eight styles being .91. Discrepancies between theoretical and empirical angular locations ranged from 6° to 33°. The mean difference between theoretical and empirical angular locations was 20.9°, as computed for seven styles (the location of one style was always constrained to zero). MDS results for studies 1–3 are depicted in Figure 6. The obtained Stress 1 value of .052 suggests a good 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). 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  $\alpha$  for the First Three Versions of the CCI*

Coping style	Version 1	Version 2	Version 3
Positive emotional coping	.66	.71	.70
Efficiency	.71	.72	.80
Problem solving	.74	.78	.79
Preoccupation with the problem	.43	.62	.70
Negative emotional coping	.73	.80	.77
Helplessness	.73	.82	.80
Problem avoidance	.71	.80	.82
Hedonic disengagement	.54	.66	.81
<i>M</i>	.66	.74	.77

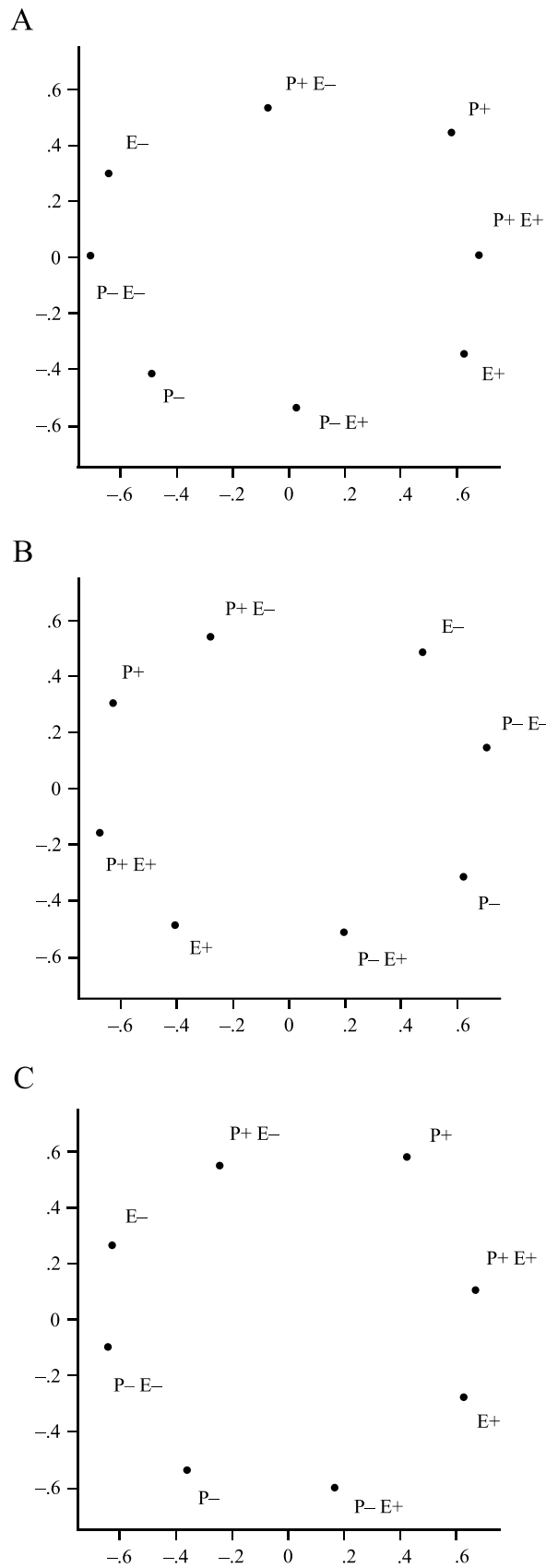
Table 12  
*Mean, Minimum, and Maximum Item-Total Correlations for the First Three Versions of the CCI*

Coping style	Item-total correlation		
	Study 1	Study 2	Study 3
Positive emotional coping	.42 [.34 – .50]	.45 [.35 – .58]	.43 [.35 – .49]
Efficiency	.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]
Helplessness	.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 and Communalities for the First Three Versions of the CCI*

Coping style	Study 1		Study 2		Study 3		
	$\theta_t$	$\theta$	$h^2$	$\theta$	$h^2$	$\theta$	$h^2$
Positive emotional coping	0°	0°	.94	0°	.95	0°	.97
Efficiency	45°	22°	.91	32°	.97	28°	.96
Problem solving	90°	57°	.97	67°	.96	73°	.97
Preoccupation with the problem	135°	125°	.82	98°	.91	142°	.89
Negative emotional coping	180°	186°	.95	184°	.98	181°	.98
Helplessness	225°	202°	.95	215°	.98	209°	.97
Problem avoidance	270°	241°	.91	250°	.98	255°	.97
Hedonic disengagement	315°	293°	.82	292°	.92	307°	.94

*Note.* Study 1 ( $N = 334$ ); Study 2 ( $N = 216$ ); Study 3 ( $N = 284$ ).  $\theta_t$ : theoretical angle;  $\theta$ : empirical angle;  $h^2$ : communality.



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

A: Study 1, B: Study 2, C: Study 3.

E+: Positive emotional coping; P+ E+: Efficiency; P+: Problem solving; P+ E-: Preoccupation with the problem; E-: Negative emotional coping; P- E-: Helplessness; 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	$\chi^2$	<i>df</i>	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]
Efficiency–Helplessness				
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: 5.02, 2.64 and .15. Following rotation, the two components explained 50.44% and 45.28% of the total variance. Communalities were in the range of .91–.98 with a mean of .96. Disparities between theoretical and empirical angles were from 4° to 37° with a mean of 18.6° (see Table 13). MDS for Study 2 is presented in Figure 6. The obtained Stress 1 value was .038, which indicates an excellent fit to the data. 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. The one angular displacement was meaningful (Preoccupation with the problem – 37°). 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: 4.61, 3.05 and .17. Following rotation, the variance accounted for by the first two components was 55.20% and 40.49%. Communalities were in the range .89–.98 with a mean of .96. Discrepancies between theoretical and empirical angular location were from 1° to 17° with a mean of 11.6° (see Table 13). Figure 6 shows MDS for Study 3. The obtained Stress 1 value for the model was .039, which indicates an excellent fit to the data. CI from a randomization test of hypothesized orders performed using RANDALL was .972,  $p < .001$ , with 284 of 288 predictions met.

The eigenvalues suggested some asymmetry in the model, but differences between the theoretical and empirical positions were small. 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 Efficiency–Helplessness exhibited an insufficient fit. After correlating two error terms, the fit for Efficiency–Helplessness 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  $\alpha$  for Final Version of CCI*

Coping style	Total sample	Women	Men
Positive emotional coping	.78	.79	.77
Efficiency	.80	.82	.78
Problem solving	.86	.87	.85
Preoccupation with the problem	.80	.82	.78
Negative emotional coping	.82	.84	.79
Helplessness	.85	.86	.84
Problem avoidance	.85	.85	.87
Hedonic disengagement	.84	.84	.84
<i>M</i>	.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]
Efficiency	.51 [.41 – .61]
Problem solving	.54 [.45 – .62]
Preoccupation with the problem	.45 [.38 – .53]
Negative emotional coping	.56 [.41 – .71]
Helplessness	.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 Helplessness and Hedonic disengagement. In the third version, items associated with reinterpretation were incorporated in Efficiency and Positive emotional coping. In the fourth version those items were included in the scales of Problem solving, Efficiency 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 point of view and I see something which calms me down.
	55.	I think that the problem is not that serious and I manage to relax.
	61.	In the situation I find something which soothes me.
Efficiency	4.	I have noticed something interesting and positive in the difficult situation.
	20.	There may be new opportunities in a difficult situation.
	44.	I try to see the situation from a different perspective and I keep good mood.
	52.	I notice something in the situation that facilitates taking action that brings me closer to the goal.
Problem solving	57.	I look at the situation from a different perspective and I choose the most adequate actions.
	Internalization	
Helplessness	56.	When someone treats me badly it is my fault.
	59.	In some way I have provoked the difficult situation.
	73.	I have an impression that I have caused the problem.
Hedonic disengagement	26.	I'm not looking for a solution and I have an impression that things will go my way anyway.
	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, Lachowicz-Tabaczek, & Dzwonkowska, 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.** 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 strategies.** Coping strategies 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 strategies 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 common 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 strategy 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, Trzebiński, & Zięba, 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 & Merez, 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, Abad, Barrada, Garrido, & Ponsoda, 2014; Romppel, Braehler, Roth, & Glaesmer, 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

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 (Hypotheses 1 and 2)**

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, kurtosis, Fisher's skewness coefficients, and Fisher's kurtosis coefficients for coping styles, as well as their Spearman correlations with age are given in Table 19. Normality of distribution was determined using Fisher's skewness and Fisher's kurtosis coefficients (Abu-Bader, 2016; Gorsuch & Griffee, 2017), which were obtained by dividing skewness/kurtosis by standard error of skewness/kurtosis. The distribution of Hedonic disengagement was skewed, while the distributions of Negative emotional coping and Problem avoidance were platykurtic.

Four significant correlations with age were found: positive for Problem solving, Efficiency and Positive emotional coping and negative for Helplessness.

Table 19  
*Descriptive Statistics for CCM Coping Styles*

Coping style	<i>M</i>	<i>SD</i>	Skewness	Fisher's skewness	Kurtosis	Fisher's kurtosis	Age rho
Positive emotional coping	3.01	0.71	-0.04	-0.47	-0.03	-0.18	.12**
Efficiency	3.22	0.70	-0.16	-1.64	0.05	0.25	.13**
Problem solving	3.45	0.63	-0.12	-1.22	-0.21	-1.09	.10*
Preoccupation with the problem	3.21	0.60	-0.09	-0.94	0.02	0.12	.02
Negative emotional coping	3.23	0.79	-0.07	-0.74	-0.45	-2.33 <sup>a</sup>	-.08
Helplessness	2.81	0.71	0.06	0.60	0.01	0.03	-.11**
Problem avoidance	2.63	0.78	0.09	0.99	-0.55	-2.87 <sup>b</sup>	-.00
Hedonic disengagement	2.45	0.78	0.34	3.50 <sup>b</sup>	-0.29	-1.53	.02

<sup>a</sup>  $\alpha = .05$ . <sup>b</sup>  $\alpha = .01$ .

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

**Circumplex structure of the CCM (Hypothesis 1).** 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	<u>-.02</u>	.49	1.00					
4. Helplessness	-.38	<u>.18</u>	.63	1.00				
5. Problem avoidance	<b>-.51</b>	-.30	<u>.18</u>	.54	1.00			
6. Hedonic disengagement	-.30	<b>-.41</b>	-.22	<u>.15</u>	.64	1.00		
7. Positive emotional coping	<u>.20</u>	-.15	<b>-.35</b>	-.24	<u>.18</u>	.53	1.00	
8. Efficiency	.55	<u>.14</u>	-.32	<b>-.41</b>	-.17	<u>.17</u>	.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 on the correlation matrix revealed the following eigenvalues 4.14, 3.65 and .07. Following Varimax rotation, the first two components explained 50.73% and 46.58% of the variance. Communalities ranged from .96 to .98, with the mean for the eight styles being .97. Differences between theoretical and empirical angular locations were from  $0^\circ$  to  $10^\circ$ , with the mean for seven styles being  $5.9^\circ$  (see Table 21). They were computed for only seven styles because the location of one style had to be constrained to zero. MDS for the Main Study is given in Figure 7. The Stress 1 value obtained from MDS was .036, which suggests excellent fit to the data. Results from PCA and MDS proved a nearly perfect fit to the circumplex model. RANDALL showed that 287 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 and Communalities for CCM Coping Styles from the Main Study*

Coping style	Total sample			Women		Men		Angular difference between sexes
	$\theta_t$	$\theta$	$h^2$	$\theta$	$h^2$	$\theta$	$h^2$	
Positive emotional coping	0°	0°	.96	0°	.97	0°	.94	0°
Efficiency	45°	36°	.97	35°	.98	39°	.95	4°
Problem solving	90°	80°	.98	79°	.99	83°	.98	4°
Preoccupation with the problem	135°	129°	.97	124°	.97	135°	.96	11°
Negative emotional coping	180°	185°	.97	180°	.98	191°	.95	11°
Helplessness	225°	221°	.98	218°	.98	225°	.97	7°
Problem avoidance	270°	270°	.98	268°	.98	274°	.99	6°
Hedonic disengagement	315°	308°	.98	309°	.98	307°	.98	2°

Note. Main Study ( $N = 649$ ).  $\theta_t$ : theoretical angle;  $\theta$ : empirical angle;  $h^2$ : communality.

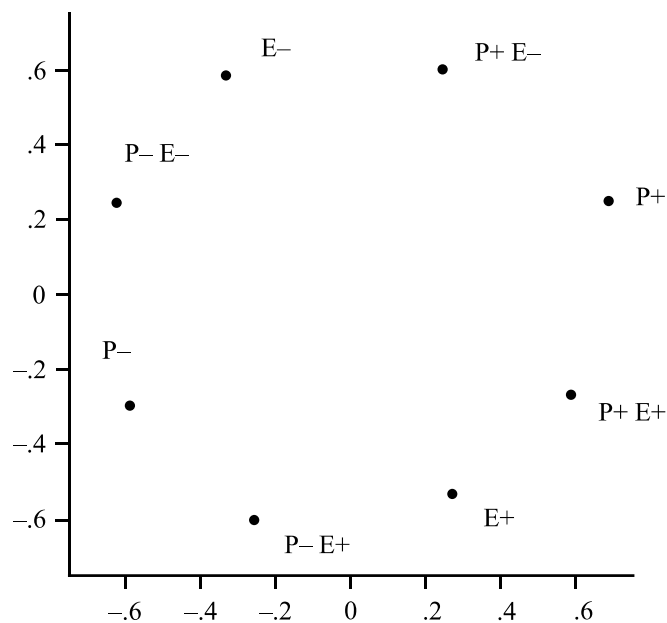


Figure 7. MDS of CCM coping styles in the Main Study.

E+: Positive emotional coping; P+ E+: Efficiency; P+: Problem solving; P+ E-: Preoccupation with the problem; E-: Negative emotional coping; P- E-: Helplessness; P-: Problem avoidance; P+ E-: Hedonic disengagement.

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 4.14, 3.69, .05 and 4.11, 3.60, .12 for women and men, respectively. The first two factors explained 50.79% and 47.04% of the variance for women and 49.56% and 46.78% for men. Communalities were in the range of .97–.99 for women and .94–.99 for men. Discrepancies between theoretical and empirical angular locations for the two sexes separately were from 0° to 11°. Also, differences between the sexes in empirical locations for particular coping styles were from 0° to 11° (see Table 21). The CI from 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 (Hypothesis 2).** Figures 8–11 show CFA models and Table 22 presents CFA fit indices. The models for Problem solving–Problem avoidance and Efficiency–Helplessness 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	$\chi^2$	<i>df</i>	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]
Efficiency – Helplessness				
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.

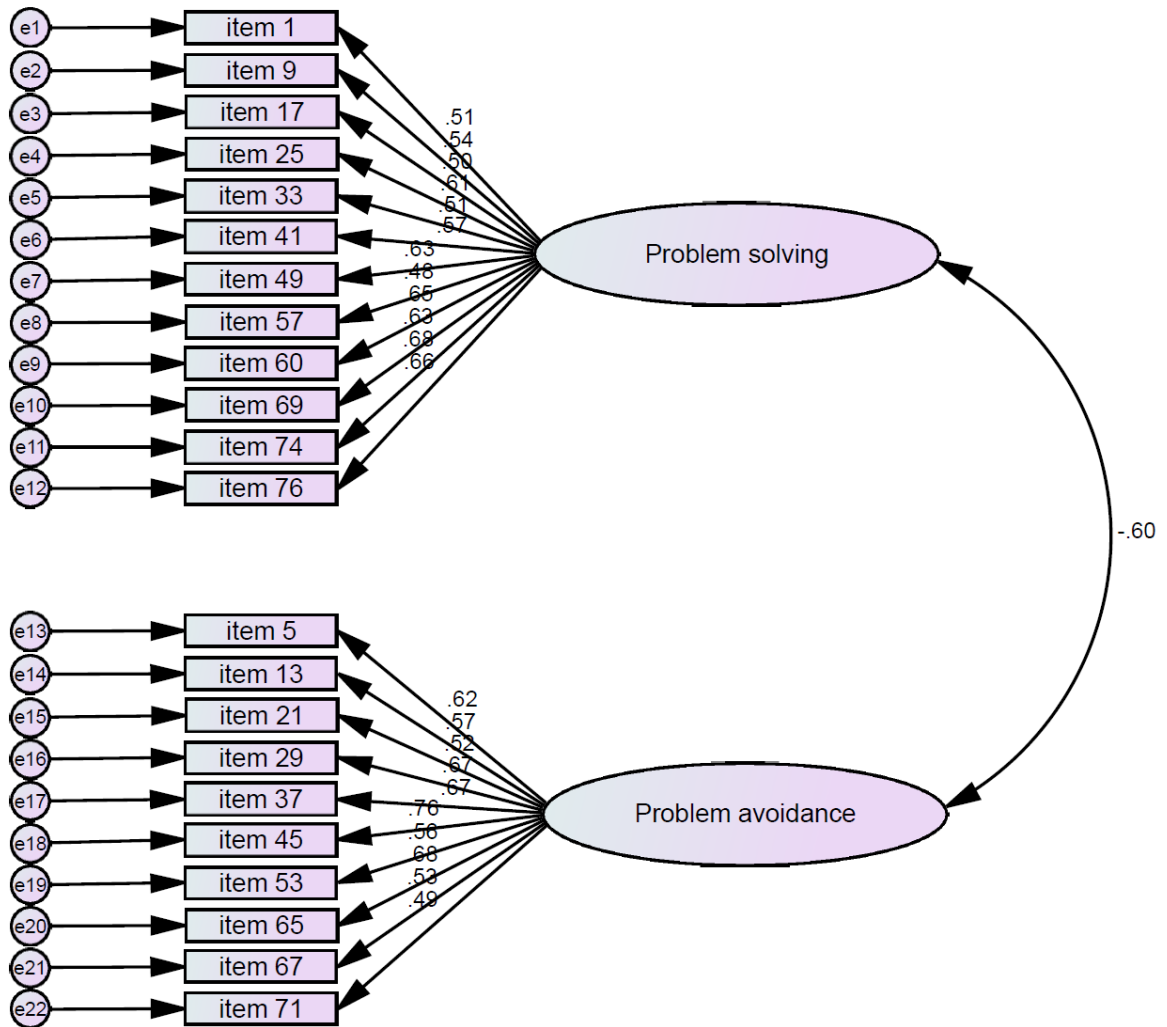


Figure 8. CFA for Problem solving and Problem avoidance in the Main Study.

The coefficients shown are standardized estimates.



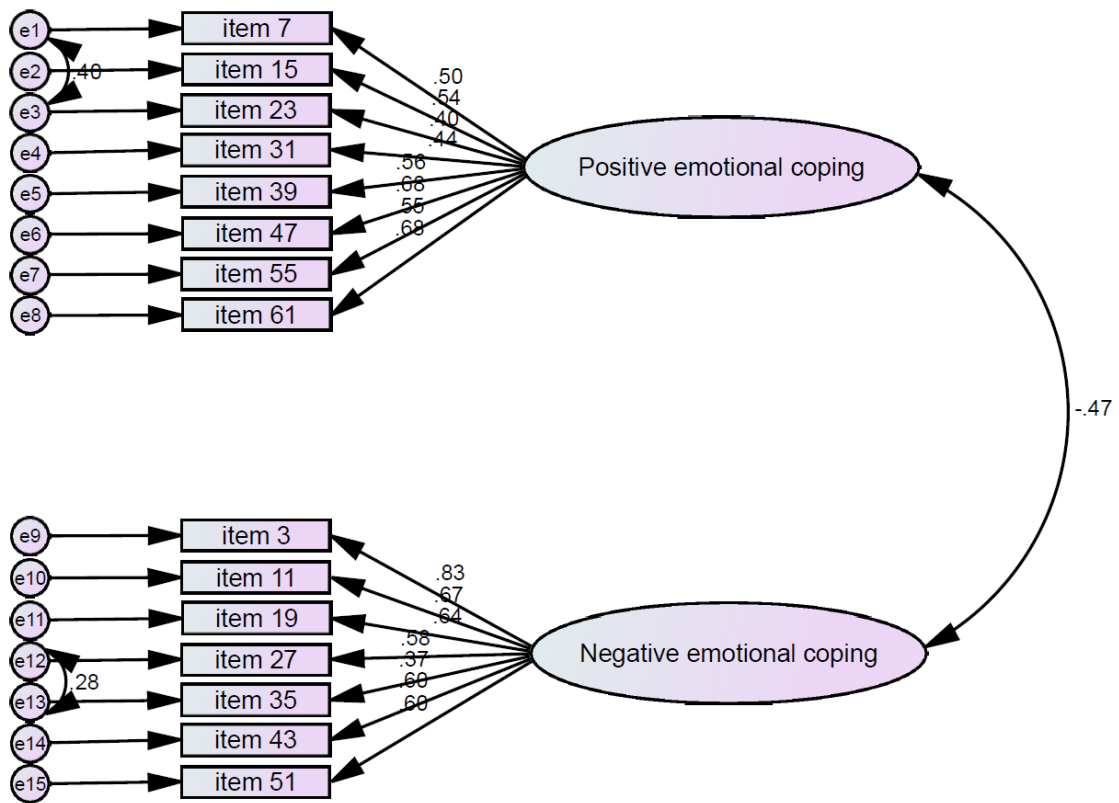


Figure 9. CFA for Positive emotional coping and Negative emotional coping in the Main Study.

The coefficients shown are standardized estimates.



Figure 10. CFA for Efficiency and Helplessness in the Main Study.

The coefficients shown are standardized estimates.

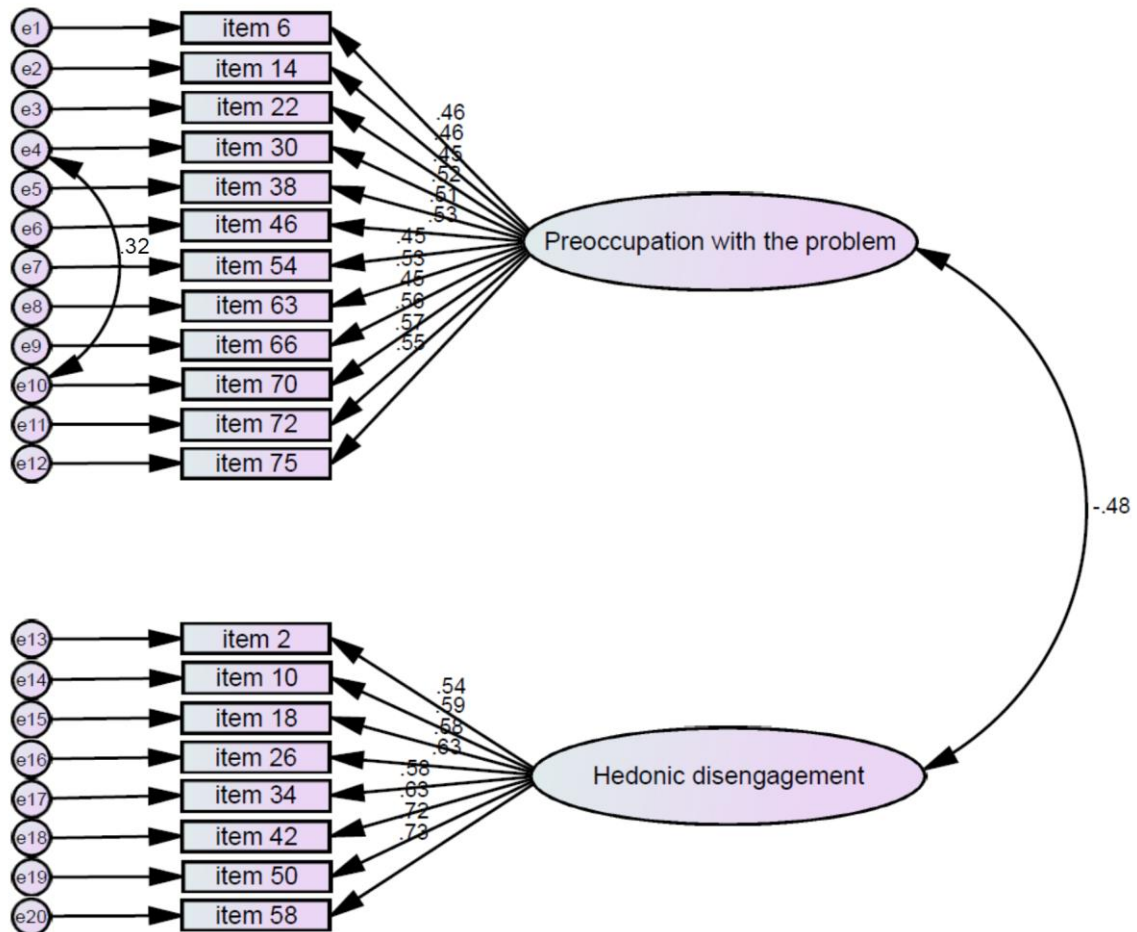


Figure 11. CFA for Preoccupation with the problem and Hedonic disengagement in the Main Study.

The coefficients shown are standardized estimates.

### **Gender Differences in Coping Styles (Hypothesis 3)**

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 ipsatization (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 ipsative scores (from a sample of 352 women and 280 men) in SPSS 24.

In the beginning, the assumption of homogeneity of variances was checked with Levene's test. Only ipsatized Negative emotional coping violated this assumption ( $p = .02$ ). ANOVA was performed for all 16 dependent variables, while the Welch test was used for ipsatized Negative emotional coping unaffected by unequal variances. The gender differences in coping styles are shown in Table 23. Based on raw and ipsative scores, men revealed a higher preference to use Problem solving and Positive emotional coping, whereas women scored higher on Negative emotional coping. Differences in ipsatized Negative emotional coping were significant both in ANOVA and Welch's test ( $p < .001$ ). Women also reported higher raw scores in Preoccupation with the problem and Problem avoidance, but for ipsative scores those effects bordered on statistical significance. Men were more likely to engage in Efficiency expressed in ipsative scores, but in the case of raw scores the difference was on the border 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		<i>F</i>	<i>p</i>	$\eta^2$
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Positive emotional coping <sub>r</sub>	2.95	.71	3.07	.71	4.48	.035	.007
Positive emotional coping <sub>i</sub>	-.06	.61	.08	.59	8.47	.004	.013
Efficiency <sub>r</sub>	3.17	.71	3.27	.68	3.50	.062	.006
Efficiency <sub>i</sub>	.16	.65	.28	.62	6.08	.014	.010
Problem solving <sub>r</sub>	3.40	.63	3.50	.63	3.91	.049	.006
Problem solving <sub>i</sub>	.39	.62	.51	.66	5.59	.018	.009
Preoccupation with the problem <sub>r</sub>	3.25	.61	3.15	.57	4.36	.037	.007
Preoccupation with the problem <sub>i</sub>	.24	.57	.16	.56	3.05	.081	.005
Negative emotional coping <sub>r</sub>	3.36	.80	3.10	.76	16.58	.000	.026
Negative emotional coping <sub>i</sub>	.35	.75	.11	.67	16.80 17.20 <sup>a</sup>	.000	.026
Helplessness <sub>r</sub>	2.86	.71	2.76	.70	2.90	.089	.005
Helplessness <sub>i</sub>	-.16	.65	-.23	.60	2.28	.131	.004
Problem avoidance <sub>r</sub>	2.69	.76	2.57	.80	3.89	.049	.006
Problem avoidance <sub>i</sub>	-.32	.67	-.42	.67	3.63	.057	.006
Hedonic disengagement <sub>r</sub>	2.41	.76	2.49	.81	1.87	.172	.003
Hedonic disengagement <sub>i</sub>	-.60	.67	-.50	.68	3.84	.051	.006

*Note.* *N* = 632 (352 females and 280 males).

r: raw score; i: ipsatized score.

<sup>a</sup> *F* value for Welch test.

### **Location of Coping Variables in the CCM (Hypotheses 4 and 5)**

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 ( $r = .20, p < .01$ ), and in the final version of the CCI the correlation was close to zero ( $r = .10, p < .01$ ).

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

***Coping strategies from the COPE.*** Relationships between the COPE strategies and the CCM coping styles are given in Table 24 and Figure 12. Ten of the 15 strategies 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 and denial were related to Problem avoidance, while behavioral disengagement was placed between Problem solving and Helplessness. Humor was located between Positive emotional coping and Hedonic disengagement, focus on and venting of emotions was related to Negative emotional coping, and positive reinterpretation and growth was assigned to Efficiency. Substance use was associated with Problem avoidance and Hedonic disengagement. 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	$\alpha$	E+	P+ E+	P+	P+ E-	E-	P- E-	P-	P- E+	Coping dimensions		$\theta$	VL	Coping style <sup>a</sup>
										PC	EC			
										<i>Factors obtained after PCA</i>				
I – Venting of emotions and seeking social support	.89	-.12	-.17*	-.07	.28***	.37***	.23**	.06	-.13	-.03	-.35***	185°	.35	<b>E-</b>
II – Hedonic escapism	.85	.21**	-.08	-.34***	-.23**	.05	.31***	.60***	.61***	-.55***	.11	281°	.56	<b>P-</b>
III – Problem solving and cognitive restructuring	.81	.32***	.49***	.56***	.36***	-.08	-.29***	-.31***	-.20**	.53***	.25***	65°	.59	<b>P+/ P+ E+</b>
<i>Problem-focused coping</i>														
Active coping 1	.35	.20**	.32***	.49***	.42***	.06	-.18*	-.24**	-.18*	.44***	.08	80°	.45	<b>P+</b>
Active coping 2	.57	.22**	.39***	.58***	.46***	.02	-.29***	-.42***	-.33***	.60***	.11	80°	.61	<b>P+</b>
Planning	.73	.18*	.38***	.59***	.43***	.00	-.20**	-.43***	-.30***	.58***	.10	81°	.58	<b>P+</b>
Suppression of competing activities	.61	.06	.20**	.38***	.37***	.00	-.16*	-.24**	-.25***	.39***	.01	89°	.39	<b>P+</b>
Restraint coping	.50	.06	.05	.02	.06	.13	.13	.23**	.13	-.10	-.03	254°	.10	<b>P-/ P- E-</b>
Seeking social support for instrumental reasons	.83	.02	.00	.02	.15*	.15*	.09	-.01	-.12	.05	-.12	157°	.13	<b>E-/ P+ E-</b>
<i>Emotion-focused coping</i>														
Seeking social support for emotional reasons	.86	.07	-.02	.03	.22**	.18*	.04	-.04	-.08	.07	-.11	147°	.13	<b>P+ E-</b>
Positive reinterpretation and growth	.65	.46***	.57***	.41***	.17*	-.18*	-.34***	-.28***	-.08	.43***	.41***	46°	.60	<b>P+ E+</b>
Acceptance	.69	.14*	.08	-.06	-.11	-.01	.04	.20**	.16*	-.13	.11	310°	.17	<b>P- E+</b>
Turning to religion	.91	.07	.05	.04	.22**	.10	.04	.00	-.03	.07	-.05	129°	.08	<b>P+ E-</b>
Denial	.67	.04	-.19**	-.33***	-.15*	.11	.32***	.50***	.47***	-.49***	-.05	265°	.49	<b>P-</b>

*“Less useful”*

Behavioral disengagement	.75	-.05	-.27***	-.43***	-.13	.20**	.46***	.55***	.42***	-.56***	-.18*	253°	.59	<b>P-</b> / <b>P-</b> <b>E-</b>
Mental disengagement	.57	.12	-.10	-.27***	-.14	.10	.28***	.45***	.46***	-.43***	.02	272°	.43	<b>P-</b>
Focus on and venting of emotions	.61	-.27***	-.32***	-.19**	.23**	.59***	.35***	.15*	-.19**	-.14*	-.54***	195°	.56	<b>E-</b>
<i>Recently developed</i>														
Humor	.83	.45***	.18*	-.06	-.19**	-.20**	-.01	.26***	.48***	-.21**	.39***	332°	.45	<b>E+</b> / <b>P-</b> <b>E+</b>
Substance use	.89	.15*	-.02	-.07	-.01	.00	.08	.23**	.33***	-.19**	.09	295°	.21	<b>P-</b> / <b>P-</b> <b>E+</b>
<i>Strategies of reinterpretation</i>														
Growth	.54	.29***	.47***	.48***	.26***	-.12	-.30***	-.38***	-.15*	.50***	.27***	61°	.57	<b>P+</b> / <b>P+</b> <b>E+</b>
Positive reinterpretation	.58	.48***	.47***	.20**	.03	-.17*	-.27***	-.09	.03	.23**	.41***	29°	.47	<b>E+</b> / <b>P+</b> <b>E+</b>
<i>Strategies of humor</i>														
Positive humor	.78	.45***	.22**	-.01	-.18**	-.24**	-.08	.16*	.38***	-.12	.41***	344°	.43	<b>E+</b> / <b>P-</b> <b>E+</b>
Hedonic humor	.74	.37***	.11	-.09	-.16*	-.12	.07	.32***	.50***	-.27***	.30***	318°	.40	<b>P-</b> <b>E+</b>
<i>Strategies of restraint</i>														
Problem restraint	.42	.07	.20**	.24**	.20**	.06	-.05	-.07	-.10	.20**	.02	84°	.21	<b>P+</b>
Avoidant restraint	.45	.02	-.12	-.22**	-.11	.16*	.26***	.44***	.30***	-.37***	-.07	260°	.37	<b>P-</b>

Note.  $n = 205$ . PC: Problem coping; EC: Emotion coping; E+: Positive emotional coping; P+ E+: Efficiency; P+: Problem solving; P+ E-: Preoccupation with the problem; E-: Negative emotional coping; P- E-: Helplessness; P-: Problem avoidance; P+ E-: Hedonic disengagement.

$\alpha$ : Cronbach's alpha;  $\theta$ : angular location; VL: vector length.

<sup>a</sup> Assignment of each external variable to CCM coping style(s). Bolded symbols of coping styles indicate vector lengths above .20.

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



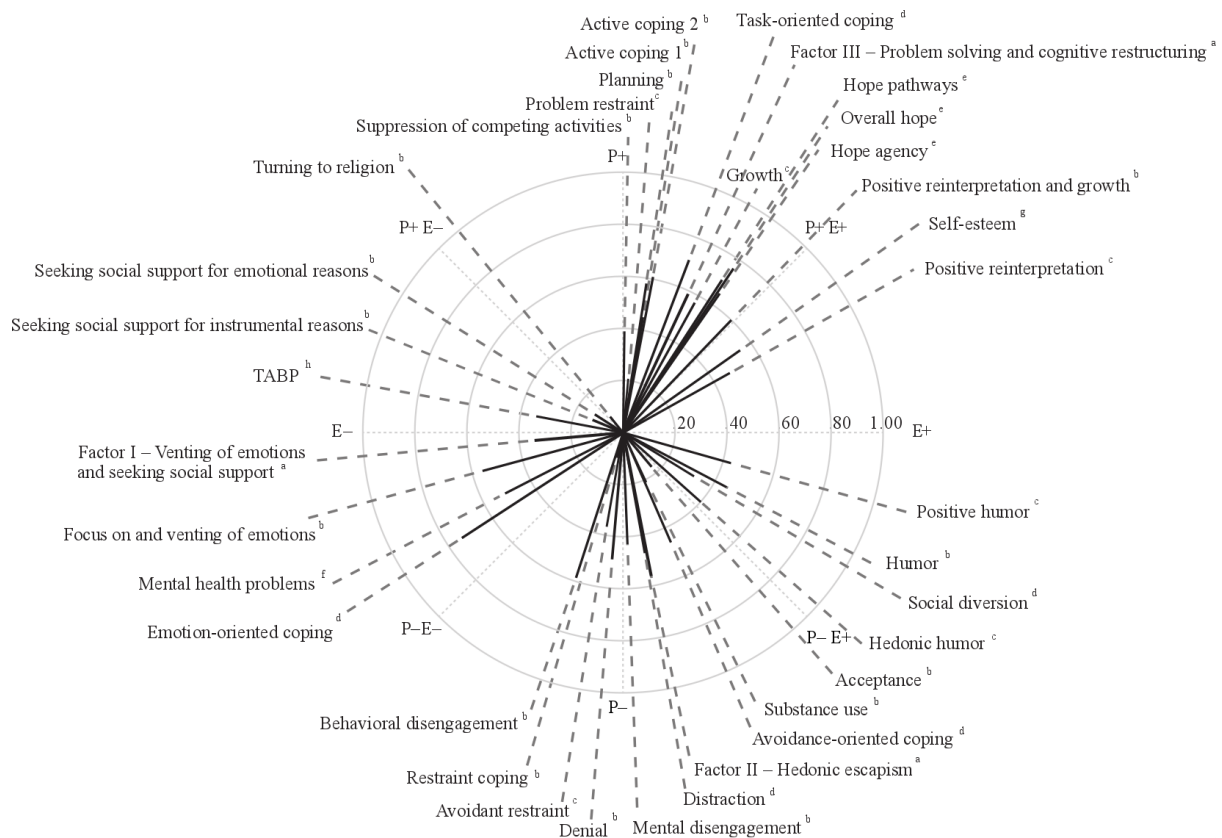


Figure 12. Location of external coping scales and adjustment indicators within the CCM.

E+: Positive emotional coping; P+ E+: Efficiency; P+: Problem solving; P+ E-: Preoccupation with the problem; E-: Negative emotional coping; P- E-: Helplessness; P-: Problem avoidance; P+ E-: Hedonic disengagement.

Solid lines represent vector length.

<sup>a</sup> Three factors obtained from PCA on the COPE.

<sup>b</sup> Carver et al. (1989).

<sup>c</sup> Strategies of humor, reinterpretation, and restraint from Carver et al. (1989).

<sup>d</sup> Endler and Parker (1990a).

<sup>e</sup> Snyder et al. (1991).

<sup>f</sup> Goldberg and Williams (1988).

<sup>g</sup> Rosenberg (1965).

<sup>h</sup> 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 ( $VL \geq .35$ ). Factor I (venting of emotions and seeking social support) was assigned to Negative emotional coping, factor II (hedonic escapism) was located closest to Problem avoidance, but with a (slight) shift towards Hedonic disengagement. Moreover, its correlations with Problem avoidance and Hedonic disengagement were almost identical. Factor III (problem solving and cognitive restructuring) was most similar to Problem solving and Efficiency.

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  $96^\circ$ ,  $144^\circ$  and  $120^\circ$ , 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  $120^\circ$ . The differences between the hypothetical and empirical locations were:  $24^\circ$ ,  $24^\circ$ ,  $0^\circ$ , with a mean disparity of  $16^\circ$ . 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 (positive humor, hedonic humor), and restraint (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 Efficiency, while positive reinterpretation with Positive emotional coping and Efficiency. Positive humor was related to Positive emotional coping and Hedonic disengagement, 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		Coping dimensions		$\theta$	VL	Coping style
		PC	EC			
Positive reinterpretation and growth						
1.	I try to grow as a person as a result of the experience.	.42***	.30***	55°	.52	P+ E+
29.	I try to see it in a different light, to make it seem more positive.	.18*	.31***	30°	.36	P+ E+
38.	I look for something good in what is happening.	.20**	.38***	28°	.43	E+/P+ E+
59.	I learn something from the experience.	.40***	.16*	68°	.43	P+/P+ E+
Humor						
8.	I laugh about the situation.	-.12	.34***	341°	.36	E+/P- E+
20.	I make jokes about it.	-.10	.41***	346°	.42	E+
36.	I kid around about it.	-.18*	.31***	330°	.36	P- E+
50.	I make fun of the situation.	-.30***	.21**	305°	.37	P- E+
Restraint coping						
10.	I restrain myself from doing anything too quickly.	.17*	.04	76°	.18	P+
22.	I hold off doing anything about it until the situation permits.	-.38***	-.03	266°	.38	P-
41.	I make sure not to make matters worse by acting too soon.	.16*	-.02	95°	.16	P+
49.	I force myself to wait for the right time to do something.	-.21**	-.09	247°	.22	P-/ P- E-

Note.  $n = 205$ . PC: Problem coping; EC: Emotion coping; E+: Positive emotional coping; P+ E+: Efficiency; P+: Problem solving; P- E-: Helplessness; P-: Problem avoidance; P- E+: Hedonic disengagement.  $\theta$ : angular location; VL: vector length.

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

Items from the scales of positive reinterpretation and growth as well as humor had vectors ranging from .36 to .52. Items from positive reinterpretation and growth represented a continuum from 28° (Positive emotional coping/Efficiency) to 68° (Problem solving/Efficiency). One item (“I look for something good in what is happening”) was located between Positive emotional coping and Efficiency. 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 Efficiency. The last item (“I learn something from

the experience”) was placed between Efficiency and Problem solving. Similarly, the humor items represented a continuum from 305° (Hedonic disengagement) to 346° (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 .16 to .38 and represented opposite regions of the CCM. One item was related to Problem avoidance and Helplessness (“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 .32 to .74. The vectors of task-oriented coping and emotion-oriented coping were above .70, which indicates very strong similarities between these constructs and the CCM. Task-oriented coping was located between Problem solving and Efficiency, whereas emotion-oriented coping was associated with Helplessness. Avoidance-oriented coping was placed between Problem avoidance and Hedonic disengagement. Distraction was similar to Problem avoidance, whereas social diversion was linked to Hedonic disengagement.

Table 26  
*Relationships Between CCM Coping Styles and CISS Scales as well as Mental Health Indicators*

Scale	$\alpha$	E+	P+ E+	P+	P+ E-	E-	P- E-	P-	P- E+	Coping dimensions		$\theta$	VL	Coping style <sup>f</sup>
										PC	EC			
<i>CISS scales<sup>a</sup></i>														
Task-oriented coping	.86	.25***	.49***	.74***	.38***	-.12	-.35***	-.45***	-.19**	.66***	.25***	69°	.71	<b>P+/P+ E+</b>
Emotion-oriented coping	.90	-.29***	-.37***	-.30***	.26***	.68***	.75***	.42***	-.01	-.40***	-.62***	213°	.74	<b>P- E-</b>
Avoidance-oriented coping	.86	.32***	.09	-.29***	-.25***	-.02	.19**	.49***	.44***	-.42***	.19**	294°	.46	<b>P-/P- E+</b>
Distraction	.80	.19**	-.02	-.29***	-.24***	.03	.27***	.53***	.40***	-.46***	.09	280°	.47	<b>P-</b>
Social diversion	.76	.35***	.23**	-.14*	-.14*	-.10	-.02	.23**	.30***	-.17*	.27***	328°	.32	<b>P- E+</b>
<i>Mental health indicators</i>														
Overall hope <sup>b</sup>	.86	.30***	.57***	.65***	.19**	-.26***	-.56***	-.45***	-.09	.63***	.42***	56°	.76	<b>P+ E+</b>
Hope pathways <sup>b</sup>	.80	.28***	.52***	.60***	.16*	-.26***	-.51***	-.41***	-.12	.59***	.39***	57°	.70	<b>P+ E+</b>
Hope agency <sup>b</sup>	.80	.26***	.50***	.55***	.17*	-.21**	-.49***	-.39***	-.05	.54***	.36***	56°	.65	<b>P+ E+</b>
Mental health problems <sup>c</sup>	.86	-.28***	-.40***	-.24**	.07	.36***	.40***	.13	-.12	-.23**	-.45***	207°	.51	<b>E-/P- E-</b>
Self-esteem <sup>d</sup>	.90	.38***	.43***	.36***	.01	-.31***	-.40***	-.19**	.09	.32***	.45***	35°	.55	<b>P+ E+</b>
TABP <sup>e</sup>	.55	-.23**	-.12	.00	.28***	.30***	.17*	-.03	-.21**	.07	-.33***	169°	.34	<b>E-</b>

Note. PC: Problem coping; EC: Emotion coping; E+: Positive emotional coping; P+ E+: Efficiency; P+: Problem solving; P+ E-: Preoccupation with the problem; E-: Negative emotional coping; P- E-: Helplessness; P-: Problem avoidance; P+ E-: Hedonic disengagement; TABP: Type A behavior pattern.

$\alpha$ : Cronbach's alpha;  $\theta$ : angular location; VL: vector length.

<sup>a</sup>  $n = 215$ . <sup>b</sup>  $n = 201$ . <sup>c</sup>  $n = 187$ . <sup>d</sup>  $n = 279$ . <sup>e</sup>  $n = 193$ .

<sup>f</sup> Assignment of each external variable to CCM coping style(s). Bolded symbols of coping styles indicate vector lengths  $\geq .20$ .

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

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°, 81° and 135°, 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°, 39° and 15°, with a mean disparity of 26°. 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.

*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, Kaniskan, & McCoach, 2015). In the first model Efficiency was used to predict adaptive coping, but the fit was unsatisfactory:  $\chi^2(2) = 42.10, p < .001, CFI = .715$ . Thus Efficiency was replaced with Helplessness and the fit of the second model was acceptable at  $\chi^2(2) = 14.47, p < .01, CFI = .949$ . All three variables were significant indicators of adaptive coping, although the latent variable was the most strongly loaded by emotion-oriented coping. Helplessness predicted (inversely) adaptive coping ( $\beta = -.83, p < .001$ ) and explained 69% of its variance. A regression model was performed for the sake of comparison. Emotion-oriented coping was significantly predicted by Helplessness ( $\beta = -.75, p < .001$ ), which accounted for 57% of its variance.

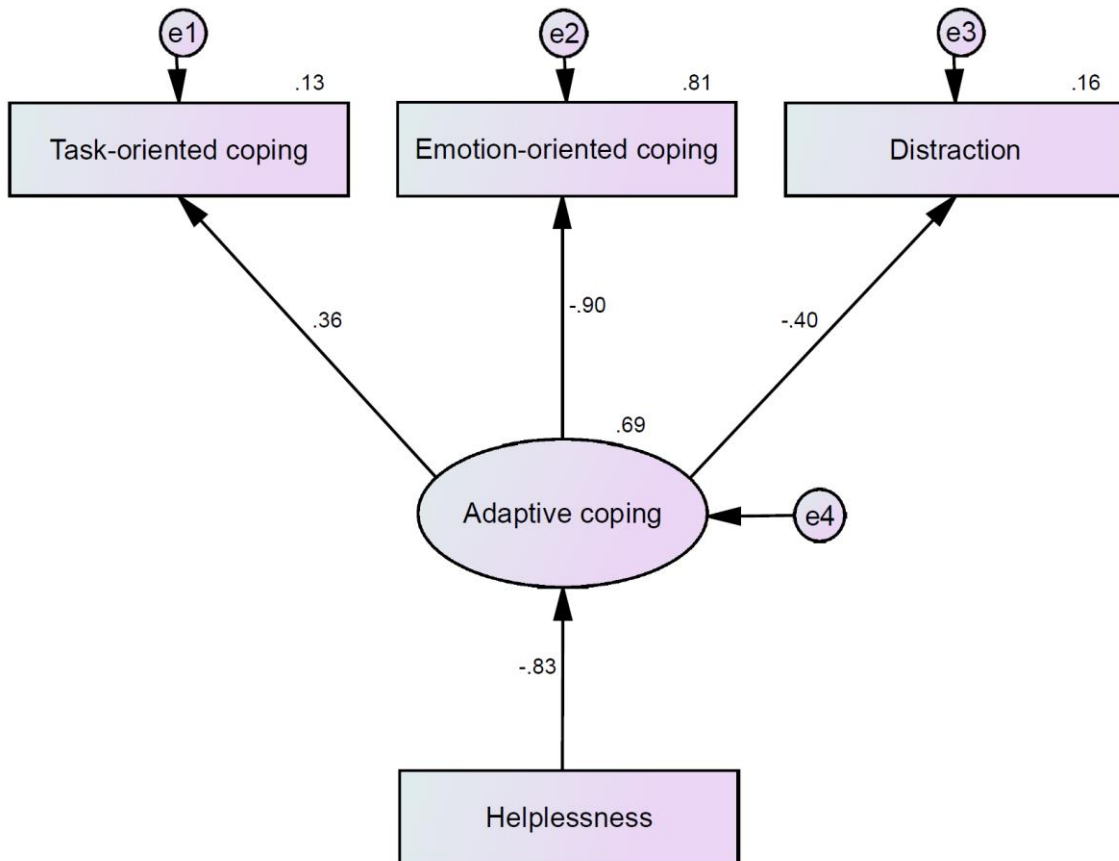


Figure 13. Standardized factor loadings and parameter estimates of the structural model linking adaptive coping and Helplessness.

### Relationships between Mental Health and CCM Styles (Hypothesis 6)

**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 .76. 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 Efficiency, while mental health problems were located between Helplessness and Negative emotional coping. 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 (Efficiency, Helplessness, 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 <sup>a</sup>	Overall hope <sup>b</sup>	Hope agency <sup>b</sup>	Hope pathways <sup>b</sup>	Mental health problems <sup>c</sup>	TABP <sup>d</sup>
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
<i>F</i> - OLS	18.83***	45.30***	25.29***	32.03***	11.21***	5.02***
( <i>F</i> - HCSE)	(20.00***)	(30.68***)	(15.71***)			(4.65***)
Adj. <i>R</i> <sup>2</sup>	.278	.571	.422	.482	.248	.112

Note. P+: Problem solving; P-: Problem avoidance; E+: Positive emotional coping; E-: Negative emotional coping; P+ E+: Efficiency; P- E-: Helplessness; P+ E-: Preoccupation with the problem; P+ E-: Hedonic disengagement; TABP: Type A behavior pattern.

<sup>a</sup> *n* = 279. <sup>b</sup> *n* = 201. <sup>c</sup> *n* = 187. <sup>d</sup> *n* = 193.

\* *p* < .05. \*\* *p* < .01. \*\*\* *p* < .001.

Self-esteem was determined by Problem solving ( $\beta = .24$ ) and Helplessness ( $\beta = -.26$ ), with an adjusted  $R^2$  of .278. Overall hope had the following significant predictors in OLS and OLS with HCSE: Problem solving ( $\beta = .37$ ), Efficiency ( $\beta = .19$ ), and Helplessness ( $\beta = -.24$ , 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 ( $\beta = .28$ ) and Efficiency ( $\beta = .21$ ) and lower use of Helplessness ( $\beta = -.25$ , adj.  $R^2 = .422$ ). Hope pathways were predicted by Problem solving ( $\beta = .38$ ) and Helplessness ( $\beta = -.17$ , adj.  $R^2 = .482$ ). Mental health problems were related to Efficiency ( $\beta = -.28$ ) and Helplessness ( $\beta = .24$ ). The model explained

24.8% of the variance according to the adjusted  $R^2$  value. The TABP had one significant predictor: Preoccupation with the problem ( $\beta = .23$ , 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  $R^2 > .80$ , in the case of two (i.e., seeking social support for instrumental reasons and substance use)  $.80 > R^2 > .70$ , while three (i.e., restraint coping, seeking social support for emotional reasons, and turning to religion) showed an inadequate fit ( $R^2 < .70$ ). 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 23.8%.

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 (%)
<i>Factors obtained after PCA</i>				
I – Venting of emotions and seeking social support	.06	.31	.89	8.75
II – Hedonic escapism	.14	.47	.98	3.64
III – Problem solving and cognitive restructuring	.11	.45	.96	5.71
<i>Problem-focused coping</i>				
Active coping 1	.11	.38	.96	6.01
Active coping 2	.08	.50	.96	5.64
Planning	.08	.51	.96	5.04
Suppression of competing activities	.05	.34	.94	7.44
Restraint coping	.10	.13	.55	15.48
Seeking social support for instrumental reasons	.04	.11	.75	10.94
<i>Emotion-focused coping</i>				
Seeking social support for emotional reasons	.05	.17	.43	17.10
Positive reinterpretation and growth	.09	.48	.96	5.92
Acceptance	.06	.15	.93	8.05
Turning to religion	.06	.16	-.14	23.83
Denial	.10	.40	.97	4.58
<i>“Less useful”</i>				
Behavioral disengagement	.09	.46	.97	4.36
Mental disengagement	.11	.35	.97	4.09
Focus on and venting of emotions	.04	.55	.87	10.47
<i>Recently developed</i>				
Humor	.11	.37	.99	3.13
Substance use	.09	.24	.72	14.31
<i>Strategies of reinterpretation, humor and restraint</i>				
Growth	.07	.41	.97	5.65
Positive reinterpretation	.09	.40	.91	8.01
Positive humor	.09	.36	.99	3.45
Hedonic humor	.13	.38	.96	6.05
Problem restraint	.07	.17	.95	5.84
Avoidant restraint	.09	.35	.95	4.88

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

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 (%)
<i>CISS scales</i>				
Task-oriented coping	.09	.65	.94	6.10
Emotion-oriented coping	.14	.61	.98	4.46
Avoidance-oriented coping	.12	.37	.96	6.10
Distraction	.11	.42	.96	4.37
Social diversion	.09	.26	.93	9.37
<i>Mental health indicators</i>				
Overall hope	.04	.61	.98	3.68
Hope pathways	.03	.57	.98	3.69
Hope agency	.04	.51	.98	3.68
Mental health problems	-.01	.41	.97	4.27
Self-esteem	.05	.38	.98	4.50
TABP	.02	.28	.98	3.77

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 7.01%, 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.

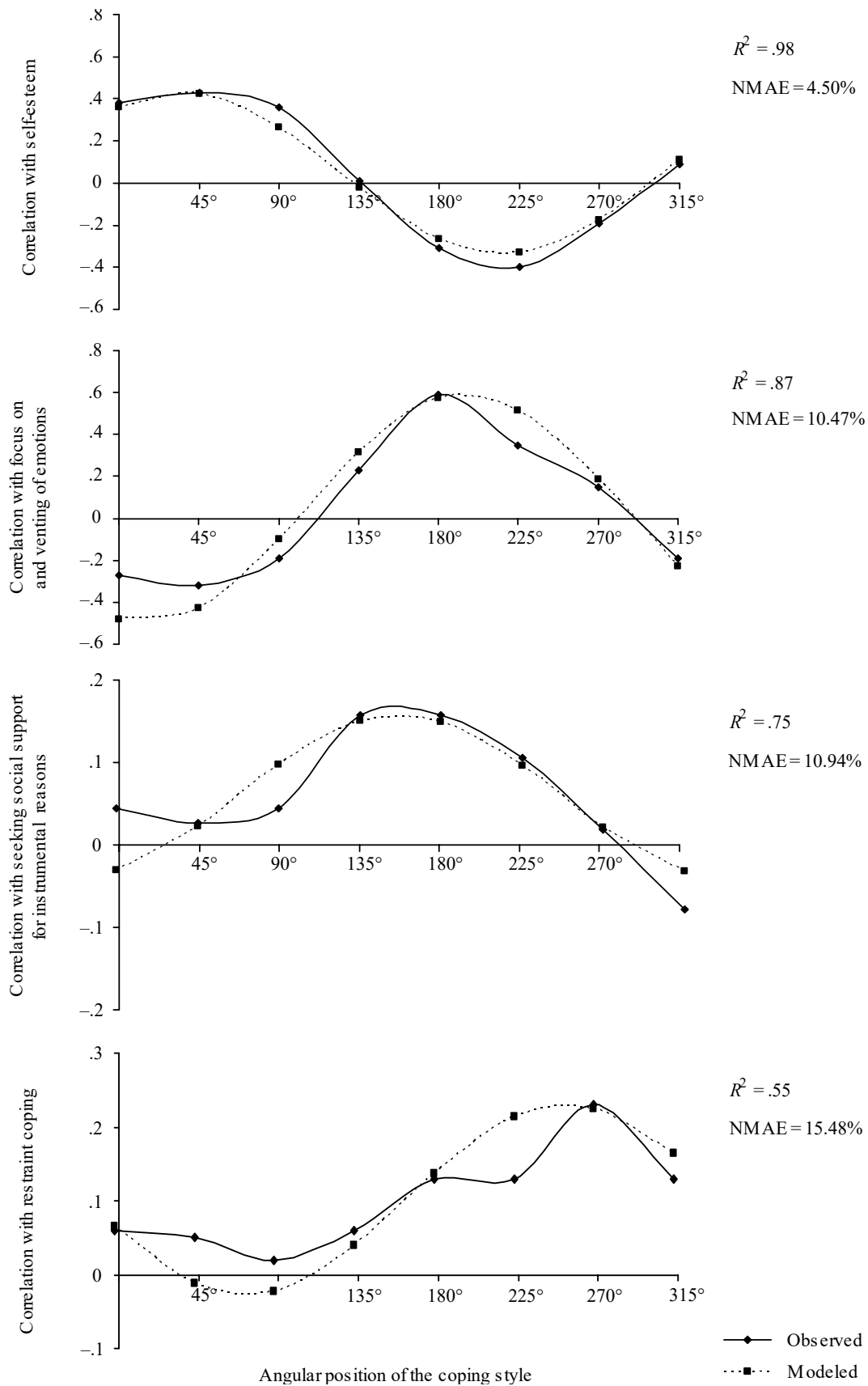


Figure 14. Correlation patterns between CCM coping styles and self-esteem, focus on and venting of emotions, seeking social support for instrumental reasons and restraint coping as a cosine function of their angles.

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

## Chapter 7

### Discussion<sup>3</sup>

#### 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, 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.

A good example of a model integrating multiple traits, values and affect constructs is the Circumplex of Personality Metatraits (Strus et al., 2014; Strus & Ciecuch, 2017). Similarly, 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, MDS, as well as

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<sup>3</sup> “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.”

randomization tests) 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 – Efficiency and Helplessness 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 (ipsative) 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 Problem avoidance in raw scores. The difference in ipsatized Problem avoidance was on the border of statistical significance. Contrary to expectations, gender differences were not found for Helplessness. Therefore, hypothesis 3 was partially confirmed. 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) as well as those akin to Problem avoidance, i.e., avoidance-oriented coping (Cohan et al., 2006; Endler & Parker, 1990b; Endler & Parker, 1994; Howerton & Gundy, 2009; Watanabe et al.,

2015). Also 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 Helplessness. 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 Helplessness scale there are only a few items of the kind. Non-coping research has demonstrated that women score higher on negative emotionality (Schmitt, Realo, Voracek, & Allik, 2008).

Furthermore, in the presented investigation men were more likely to engage in Problem solving and Positive emotional coping than women, which was not predicted in 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, Tyrka, Price, & Carpenter, 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. 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/Helplessness 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, Efficiency and Positive emotional coping, as well as its negative correlation with Helplessness, have been indicated in the literature on coping (Siu, Spector, Cooper, & Donald, 2001) and the problem solving orientation (D’Zurilla, Maydeu-Olivares, & Kant, 1998). Problem-focused coping has been found to be positively associated with age (Hertel, Rauschenbach, Thielgen, & Krumm, 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 Efficiency, while negative problem orientation and avoidance resemble Helplessness 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 strategies 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 strategies 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 above .70. According to correlation analysis, the variances of Helplessness and emotion-oriented coping were shared in 56%, whereas those of Problem solving and task-oriented coping in 55%.

However, some disparities between the hypothesis and the results were also found. 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). However, it should be noted that its correlations with Problem solving and Preoccupation with the problem were almost identical. Contrary to predictions, two other constructs were not located within one coping style, but between two styles. Behavioral disengagement was assigned to both Problem avoidance and Helplessness, although it was closer to Problem avoidance, in line with the hypothesis. In particular, one item from this scale (“I admit to myself that I can’t deal with it, and quit trying”; Carver et al., 1989) is similar to Helplessness. Carver et al. (1989) theorized that behavioral disengagement is linked to helplessness and is endorsed when poor coping outcomes are expected. Furthermore, in the presented research task-oriented coping was associated with Problem solving and Efficiency, 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 Efficiency. 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  $120^\circ$  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  $28^\circ$  in angular locations and .39 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 Helplessness. 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 13° and 4° and differences in vector lengths were .10 and .12, respectively. Unfortunately, the CISS and COPE were administered 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 272° and the latter to 89°, the difference in angular location between them is 183°, which confirms their opposition.

The constructs extracted to date from the COPE and Brief COPE include adaptive and maladaptive coping (Dawson, Allen, Marston, Hafen, & Schad, 2014; Gloria & Steinhardt, 2016; Merrill & Thomas, 2013; Moore, Biegel, & McMahon, 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, Helplessness 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 strategies 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 strategies 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 strategies 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 strategies 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. In turn, 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), represented different regions of the CCM. Examples of positive and negative religious coping are benevolent religious reappraisal (referring to

Efficiency) and punishing God reappraisal (similar to Helplessness), 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 strategy poorly related to CCM styles is acceptance. It is worth noting that, analogously to turning to religion, acceptance can be interpreted in various ways. Different forms of acceptance seem to be reflected in different CCM scales, e.g., Efficiency (“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 strategies 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 social coping responses deserve a separate discussion as they are a special case of constructs problematic in terms of CCM integration. Both COPE scales of seeking social support revealed a weak association with the circumplex, while social diversion from the CISS showed a stronger relationship. It seems that social forms of coping may be represented in the CCM in three ways. First, social coping responses could be located in different areas of the circumplex. Second, it is conceivable that an exhaustive description of coping structure would require a third dimension, namely, social-focused coping. In that case, one should consider a spherical structure of coping, similar to that of vocational interests (Tracey & Rounds, 1996). Then, the question would arise as to whether the additional dimension is bipolar, and, if so, what poles it contains.

There is yet a third option as, the CCM can 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. At this stage, it would be premature to accept or reject any of these possible relationships between social coping and the CCM.

**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 strategies 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 Efficiency, whereas the higher-order factors from Stowell et al. (2001) and Kallasmaa and Pulver (2000) have a similar conceptual scope to Efficiency 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 Efficiency, and positive reinterpretation with Positive emotional coping. In the presented study, growth was shown to be linked to Efficiency and Problem solving, while positive reinterpretation to Positive emotional coping and Efficiency. Thus, it can be seen that the CCM differentiated between strategies within the coping mode of reinterpretation. The obtained empirical locations were slightly different from the hypothesized ones, but they 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 Efficiency. However, in the second study humor revealed only slightly weaker loadings on other factors incorporating avoidance strategies. It seems that in that part of research humor was positively linked to both Efficiency 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 between Positive emotional coping and Hedonic disengagement, 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 are only slightly different from expectations (in the case of positive humor). Positive humor was hypothesized to be strongly correlated only with Positive emotional coping. 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  $176^\circ$ . 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 and hope were most closely linked to Efficiency. According to the hypothesis, mental health problems were related to Helplessness, but they also revealed a weaker relationship with Negative emotional coping. As in the vector method, in regression analysis hope, self-esteem, and mental health problems were linked to the Efficiency–Helplessness dimension. Helplessness 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 Efficiency was linked to mental health indicators (according to expectations), but not as consistently as Helplessness and Problem solving.

Regressions demonstrated that the TABP was related to Preoccupation with the problem, as expected. However, although the vector method also revealed the TABP to be strongly associated with Preoccupation with the problem, it was actually located between that construct and Negative emotional coping. Therefore, the TABP was related also to Negative emotional coping, which is not entirely consistent with the hypothesis. This may be due to the employed TABP scale (FTAS), which is more closely correlated with general emotional distress as compared to other TABP instruments (Smith & O’Keeffe, 1985; Suls & Wan, 1989). Moreover, results based on the FTAS are characterized by larger errors than others owing to the weak reliability of the Polish version of this instrument (Juczyński, 2012).

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 Efficiency–Helplessness 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 Efficiency–Helplessness and Problem solving being particularly important in this respect.

It should be noted that, as it was theorized in Chapter 3, Efficiency and Helplessness 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, Smoski, & Robins, 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 Efficiency 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, Hanley, Farb, & Froeliger, 2015; Rayan & Ahmad, 2016).

Other hypothetical mechanisms underlying Efficiency and Helplessness 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, Efficiency vs. Helplessness 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 Efficiency 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 Efficiency (vs. Helplessness), 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. 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 Efficiency 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 Efficiency. However, it seems important that Efficiency 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, Wang, Wang, & Cai, 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 Efficiency. However, they are located in slightly different CCM regions, which merits a brief explanation. Self-esteem is placed between Efficiency and Positive emotional coping, while hope with its components is located between Efficiency and Problem solving. Importantly, COPE growth is situated between Efficiency and Problem solving, whereas COPE positive reinterpretation between Efficiency and Positive emotional coping. These two areas of the circumplex (i.e. Efficiency/Positive emotional coping and Efficiency/Problem solving) can be related to two types of adaptation processes, i.e., adaptation and transgression (Oleś & Sobol-Kwapińska, 2013). Adaptation reflects a tendency to find an optimal fit between individual dispositions and environmental requirements, whereas transgression involves the ability to develop and to become mature.

In addition to Efficiency and Helplessness, 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, DiGiuseppe, & Froh, 2006), and emotion regulation (Aldao et al., 2010). Problem-focused coping/task-oriented coping is usually associated with lower mental health problems (Bouteyre, Maurel, & Bernaud, 2007; Endler & Parker, 1990b; Li et al., 2006) and higher levels of well-being (Kato, 2013). 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 Helplessness was related to mental health indicators more consistently than Efficiency. 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 Efficiency vs. Helplessness 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 strategies 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, Folkman, & Bostrom, 2001). When perceived control is low, strategies similar to Hedonic disengagement, i.e., humor (Eisengart, Singer, Fulton, & Baley, 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 strategies (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, 2013; 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  $35^\circ$  with a vector length of .55, which means that it is linked to Efficiency – 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 (Cooke et al., 2007). Lysaker, Campbell, and Johannesen (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 Efficiency, 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, Calhoun, & Cann, 2007), spiritual development (Calhoun, Cann, Tedeschi, & McMillan, 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, Rabe, Karl, & Maercker, 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 Efficiency, 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, Davidson, & Frances, 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 dimensions of Efficiency and Helplessness. For example, cognitive

biases in depressed individuals and trauma victims are similar to the cognitive responses included in Helplessness 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 Efficiency. Similarly, hope (related to Efficiency) has been found to be a mechanism of change during cognitive therapy for PTSD patients (Gilman, Schumm, & Chard, 2012). In cognitive therapy, change in cognitive processes can be interpreted as a transition from Helplessness to Efficiency. 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, Chung, Wong, Lien, & Yang, 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, Stanton, and Bower (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/Helplessness, accepting one's emotional responses is similar to Positive emotional coping/Efficiency, 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: Efficiency vs. Helplessness and Preoccupation with the problem vs. Hedonic disengagement. In relatively controllable situations Efficiency 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 Efficiency (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 Efficiency 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 Efficiency is Helplessness, which can be harmful regardless of situation controllability (Fournier, de Ridder, & Bensing, 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 Efficiency 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 Helplessness is strongly linked to distress, while Hedonic disengagement is unrelated or moderately positively correlated

with distress. In uncontrollable conditions, Efficiency and Hedonic disengagement are probably most adaptable. Under low control, Helplessness and Preoccupation with the problem may be harmful. It may be hypothesized that Efficiency is functional regardless of the situation (or useful in the widest spectrum of situations) and Helplessness 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 strategies 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, semistructured interviews), on diverse age groups, and in other languages and cultures. The lack of analysis of relationships between the CCM styles and selected constructs from the Circumplex of Personality Metatraits (CPM) can be regarded as the third shortcoming of the current study. The CPM, which successfully integrated a variety of personality, affect and motivational constructs, represents a similar geometric approach. Thus, establishing clear links between the two circumplex models would be valuable in itself and could elucidate some problematic relationships between coping and personality (Connor-Smith & Flachsbart, 2007).

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.



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## **Appendix**

**Coping Circumplex Inventory (CCI) (Original Polish Version)**

Inwentarz KIRSS  
K. Stanisławski, 2018

płeć: K M wiek: .....

Poniżej znajdują się opisy różnych reakcji ludzi na trudne sytuacje. **Określ jak reagujesz, gdy znajdujesz się w trudnej i stresującej sytuacji.**

W każdym pytaniu zaznacz jedną odpowiedź:

- 1 – bardzo rzadko  
2 – rzadko  
3 – od czasu do czasu  
4 – często  
5 – bardzo często

1.	Tworzę strategię działania i realizuję ją od razu.	1	2	3	4	5
2.	Wyobrażam sobie, że problem nie istnieje i staram się odprężyć.	1	2	3	4	5
3.	Czuję napięcie i presję.	1	2	3	4	5
4.	Zauważam w trudnej sytuacji coś ciekawego i pozytywnego.	1	2	3	4	5
5.	Rezygnuję z poszukiwania rozwiązania i zajmuję się czymś innym.	1	2	3	4	5
6.	Umiem odpocząć tylko wtedy, gdy rozwiążę problem.	1	2	3	4	5
7.	Zauważam w tym coś śmiesznego.	1	2	3	4	5
8.	Mierząc się z problemem mam wrażenie, że moje wysiłki są bezcelowe.	1	2	3	4	5
9.	Staram się przewidzieć bieg zdarzeń i być o jeden krok do przodu.	1	2	3	4	5
10.	Spotykam się ze znajomymi, problem może poczekać.	1	2	3	4	5
11.	Stres wywołuje u mnie silne emocje.	1	2	3	4	5
12.	Gdy dzieje się coś nieprzyjemnego, nie tracę poczucia, że na świecie jest dużo dobrego.	1	2	3	4	5
13.	Chcę jakoś przeczekać trudną sytuację.	1	2	3	4	5
14.	Wyobrażam sobie różne scenariusze i nie zostawiam problemu na później.	1	2	3	4	5
15.	Gdy coś mi nie wychodzi, staram się być dla siebie wyrozumiały/a.	1	2	3	4	5
16.	Nie wiem jak zabrać się za rozwiązywanie problemu.	1	2	3	4	5
17.	Kiedy dowiaduję się nieprzyjemnych rzeczy, dopuszczam do siebie różne myśli i staram się wybrać właściwe rozwiązanie.	1	2	3	4	5
18.	Nie angażuję się w rozwiązywanie problemu i nie zamartwiam się.	1	2	3	4	5
19.	Jestem niespokojny/a i dużo myślę o tym, co się dzieje.	1	2	3	4	5
20.	W trudnej sytuacji mogą kryć się nowe możliwości.	1	2	3	4	5
21.	Czekam na to, co przyniesie los.	1	2	3	4	5
22.	Jestem przejęty/a i cały czas się przygotowuję.	1	2	3	4	5
23.	Żartuję z sytuacji.	1	2	3	4	5
24.	Uświadamiam sobie, że problem może okazać się ponad moje siły.	1	2	3	4	5

**Określ jak reagujesz, gdy znajdujesz się w trudnej i stresującej sytuacji.**

W każdym pytaniu zaznacz jedną odpowiedź:

- 1 – bardzo rzadko
- 2 – rzadko
- 3 – od czasu do czasu
- 4 – często
- 5 – bardzo często

25.	Podejmuję różne działania, aby rozwiązać problem.	1	2	3	4	5
26.	Nie szukam rozwiązania i mam wrażenie, że wydarzenia i tak potoczą się po mojej myśli.	1	2	3	4	5
27.	Kiedy dzieje się coś trudnego, jestem krytyczny/a wobec siebie.	1	2	3	4	5
28.	Staram się uporać z problemem i wierzę, że wszystko będzie dobrze.	1	2	3	4	5
29.	Odkładam podjęcie trudnej decyzji na później.	1	2	3	4	5
30.	Nie myślę o swoich potrzebach, tylko całą energię koncentruję na rozwiązywaniu problemu.	1	2	3	4	5
31.	Myślę o czymś, co poprawia mi nastrój.	1	2	3	4	5
32.	Sytuacja jest niejasna i obawiam się czegoś.	1	2	3	4	5
33.	Staram się zrozumieć przyczynę zdarzeń i zapobiec niekorzystnym następstwom.	1	2	3	4	5
34.	Moje dobre samopoczucie jest ważniejsze niż jakiś problem.	1	2	3	4	5
35.	Często myślę o tym co się wydarzyło, aby upewnić się, że nie zrobiłem/am czegoś złe.	1	2	3	4	5
36.	Na trudne sytuacje patrzę z optymizmem i nadzieją.	1	2	3	4	5
37.	Unikam problemu.	1	2	3	4	5
38.	Cały czas się przygotowuję i nie chcę zawieść pokładanych we mnie nadziei.	1	2	3	4	5
39.	Patrzę na problem z innego punktu widzenia i dostrzegam coś, co mnie uspokaja.	1	2	3	4	5
40.	Jestem spięty/a i zastanawiam się czy sobie poradzę.	1	2	3	4	5
41.	Rozważam różne sposoby rozwiązania problemu i wybieram najkorzystniejsze.	1	2	3	4	5
42.	Nie myślę o trudnej sytuacji i czuję, że nie wydarzy się nic nieprzewidywalnego.	1	2	3	4	5
43.	Jestem zaniepokojony/a i mam w głowie natrętne myśli związane z problemem.	1	2	3	4	5
44.	Staram się zobaczyć sytuację z innej perspektywy i zachowuję pogodny nastrój.	1	2	3	4	5
45.	Odkładam problem na później.	1	2	3	4	5
46.	Obawiam się, że nad czymś nie zapanuję i natychmiast przystępuję do działania.	1	2	3	4	5
47.	Gdy ponoszę niepowodzenie, staram się być życzliwy/a wobec siebie.	1	2	3	4	5
48.	Problem znajduje się poza moją kontrolą, a niepowodzenia wyprowadzają mnie z równowagi.	1	2	3	4	5
49.	Staram się przewidzieć konsekwencje moich działań i podejmuję kroki, które uważam za najbardziej właściwe.	1	2	3	4	5
50.	Nie traktuję problemu tak całkiem „serio”.	1	2	3	4	5
51.	Trudne wydarzenia wzbudzają we mnie złość.	1	2	3	4	5
52.	Zauważam w sytuacji coś, co ułatwia podjęcie działań przybliżających mnie do celu.	1	2	3	4	5
53.	Wycofuję się i nie podejmuję prób osiągnięcia celu.	1	2	3	4	5
54.	Mam wrażenie, że jak nie zajmę się sprawą od razu, to wydarzy się coś złego.	1	2	3	4	5
55.	Myślę, że problem nie jest aż tak poważny i udaje mi się odprężyć.	1	2	3	4	5
56.	Jeśli ktoś mnie źle traktuje, to z mojej winy.	1	2	3	4	5

**Określ jak reagujesz, gdy znajdujesz się w trudnej i stresującej sytuacji.**

W każdym pytaniu zaznacz jedną odpowiedź:

- 1 – bardzo rzadko
- 2 – rzadko
- 3 – od czasu do czasu
- 4 – często
- 5 – bardzo często

57.	Patrzę na sytuację z innej perspektywy i dobieram najbardziej adekwatne działania.	1	2	3	4	5
58.	Nie biorę problemu na poważnie.	1	2	3	4	5
59.	W jakiś sposób wywołałem/am trudną sytuację.	1	2	3	4	5
60.	Po kolei realizuję najważniejsze zadania.	1	2	3	4	5
61.	Znajduję w sytuacji coś, co daje mi ukojenie.	1	2	3	4	5
62.	Zarzucam sobie, że nie mam wystarczająco dużo wytrwałości.	1	2	3	4	5
63.	Jestem zniecierpliwiony/a, ale cały czas realizuję plan działania.	1	2	3	4	5
64.	Wiem, że sytuacja jest trudna, ale jestem dobrej myśli.	1	2	3	4	5
65.	Czekam, aż sprawy poukładają się same.	1	2	3	4	5
66.	Staram się dokładnie zrozumieć problem i chcę uniknąć tego, że kogoś zawiodę.	1	2	3	4	5
67.	Po pewnym czasie przestaję poszukiwać wyjścia z sytuacji.	1	2	3	4	5
68.	Zastanawiam się czy postępuję właściwie i myślę, że inni rozwiązują takie problemy lepiej.	1	2	3	4	5
69.	Po kolei pokonuję przeszkody na drodze do celu.	1	2	3	4	5
70.	Zapominam o całym świecie i próbuję zrobić tak dużo, jak tylko jestem w stanie.	1	2	3	4	5
71.	Chcę odpocząć od problemu.	1	2	3	4	5
72.	Nie chcę zmarnować szansy i staram się wszystko dokładnie przemyśleć.	1	2	3	4	5
73.	Mam wrażenie, że spowodowałem/am pojawienie się problemu.	1	2	3	4	5
74.	Wyznaczam plan działania i konsekwentnie go realizuję.	1	2	3	4	5
75.	Muszę zrobić to jak najlepiej, dlatego nie tracę ani chwili i przystępuję do działania.	1	2	3	4	5
76.	Widzę wyraźnie cel i po prostu dążę do jego osiągnięcia.	1	2	3	4	5

Dziękujemy za udział w badaniu!

**English Translation of the CCI Items (Grouped in Scales)**

## CCI

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.
- 

### 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.
- 

#### Efficiency

---

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.
- 

### Helplessness

---

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.
-