**Media Entertainment as a Self-Regulatory Resource: The Recovery and Resilience in
Entertaining Media Use (R²EM) Model**

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Abstract

In recent years, the perspective of media use and its contribution to positive outcomes for its users has been expanded towards the media's potential to facilitate recovery from stress and strain and to support the replenishment of physical and psychological resources. The accumulation of empirical findings in this area calls for a systematization and theoretical integration. The present chapter therefore reviews latest developments in recovery theory and systematically summarizes previous research on the effects of recreational media use. It then proceeds in presenting a new model, the *Recovery and Resilience in Entertaining Media use Model* (R²EM-Model), linking entertainment use to the short-term experience of recovery and to the contribution to long-term development of resilience-enhancing factors. The chapter concludes with a discussion of open questions and future challenges in this field of research.

The notion that media entertainment can be an important tool for self-regulation has a long tradition in entertainment research, dating back to the seminal work by Dolf Zillmann on mood management theory (Zillmann, 1988) and selective exposure (Zillmann & Bryant, 1985). This perspective posits that media users are hedonically-driven to dissipate noxious mood states in order to get into hedonically pleasant states (Knobloch-Westerwick, 2006; Reinecke, 2017) and choose contents, which are “excitationally right” for them (Zillmann, 1991, p. 111).

More recently, this perspective has been expanded by research demonstrating that the self-regulatory effects of media entertainment exceed the optimization of mood and arousal by far. A growing body of evidence suggests that both interactive and non-interactive entertainment media have a strong potential to facilitate recovery from stress and strain and to support the replenishment of physical and psychological resources (Reinecke, 2009a; Reinecke & Eden, 2017; Rieger, Reinecke, Frischlich, & Bente, 2014). Over the past decade, numerous media characteristics (e.g., interactivity, affective valence) as well as process components (e.g., positive vs. negative affect, involvement, character attachment) that drive media-induced recovery have been identified.

This multitude of empirical findings calls for a systematization and theoretical integration. In a first step, the present chapter will thus review latest developments in recovery theory and systematically summarize previous research on media-induced recovery. In a second step, we aim at providing a theoretical synthesis that addresses two central limitations of previous research: 1) Although previous research on media-induced recovery has identified numerous processes and media characteristics that link recovery and entertainment media use, a systematic theoretical integration of the literature on recovery and entertainment experience is missing. 2) Previous research has exclusively focused on the short-term effects of entertaining media use on recovery. How entertainment experiences affect the long-term

adaptation to stressors and potentially traumatic events remains largely unclear. We thus aim at providing a salutogenic perspective on media use that conceptually links media entertainment to the long-term development of resilience. For these purposes, we develop and introduce the *Recovery and Resilience in Entertaining Media use Model* (R²EM-Model). The chapter concludes with an outlook on open question and future challenges in this field of research.

Recovery: Theoretical Conceptualizations and Empirical Findings

Recovery is a crucial precondition for health and well-being when we are faced with the frequent demands of everyday life: only if we ‘re-charge our batteries’ and leave the burdens of everyday work and daily hassles behind us can we successfully cope with daily challenges. Work and other demanding activities consume our physical and mental resources, leaving us in a state of fatigue and need for recovery (Craig & Cooper, 1992; Fuller et al., 2003). Successful recovery and the replenishment of depleted resources is essential for upholding our well-being, whereas longer phases of insufficient recovery and prolonged stress and fatigue significantly increase the risk of mental or physical illness (Sluiter, de Croon, Meijman, & Frings-Dresen, 2003; Sonnentag & Zijlstra, 2006; van Amelsvoort, Kant, & Swaen, 2003). Recovery thus clearly represents a crucial facet of self-regulation. Yet, what exactly is recovery and what processes help us to recuperate from stress and strain?

Answers to these questions mainly stem from organizational psychology that has systematically explicated the theoretical concept of recovery for more than three decades (for a recent review, see Sonnentag, Venz, & Casper, 2017). Recovery can be defined as “the process of replenishing depleted resources and rebalancing suboptimal systems” (Sonnentag & Zijlstra, 2006, p. 331). The recovery concept can be further differentiated into recovery *processes* (i.e., the psychological mechanisms, experiences, and activities that lead to the restoration of resources) and recovery *outcomes* (i.e., the psychological state that is reached

after a recovery period) (Sonnentag & Geurts, 2009). Over the past decade, a number of theoretical approaches and models have been developed to provide better insights into the recovery process and to identify the ‘ingredients’ of successful recovery. In the following, the most influential models and their central propositions are summarized (for a similar overview, also see Reinecke & Eden, 2017).

As one of the earliest theoretical explications of the recovery process, the *Effort-Recovery Model*, focusses on the psychobiological reactions resulting from stress and situational demands (Meijman & Mulder, 1998). The (work-) demands and challenges we are facing in everyday life lead to the mobilization of effort and energy expenditure. Such work-load results in physiological (e.g., elevated cortisol levels, accelerated heart rate) and psychological (e.g., negative affect or fatigue) load reactions (Geurts & Sonnentag, 2006). These load reactions are reversible: when the resources that were depleted by work load and situational challenges are no longer demanded and the individuals has the opportunity to rest, they can return to pre-stressor levels (Geurts & Sonnentag, 2006; Meijman & Mulder, 1998). However, when the psychobiological system cannot stabilize and return to baseline levels after the secession of effort expenditure or when depletion proceeds over a longer period of time, load reactions can accumulate (Geurts & Sonnentag, 2006). Such chronic strain reactions significantly increase the risk for impaired psychological and physiological health (Demerouti, Bakker, Geurts, & Taris, 2009; Geurts & Sonnentag, 2006).

More recent models of recovery, such as the *Stressor-Detachment Model* (Sonnentag & Fritz, 2015), provide a more complex understanding of the recovery process by identifying additional sub-components and mechanisms of recovery. The Stressor-Detachment Model puts a special emphasis on the spill-over of stress and increased arousal and activation between phases of demand and rest. According to the model, the confrontation with demands and stressors is associated with increased levels of negative arousal and activation (Sonnentag

& Fritz, 2015). These heightened levels of activation do not cease right after the end of demands and effort expenditure. Rather, stress, arousal, and rumination continue into phases of rest and make it difficult for the individual to detach from work, stress, and strain (Sonnentag & Bayer, 2005). Consequently, in contrast to the Effort-Recovery model that identifies the acute load reactions resulting from situational demands as most detrimental for the psychobiological system, the Stressor-Detachment Model considers the sustained negative activation beyond the actual stress- and demand-inducing situation as the crucial challenge for recovery. Accordingly, the model suggests that the mere absence of demand is not a sufficient precondition for recovery and that psychological detachment, that is, the ability to “disengage oneself mentally from work” (Sonnentag & Fritz, 2007, p. 205), is a crucial mechanism in the process of recreation. A growing number of studies demonstrates that psychological detachment is a significant and positive predictor of health and well-being (e.g., Feuerhahn, Sonnentag, & Woll, 2014; Sonnentag & Bayer, 2005; Sonnentag, Binnewies, & Mojza, 2010; Sonnentag & Fritz, 2007). Overall, this evidence suggest that “letting go” (Sonnentag & Fritz, 2015, p. S74) of strain-related experiences in fact is a crucial component of the recovery process.

Yet an additional dimension of the recovery processes is represented in the theoretical perspective of the Conservation of Resources Theory (COR; Hobfoll, 1989, 1998; Hobfoll, Halbesleben, Neveu, & Westman, 2018). In contrast to the Effort-Recovery and the Stressor-Detachment model that both focus on the psychobiological mechanisms involved in strain and recovery, COR takes a more holistic view on the resources of individuals and their role for the recovery process. The basic tenet of COR is that human behavior is generally motivated by the attempt to retain, protect, foster, and (re-)built resources (Hobfoll, 1989; Hobfoll et al., 2018). Within COR, 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). Resources can occur in more tangible form (e.g., a car, money, tools for work) or refer to personal and psychological features of the individual (e.g., tenure or seniority, skills, self-efficacy, or optimism) (Hobfoll et al., 2018). The COR perspective crucially extends our understanding of recovery processes in at least two important ways. First, it emphasizes the diversity of resources that play a role in the recovery process: beyond psycho-physiological load reactions, such as arousal, affect, and fatigue, more complex resources such as self-esteem, mastery, or autonomy can also be depleted by (work) demands and efforts and play a vital role in the recovery process (Hobfoll & Shirom, 1993; Sonnentag & Fritz, 2007; Sonnentag et al., 2017). Second, individuals do not only strive for retaining depleted resources, they are also motivated to build up a surplus of new, additional resources that provide a buffer against resource depletion when confronted with challenges and demands in the future (Hobfoll, 1998; Hobfoll et al., 2018; Hobfoll & Shirom, 1993). Accordingly, successful recovery is more than the mere stabilization of the psychobiological system and the return of resource to pre-stressor baseline levels, but extends to the acquisition of more complex resources that provide the individual with additional coping capabilities (Demerouti et al., 2009; Hobfoll & Shirom, 1993; Sonnentag et al., 2017).

The work reviewed above clearly demonstrates the complexity of the recovery process and the diversity of theoretical perspectives in the research context. The concept of *Recovery Experience* (Sonnentag & Fritz, 2007; Sonnentag et al., 2017) provides an integrative framework that connects the basic assumptions of the aforementioned recovery models into an overarching theoretical view on the different components of successful recovery. Sonnentag and Fritz (2007) identified four positively related but conceptually distinct recovery experiences that represent the central experiential facets underlying the recovery process. The first two dimensions, 1) *psychological detachment* and 2) *relaxation* incorporate the psychobiological perspective represented in the Effort-Recovery and the Stressor-Detachment model. Accordingly, these two recovery dimensions refer to the process of

psychological distancing from stress and the return of negative activation and mood to baseline levels. The other two recovery dimensions, 3) *mastery experience* and 4) *control* integrate the more agentic and resource-oriented view represented in the COR perspective. While mastery experiences are triggered by challenging situations that are successfully resolved by the individual, control refers to the experience of self-determination in phases of rest (Sonnentag & Fritz, 2007). A fast growing body of empirical research has linked the four recovery facets to a wide range of well-being indicators and numerous recovery outcomes, such as increased satisfaction with life (e.g., Lee, Choo, & Hyun, 2016), positive and negative affect (Fritz, Sonnentag, Spector, & McInroe, 2010) and work performance (Binnewies, Sonnentag, & Mojza, 2010). For a more comprehensive review of the effects of recovery experience, also see Sonnentag et al. (2017).

Media-Induced Recovery: A Review of the Extant Literature

As discussed in the previous section, recovery is a vital component of self-regulation and an important predictor of numerous health outcomes and general well-being. From an entertainment research perspective, it is thus of highest relevance to understand, how successful recovery is obtained in everyday life and what role media use plays within the recovery process. A growing body of recovery research has addressed the role of different *activities* as predictors and drivers of recovery (Demerouti et al., 2009; Ragsdale, Beehr, Grebner, & Han, 2011; Sonnentag, Binnewies, & Mojza, 2008; Sonnentag et al., 2017). A central categorization of different recovery-related activities is the differentiation of *resource-providing* versus *resource-consuming* activities (Fritz & Sonnentag, 2006; Ragsdale et al., 2011).

Resource-providing activities incorporate all forms or activities that support the recovery process either by putting no further demands onto the individual or by providing opportunities for positive experience or building up new resources (Fritz & Sonnentag, 2006).

A sub-category of resource-providing activities are *low-effort activities*, such as taking a nap or resting on the couch (Sonnentag, 2001). Such activities are characterized by low effort expenditure, allow the psychobiological system to return to pre-stressor baseline levels and have been empirically linked to increased recovery (Oerlemans & Bakker, 2014) and to relaxation in particular (ten Brummelhuis & Bakker, 2012). Other resource-providing activities that also show positive relationships with recovery experience and recovery outcomes include *social activities*, such as meeting friends or dining out (Oerlemans & Bakker, 2014; Sonnentag, 2001), *physical activities*, such as sports and exercise (Feuerhahn et al., 2014) or *hobbies and creative activities* that provide opportunities for mastery experience and knowledge acquisition (Demerouti et al., 2009; Winwood, Bakker, & Winefield, 2007).

In contrast to resource-providing activities, resource-consuming activities further deplete the resource of the individual and prolong the negative effects of stress and load-reactions (Ragsdale et al., 2011; Sonnentag, 2001). Two prominent examples of resource-consuming activities are *work-related activities* (Oerlemans & Bakker, 2014) as well as *household and childcare activities* (Sonnentag, 2001; Sonnentag & Zijlstra, 2006) performed during leisure time. Instead of providing opportunities for rest, resource acquisition, and unwinding, such activities represent additional demands, produce and prolong load reactions and impair the recovery process (Demerouti et al., 2009).

The research review above clearly suggests that the activities performed during phases of rest crucially influence the recovery processes. What role, then, does media use in general and media entertainment in particular play in the recovery process and how does it relate to the categories of leisure activities discussed above?

Whereas recovery processes and outcomes have only recently found their way into research in media psychology and communication, a wide range of traditional media uses and effects studies have linked media exposure to recovery *implicitly*. There is broad evidence that

media have the potential for facilitating escapism and distracting media users from the sorrows of everyday life (Henning & Vorderer, 2001; Katz & Foulkes, 1962; Kubey & Csikszentmihalyi, 1990; also see Halfmann & Reinecke in this volume for a discussion of the relationship between escapism and recovery). Additional evidence for the detachment and relaxation potential of media use comes from related research mood management theory. Media use is considered a particular attractive option for mood regulation because it is an easily accessible and highly customizable feature of one's environment (Bryant & Zillmann, 1984). Furthermore, research referring to mood management theory has repeatedly demonstrated the strong intervention potential of non-interactive media use and its ability to interrupt ruminations about negative events and stressor (Knobloch-Westerwick & Alter, 2006; Reinecke, 2017; Zillmann, 1988, 1991). In recent work on mood management through new, interactive media, Bowman and Tamborini (2012, 2013) found that following boredom and stress, playing video games of moderate intervention potential resulted in the highest levels of post-gameplay mood repair (2012) and these games were most often selected by individuals in an effort to regulate their moods (2013). Relatedly, it was found that video games can direct attention away from unpleasant emotions (Rieger, Frischlich, Wulf, Bente & Kneer, 2015).

Besides this implicit evidence of the recovery potential of media entertainment, a growing number of studies has also linked the usage of media content to specific recovery outcomes more *explicitly*. Based on cross-sectional survey data, Reinecke (2009a, 2009b) demonstrated that using entertaining video games is strongly related to all four recovery experiences identified by Sonnentag and Fritz (2007), both during work hours (Reinecke, 2009b) as well as during leisure time (Reinecke, 2009a). The beneficial effects of video games for recovery purposes were further differentiated by Collins & Cox (2014) who found that video games genres differ regarding their recovery outcomes with strongest effects for first-person shooters and action games. Beyond the mere recovery *experience*, experimental

research has further demonstrated that the subjective experience of recovery during media use was related to positive recovery *outcomes* such as vitality and work satisfaction (Collins, Cox, Wilcock, & Sethu-Jones, 2019; Janicke, Rieger, Reinecke, & Connor, 2017; Reinecke, Klatt, & Krämer, 2011; Rieger et al., 2014), positive affect (Rieger & Bente, 2018) or cognitive performance (Reinecke et al., 2011; Rieger, Hefner, & Vorderer, 2017; Rieger, Reinecke, & Bente, 2017). These findings demonstrate that media-induced recovery experiences form a link between media consumption and subjective (e.g., work satisfaction, vitality and positive affect) as well as more objective indicators of well-being (e.g., cognitive performance). Positive associations between media use and recovery experience as well as different recovery outcomes have been reported for a wide range of *media genres* and different *media stimuli*, including video games in general (e.g., Reinecke et al., 2011) and different game genres in specific (Collins & Cox, 2014), short video clips and YouTube videos (e.g., Janicke et al., 2017; Rieger, Reinecke, et al., 2017), movie consumption (e.g., Rieger & Bente, 2018), as well as smartphone use (e.g., Rieger, Hefner, et al., 2017).

In addition to documenting the effects of media use on recovery, previous research has also attempted to understand the *underlying mechanisms* responsible for these beneficial effects. In an experiment, Reinecke, Klatt, and Krämer (2011) manipulated the level of *interactivity* in media stimuli and compared interactive and non-interactive media content regarding their potential to foster recovery. They found that interactivity increased users' *involvement* which, in turn, was positively associated with recovery experiences. While relaxation was higher in the non-interactive conditions, interactivity was associated with elevated levels of mastery and control experiences. Subjective recovery experiences were positively associated with cognitive performance. In sum, these results suggest that interactive versus non-interactive media show differential patterns in recovery experience and that involvement can be regarded an important mediator between media use and positive recreational effects. In a further study, Rieger, Hefner, and Vorderer (2017) addressed the

recovery potential of interactive media use in the context of mobile communication. In their study, smartphone use during a work break was negatively associated with relaxation but positively related to control experiences. Only control experiences, in turn, showed positive relations to cognitive performance (Rieger, Hefner, et al., 2017).

In addition to comparing interactive vs. non-interactive media, other research has explored the role of the *affective valence* of media content for recovery. To this end, research by Rieger, Reinecke & Bente (2017) compared the recovery effects of video stimuli with positive (i.e., a comedy) versus negative affective valence (i.e., a tragic drama). Results found that not only was the negative media stimulus as capable as positive media content to contribute to the subjective recovery experiences, but it even lead to higher levels of self-reported involvement and vitality. Video clips of positive affective valence, in contrast to those with negative valence, led to higher relaxation than the non-media control condition. However, both media conditions (positive as well as negative) increased performance in a concentration task compared to the control condition.

Other research has addressed the role of *media character type* for media-induced recovery. In an experiment by Krakowiak and Tsay-Vogel (2018), the recovery effect of reading short stories featuring a morally good, bad, or ambiguous main character was tested when participants' morality was made salient (virtue versus vice condition). The results demonstrate that character type had no effect on media-induced recovery experience of those participants whose virtues were made salient. Participants in the vice condition, however, reported higher psychological detachment and relaxation after exposure to a story featuring morally good or ambiguous characters as compared to exposure with a morally bad character. This suggests that a fit between the situational needs of media users and content characteristics is crucial for successful recovery: When people's moral self-perceptions are threatened, exposure to more positively valenced (or ambivalent) characters provide efficient

recovery resources. The bad character condition may have reminded these individuals of their own moral wrong-doings, thus impairing psychological detachment and relaxation (Krakowiak & Tsay-Vogel, 2018).

Further underlining the complexity of media-induced recovery, additional research suggests that *situational demands and resources* on the side of the media user are important determinants of recovery effects. A survey study by Reinecke, Hartmann and Eden (2014) suggests that the volitional state of media users might influence the recovery process. Their data demonstrated that ego-depleted individuals, that is, individuals suffering from temporarily impaired self-control capacity, showed a higher tendency to interpret their media use as a form of dysfunctional procrastination. As a result, ego-depletion increased negative self-conscious emotions, such as feelings of guilt, associated with using entertainment which was negatively related to the recovery experience. Consequently, depleted media users benefited less from media-induced recovery even though they had a greater need for recovery (Reinecke et al., 2014).

Recovery and Media Entertainment: Reciprocal Influences?

In sum, the researched reviewed above clearly suggests that entertaining media use has a strong recovery potential, is associated with the full spectrum of recovery experiences identified by Sonnentag and Fritz (2007), and results in numerous recovery outcomes. The moderator (e.g., interactivity, content valence, or character types) and mediator variables (e.g. involvement, affect) identified in previous research strongly resemble those that have also been identified as central drivers of media entertainment (e.g., Oliver, 2009; Vorderer, Klimmt, & Ritterfeld, 2004) At the same time, a systematic integration of entertainment theory and recovery research does not exist. In the following section, we thus develop the first part of our R²EM-Model (see Figure 1) that aims at systematically explicating the theoretical connections between media-induced recovery and media entertainment.

Recently, entertainment theory has undergone a conceptual shift towards so called two-process models of entertainment (Vorderer, 2011; Vorderer & Reinecke, 2015): Traditionally, media entertainment was defined in hedonic terms and as pleasurable affective states (Vorderer et al., 2004). This view was complemented by a second process which was defined in non-hedonic terms, characterized by the satisfaction of intrinsic needs (autonomy, competence and relatedness; described within self-determination theory, see Ryan & Deci, 2000) or the experience of meaning (i.e., eudaimonia; see Hofer & Rieger, 2019; Oliver & Bartsch, 2010). One key dimension that differentiates between hedonic and eudaimonic entertainment experiences is the nature of the accompanying affective responses, with hedonic experiences being predominantly characterized by positive affective states and eudaimonic experiences being characterized by mixed affective responses.

The structure and dimensions of recovery experience show striking similarities with this two-factor view on entertainment experience (Reinecke & Eden, 2017): the recovery facets of psychological detachment and relaxation correspond closely with traditional hedonic views on media entertainment that view pleasure, mood optimization and arousal regulation as central drivers of media entertainment (Bosshart & Macconi, 1998; Zillmann, 1988). The recovery dimensions of mastery and control, on the other hand, are closely connected to the ideas of psychological growth and intrinsic need satisfaction expressed in the concept of eudaimonic entertainment experience (Oliver & Bartsch, 2010; Reinecke et al., 2012; Tamborini, Bowman, Eden, Grizzard, & Organ, 2010). How are media entertainment and media-induced recovery related, then?

Within the field of entertainment research, entertainment experience has frequently been defined as a form of meta-appraisal (Bartsch, 2012; Bartsch, Vorderer, Mangold, & Viehoff, 2008; Hartmann, 2013; Vorderer & Hartmann, 2009). According to this view, media users feel (hedonically or eudaimonically) entertained when they evaluate their primary

affective responses triggered by media stimuli as being conducive to their short- or long-term goals. Such positive appraisal of primary emotions leads to positive meta-emotions (i.e., feelings about emotions) that provide the basis for entertainment experience. Some researchers have explicitly linked this meta-appraisal of primary responses to different self-regulatory goals.

According to Vorderer & Hartmann (2009), primary emotions result in entertainment gratifications when they are reappraised as supportive either of *short-term* mood and arousal regulation goals or of long-term growth and self-realization goals. Hartmann (2013) further develops this notion and describes the relationship between media entertainment, recreation and psychological growth in more detail. According to his conceptualization, *homeostatic regulation*, that is, maintaining physiological states in an optimal range, is tied to pleasure via *alliesthesia*. Alliesthesia research demonstrates that environmental stimuli are perceived as pleasant or unpleasant depending on their contribution to the rebalancing of a sub-optimal systems (Cabanac, 1971, 2010). For example, food is perceived as pleasurable when we are hungry, but much less so when we have just finished a big meal and feel full. Likewise, stimulation may be welcome and experienced as pleasurable when we are under-stimulated and bored, but much less so when we are stressed. Accordingly, media stimuli that support homeostatic regulation either by restoration of physiological resources or by distraction from aversive mood and arousal states should be perceived as pleasurable and thus strongly connected to hedonic entertainment experience (Hartmann, 2013). This has important implications for the theoretical connection of media entertainment and recovery: The concept of homeostatic regulation strongly corresponds with the basic tenets of the Effort Recovery Model (i.e., re-balancing suboptimal systems; Meijman & Mulder, 1998) as well as the Stress-Detachment Model (i.e., disengagement from sustained negative activation; Sonnentag & Fritz, 2015) and the associated recovery facets of psychological detachment and relaxation. Based on the research reviewed above, in the R²EM-Model we thus state that the use of

entertaining media content is connected to the recovery dimensions of psychological detachment and relaxation via homeostatic regulation and the resulting hedonic entertainment experience (see Figure 1).

Beyond the restoration of resources, both Hartmann (2013) and Vorderer and Hartmann (2009) suggest that psychological growth is a second key driver of entertainment. In contrast to homeostatic regulation which profits from media stimuli that are undemanding and thus support the restoration of depleted resources, personal growth goals are best achieved through the mastery of challenges (Hartmann, 2013). Accordingly, Hartmann (2013) suggest that media stimuli provide different levels of cognitive, affective and behavioral challenges. Cognitive challenges result from media stimuli that are difficult to process due to their complexity (e.g., that provide many new information that need to be integrated with existing knowledge structures) or that contain information that is dissonant or inconsistent with existing attitudes or personal values (Bartsch & Hartmann, 2017). Emotional challenges arise from media stimuli that elicit strong negative affect, such as empathic distress experience with response to the suffering of the portrayed protagonists, or fear and disgust elicited, for example, by horror movies (Bartsch & Hartmann, 2017). Finally, behavioral challenges refer to the demands created by interactive media, such as the hand-eye-coordination necessary to master a video game (Hartmann, 2013). While ‘light’ media content is likely to result in hedonic entertainment via homeostatic regulation and alliesthesia, the opportunities for psychological growth afforded by challenging media content should contribute to eudaimonic entertainment experience (Bartsch & Hartmann, 2017; Hartmann, 2013).

With regard to recovery research, the idea of psychological growth strongly corresponds with the key assumptions of Conservation of Resources Theory (Hobfoll, 1989; Hobfoll et al., 2018), which posits the acquisition of new personal resources as a key

mechanism to stress-coping and well-being. Within the concept of recovery experience (Sonnentag & Fritz, 2007), the COR perspective is represented by the recovery facets of mastery and control. Based on the research reviewed above, the R²EM-Model proposes that the use of entertaining media content is connected to the recovery dimensions of mastery and control via personal growth opportunities afforded by media challenges and the resulting eudaimonic entertainment experience (see Figure 1).

The two ‘routes’ from media entertainment to recovery via hedonic vs. eudaimonic experience proposed in the R²EM-Model have received preliminary empirical support. The available results point towards potential differences in the processes underlying recovery via hedonic and eudaimonic media content. In a study conducted by Rieger and Bente (2018), a hedonic movie stimulus was associated with higher levels of relaxation than a eudaimonic movie. The results of an experiment by Rieger et al. (2014) further differentiate the specific recovery effects resulting from hedonic and eudaimonic media stimuli: A hedonic entertainment experience mainly contributed to the recovery dimensions of psychological detachment and relaxation, whereas a eudaimonic entertainment experience was associated with mastery experiences (Rieger et al., 2014). Both ‘routes’ were positively associated with positive recovery outcomes in the form of increased vitality. These findings were replicated in an online experiment by Janicke et al. (2017) for the use of YouTube videos during work hours; videos eliciting a positive affect (i.e., hedonic entertainment) mainly fostered psychological detachment and relaxation and videos eliciting meaningful affect (i.e., eudaimonic entertainment) predominantly fostered mastery experiences.

While the research reviewed above provides initial support for the relationships between hedonic vs. eudaimonic entertainment experience and recovery proposed the R²EM-Model, the *direction* of these effects remains largely unclear. Previous research exploring the relationship between entertainment experience and recovery (Janicke et al., 2017; Rieger &

Bente, 2018; Rieger et al., 2014) has treated recovery experience and other recovery outcomes as *dependent variables* resulting from media entertainment. The theoretical considerations presented by Hartmann (2013), however, suggest the opposite direction of effects such that the processes underlying media-induced recovery (i.e., homeostatic regulation and psychological growth) elicit entertainment experience. In this view, entertainment experience is a result of the successful restoration and expansion of resources via media use, making recovery the *independent variable*.

While the exact nature of the relationship between recovery and entertainment experiences remains a pressing open question for future research, existing findings both from recovery research as well as from entertainment research clearly suggest that situational recovery demands and resource depletion have a significant effect on *selective exposure* to media entertainment. Previous research suggests that individuals suffering from high levels of stress and strain gravitate towards low-effort activities and avoid other, more demanding recovery activities. In a meta-analysis by Fransson et al. (2012), individuals working in high-strain jobs characterized by low job-control and high job-demands, suffered from a significantly increased risk of physical inactivity during leisure time. A diary study by Sonnentag and Jelden (2009) suggests that the effects of job stress on decreased engagement in leisure-time physical activities is mediated by depleted self-regulatory resources: after demanding work-days, the self-regulatory resources necessary to initiate and continue effortful recovery activities are no longer available. As media use in general and ‘low-brow’ forms of media entertainment in particular demand relatively little effort and resources compared to other recovery activities, depleted individuals with a high need for recovery should show a particular strong tendency to use media during leisure time. In line with this idea, previous findings demonstrate that entertainment experiences increase when self-control resources are low (Johnson, Ewoldsen, & Slater, 2015). Consequently, the R²EM-Model proposes that resource depletion should be a positive direct predictor of exposure to media

entertainment (see Figure 1). Indirect support for this notion comes from a study by Wagner et al. (2012). In an analysis of search queries on Google, the authors found a significant increase in entertainment-related searches on the day after the change to Daylight Saving Time, suggesting that the depletion caused by the time-shift increased exposure to entertaining media content.

In addition to increasing the likelihood for media exposure relative to other recovery activities, resource depletion should also have an effect on the within-media selection of specific media content. As discussed above, media stimuli differ substantially with regard to the level of challenge they present to media users. Engaging in challenges, however, is taxing (Hartmann, 2013). As a consequence, media users' willingness to choose cognitively, affectively, or behaviorally challenging media stimuli should vary as a function of their current depletion, with depleted media users gravitating towards unchallenging content that facilitates the restoration of resources (Hartmann, 2013; Hartmann & Eden, 2019, May). This notion is supported by a growing number of studies that provide empirical evidence for the suggested pattern of effects (Eden, Hartmann, & Reinecke, 2015; Eden, Johnson, & Hartmann, 2018; Reinecke et al., 2014). In the R²EM-Model, we thus propose that – in addition to a general preference of media use relative to other recovery activities – resource depletion will also affect within-media selection and result in a preference for unchallenging media content (see Figure 1).

From Recovery to Resilience: A Salutogenic Perspective on Entertaining Media Use

In the previous section, we have systematically linked media-induced recovery and entertainment experience and demonstrated that both constructs show strong mutual relations and reciprocal influences. Furthermore, we have identified a better understanding of the direction of effects between entertainment and recovery experience as a crucial task for future research. In this section, we will address a second major limitation of previous research on

media-induced recovery: its exclusive focus on *short-term* recovery effects. In fact, all empirical studies on media-induced recovery reviewed here explored the role of entertaining media use solely for recovery from short forms of relatively mild everyday stress and strain. As important as recovery from everyday stress and strain may be, it does not represent the full spectrum of stressors and strains that may threaten individual health and well-being. The role that entertaining media use plays for coping with more severe and long-lasting critical life events, such as chronic disease, loss of a spouse, changes in life situation or other potentially disruptive and traumatic events, has received much less systematic attention. This is a major limitation for a comprehensive understanding of media entertainment as a self-regulatory resource. In the following section and the second part of the R²EM model, we thus aim at complementing the short-term recovery effects of media use with a salutogenic perspective on long-term resilience.

The salutogenic perspective was introduced by Aaron Antonovsky (1979, 1996) and represents a marked shift away from the hitherto dominating pathogenic perspective on health and well-being that used to focus primarily on disease and risk-factors for falling ill. The core tenet of salutogenesis, in contrast, is a strong focus on “salutary factors” (Antonovsky, 1996, p.14) that actively promote health. Instead of treating health as a dichotomous condition of being either healthy or ill, salutogenesis posits that the individual is constantly confronted with risks and adversities and moving along on an “ease-dis-ease continuum” (Antonovsky, 1996, p. 14). The reaction to stressors and individual movement between ease and dis-ease is determined by “generalized resistance resources” (p. 15), that is, properties of the individual that facilitate successful coping (Antonovsky, 1996). Strongly related to the salutogenic perspective is the concept of *resilience* (Fletcher & Sarkar, 2013). While salutogenesis is a holistic perspective on health-promoting factors as a whole (Mittelmark & Bauer, 2017), resilience is more strongly focused on overcoming adversities (Fletcher & Sarkar, 2013).

In its most verbatim sense, resilience is concerned with the resources and qualities that help people to “bounce back” (Richardson, 2002, p. 308) and recover quickly from difficult life situations. While many definitions of resilience exist and no consensus concerning concept explication has been reached, a number of reoccurring central characteristics and defining attributes of resilience can be identified (Fletcher & Sarkar, 2013; Gillespie, Chaboyer, & Wallis, 2007; Niitsu et al., 2017; Pangallo, Zibarras, Lewis, & Flaxman, 2015). A common antecedent of resilience found in most definitions is *adversity* (Fletcher & Sarkar, 2013; Gillespie et al., 2007). In order for resilience to occur, the individual must be confronted with a highly disruptive event or condition posing substantial threat (Niitsu et al., 2017). A further defining attribute found in many definitions of resilience is *positive adaptation* (Fletcher & Sarkar, 2013; Niitsu et al., 2017). Adaptation can be considered a continuum (Niitsu et al., 2017): after stress, trauma, and disruption, the individual may a) experience personal growth and a gain in new resources, b) recover and get back to pre-trauma baseline levels of functioning, c) recover with loss (e.g., give up certain motivations, hopes or strivings), or d) reintegrate dysfunctionally, for example through substance abuse or destructive behavior (Richardson, 2002). Positive adaption, that is, successful coping with adversities and recovery from potentially traumatic events without developing psychopathology or resources loss, is thus a key component in most definitions of resilience.

A further conceptual distinction between different theoretical approaches to resilience is its treatment as a *trait-like* construct versus a *process* (Fletcher & Sarkar, 2013; Pangallo et al., 2015). Trait models of resilience usually conceptualize resilience as a set of characteristics and protective or promotive factors that help the individual to positively adapt to adversity (Fletcher & Sarkar, 2013; Pangallo et al., 2015). Proponents of the process perspective on resilience emphasize the dynamic nature of resilience and take into account that protective and promotive factors may vary between contexts as well as temporally. In the R²EM-Model, we follow the perspective of Niitsu et al. (2017) who provide a conceptual bridge between

trait and process perspectives on resilience and suggest that resilience can best be defined as a dynamic process of adaptation following adversity that is facilitated by different protective and promotive factors such as emotion regulation or social support. In the R²EM-Model, we thus distinguish between two levels of resilience (see Figure 1): 1) the long-term development of protective and promotive resilience factors and 2) episodic processes of resilience. Accordingly, the model suggests that trait-like resilience factors that are acquired, reinforced or weakened over the life-course by individual experiences and environmental influences (e.g., exposure to media content), provide the boundary conditions for dynamic processes of positive adaptation to specific instances of adversity.

The extant resilience literature has discussed a plethora of potential protective and promotive resilience factors and a number of systematic reviews have identified key themes and clusters of reoccurring factors (Gillespie et al., 2007; Niitsu et al., 2017; Pangallo et al., 2015). For the R²EM-Model, we chose three resilience factors that are identified in at least two of these reviews: 1) *positive emotions*, such as hope and optimism, are frequently featured in theoretical conceptualizations and empirical measures of resilience (Gillespie et al., 2007; Pangallo et al., 2015) and have been identified as a central mechanism of positive adaptation (e.g., Tugade & Fredrickson, 2004). 2) Furthermore, *self-efficacy*, the confidence in one's ability to perform a specific task or to respond successfully to situational demands (Bandura, 1997), is another reoccurring resilience factor that has been demonstrated to promote positive adaptation, effort expenditure and perseverance in the face of adversity (Gillespie et al., 2007; Pangallo et al., 2015). While both positive emotions and self-efficacy represent *internal* resources situated in the individual, 3) *social support* represents an *external* resource provided by the social environment that helps individuals remain resilient in the face of adversity (Niitsu et al., 2017; Pangallo et al., 2015). In addition to these three resilience dimensions directly deduced from core resilience research, we included a fourth dimension in the R²EM-Model that provides a direct theoretical bridge between the resilience concept and the

perspective of salutogenesis: 4) the *sense of coherence* (SOC; Antonovsky, 1979, 1996).

Within the salutogenic perspective, SOC is discussed as a central resistance resource that “reflects a person’s view of life and capacity to respond to stressful situations” (Eriksson,

2017, p. 95). SOC comprises three subdimensions (Eriksson & Mittelmark, 2017):

comprehensibility, the extent to which the individual can make sense of adversity and perceives internal and external events as rationally understandable and coherent;

manageability, referring to the perception that resources are available to successfully meet the challenges and demands of life; and *meaningfulness*, the perception that life has emotional meaning and the feeling that at least some of the challenges and adversities the individual is facing are worthy of engagement and commitment. SOC has been explicitly addressed as a component or indicator of resilience (Kimhi & Eshel, 2009; Niitsu et al., 2017; Pangallo et al., 2015) and linked to positive adaptation in the context of numerous adversities, such as chronic illness (e.g., Keil, Vaske, Kenn, Rief, & Stenzel, 2017), war (Kimhi & Eshel, 2009), or post-traumatic stress disorder (e.g., Dudek & Koniarek, 2000). It is important to note that the resilience factors integrated in the R²EM are far from representing an exhaustive list. Rather, the selected factors merely represent particularly prominently discussed protective and promotive factors. The model can flexibly be extended to include additional resilience factors, in accordance with the resilience processes of interest (see Figure 1).

What role, then, does media entertainment play for the long-term development of resilience factors? A salutogenic perspective on the long-term effects of media entertainment is still in its infancy. The first and hitherto only systematic attempt to link media effects to a salutogenic perspective comes from Schneider, Halfmann and Vorderer (2019). In their theoretical discussion, Schneider et al. (2019) introduce the salutogenic model of health and discuss how the ubiquitous availability of online content and communication via mobile internet access and smartphones may have beneficial or detrimental consequences for an individual’s sense of coherence. To the best of our knowledge, however, a systematic

discussion of salutogenesis and resilience in the context of entertaining media use does not exist.

A few empirical findings provide preliminary support for the relationship between media entertainment and resilience factors proposed in the R²EM-Model. In a field-experiment by Prestin (2013), daily exposure to a 5-minute video clip featuring an underdog narrative over five consecutive days was associated with increased hopefulness and greater motivation to pursue self-set goals. In an study by Khoo (2016), reflecting upon a drama one had recently viewed was linked to increased self-perceptual depth and a four-week change in self-compassion. Several studies in the context of video game play suggest that the use of interactive entertainment media is associated with feeling of self-efficacy (Trepte & Reinecke, 2011) and facilitates the satisfaction of the need for competence (Koban et al., 2018; Reinecke et al., 2012). Furthermore, the use of online games and membership in e-sports clans has been linked to increased levels of social support and social capital (Trepte, Reinecke, & Juechems, 2012; Zhong, 2011).

In sum, these findings support the notion of a *general* link between entertainment media use and the development of resilience factors. They do not, however, provide insights into the differential role of hedonic versus eudaimonic entertainment experiences. Do both ‘routes’ that link media entertainment to short-term recovery also apply to long-term resilience? A connection between eudaimonic entertainment and resilience appears to be relatively obvious: the confrontation with cognitive, emotional, and behavioral media challenges that provides opportunities for growth and drives eudaimonic entertainment (Hartmann, 2013) should also facilitate the long-term development of resilience factors. Somber entertainment in particular, that depicts the struggling of protagonists with their difficult fate may provide the basis for making sense of the events in once own life, thus increasing the perceived comprehensibility and manageability. For instance, eudaimonic

content provides media users with themes and lessons about life and strategies to deal with human struggles and hardship (Greenwood & Long, 2015; Oliver & Hartmann, 2010; Rieger & Klimmt, 2019). Meaningful entertainment was also found to restore self-esteem after self-threatening situations (Rieger et al., 2015; Rieger & Hofer, 2017). Furthermore, a connection between eudaimonic entertainment experience and perceived meaning and purpose in life is well established in empirical research (Oliver & Bartsch, 2010; Oliver & Raney, 2011) as well as the notion that exposure to meaningful entertainment fosters feelings of elevation and human connection (Janicke & Oliver, 2017) as well as prosocial motivations (Oliver, Hartmann, & Woolley, 2012; Rieger, Frischlich, & Oliver, 2018). Additionally, exposure to sad entertainment content seems to trigger life reflection and lets media users “count their blessings” (p.747), resulting in increased life happiness (Knobloch-Westerwick, Gong, Hagner, & Kerbeykian, 2013). This suggests that eudaimonic entertainment may increase positive emotions such as optimism and hope and provide individuals with a stronger awareness of the available resources in their lives. More recently, eudaimonic entertainment has also been linked to self-transcendent media experiences, involving a “heightened awareness and appreciation of the interconnectedness among humans, nature, and the universe” (Oliver et al., 2018, p. 384). Furthermore, Vorderer & Halfmann (2019; also see the chapter by Vorderer in this volume) suggest that mediated narratives can elicit the experience of aesthetic resonance, helping media users “to come to terms with themselves and with their relationships with others and the world” (p.89). Both self-transcendent media experiences as well as aesthetic resonance may plausibly contribute to the comprehensibility and meaningfulness dimensions of the sense of coherence.

While connections between hedonic entertainment and resilience may be less obvious, we nevertheless believe them to exist. The strong potential of media use to facilitate the optimization of mood and arousal (Zillmann, 1988) that allows media users to block anxious thoughts and repair dysphoric moods even when facing stressful life events (Anderson,

Collins, Schmitt, & Smith Jacobvitz, 1996) suggests that hedonic entertainment experience may not only facilitate short-term recovery but also the development of resilience through more ‘chronic’ forms of positive affect. In fact, this notion is supported by a study from Oliver and Raney (2011) who found a positive association between preferences for hedonic entertainment content and optimism. While the reviewed empirical evidence is far from conclusive, we believe that it provides initial support for potential effects of entertainment experience on resilience. In the R²EM-Model we thus propose that both hedonic as well as eudaimonic entertainment experience will facilitate the long-term development of protective and promotive resilience factors that, in turn, increase the chance for positive adaption to episodic instances of adversity (see Figure 1).

Future Directions and Conclusion

The goals of the present chapter were twofold: First, we wanted to provide a theoretical integration of the recovery concept into recent models of entertainment experience. Second, we aimed at significantly extending prior research by introducing a salutogenic perspective addressing the long-term effects of media entertainment on resilience. For this purpose, we have developed and presented the *Recovery and Resilience in Entertaining Media use Model* (R²EM-Model). While we hope that the R²EM-Model will provide both a guiding framework as well as new impulses to future research on the self-regulatory effects of media entertainment, it also leaves numerous questions unanswered. Most importantly, while the model provides a *theoretical* bridge between media entertainment, recovery, and resilience, *empirical* evidence for many of its propositions is still needed, in particular with regard to the proposed long-term perspective and the specific salutogenic, resilience-oriented outcomes. Relatedly, as described above, the salutogenic outcomes integrated in the model are by far not exhaustive and need further consideration and refinement. The resilience dimensions presented here, however, feature prominently in the resilience literature and – as demonstrated

above – can be systematically linked to entertaining media use. We thus believe they present a promising starting point for further research.

A better understanding of the complex interaction of entertainment experience, recovery, and resilience remains a further central challenge for future research. While the model in its current form already postulates reciprocal influences between situational depletion and selective exposure to entertaining media content, it remains an open question whether similar patterns can also be established between long-term resilience factors and media choice.

While the research reviewed in this chapter provides a positive overall picture of the self-regulatory potential of media use, pressing questions concerning potential negative effects remain unanswered. One central issue, for example, pertains to the question of the relationship between media use and other, potentially more effective recovery activities. Research perspectives vary widely between negative evaluations viewing media as stealing time for other (more useful) activities, (i.e., the displacement hypothesis) and more positive perspectives viewing media as providing motivation and impulses for other potentially beneficial activities (i.e., the stimulation hypothesis) (e.g., Valkenburg & Peter, 2007). Also, the effectiveness of entertaining media use as a self-regulatory resource in contrast to other activities remains unclear. To the best of our knowledge, a study by Collins et al. (2019) is the first and only to provide such a benchmark. In an experiment, the authors compared the recovery effects of playing a computer game versus using a mindfulness exercise and found that the computer game resulted in higher levels of energetic arousal. Another question pertains to the right ‘dose’ of media consumption for optimal recovery effect. A recent study by Granow, Reinecke, and Ziegele (2018) demonstrated, for example, that binge watching may have both negative and positive effects on recovery, depending on whether it conflicted with other goals and obligations or not (for the critical role of self-control in the context of

media entertainment, also see the chapter by Reinecke and Meier in this volume). Similar critical questions also arise with regard to the relationship between entertaining media use and resilience. The research reviewed above clearly supports the notion that entertainment experience may foster the long-term development of resilience factors. Other research, however, suggests that media entertainment may also have negative long-term effects on self-regulation, such as the “narcotizing dysfunction” (p. 385) resulting from escapist media use (Katz & Foulkes, 1962; however, also see the chapter by Halfmann & Reinecke in this volume for a discussion of the positive self-regulatory effects of escapist media use). From a salutogenic point of view, a closer inspection of the boundary conditions that foster or hinder self-regulation through media use thus seems of crucial importance in order to understand the impact of media entertainment in conjunction with other resource-providing leisure time activities as a central source of recovery and resilience. We hope that the R²EM-Model presented in this chapter will provide useful guidance in addressing the challenges outlined above.

Figure 1: The Recovery and Resilience in Entertaining Media use Model (R²EM-Model)

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