Join me in Death:

Managing Mortality Salience via Mediated

Social Encounters

I n a u g u r a l - D i s s e r t a t i o n

zur

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Overview

This dissertation entails two main sections: The first part is the synopsis, in which I discuss the empirical studies conducted for this dissertation in light of relevant research. Throughout the synopsis, I focus on the research questions and main findings of the studies. In the second part, I report the studies in paper-based format (see Appendix A to E). Here, I present detailed information about the methods, analyses, results, and limitations of the conducted studies. The second part is not entailed in the published version of this synopsis due to copyright reasons.

The synopsis starts with a description of the main theoretical framework of the dissertation: Terror management theory (TMT) (Greenberg, Pyszczynski, & Solomon, 1986). I focus on TMT's proposition that one's cultural worldview enables the individual to buffer death-anxieties wherefore individuals defend their cultural worldview. Individuals under conditions of mortality salience (MS), thus, prefer similar others as they validate this cultural worldview. I argue that others can be similar by belonging to the same in-group (intergroup level), but also can be similar on the interpersonal level, for instance by sharing one's attitudes. TMT posits that both, in-group status and interpersonal similarity buffer against existential anxieties (Greenberg et al., 1986) but the relative relevance of these two factors for managing MS is somewhat unclear. Particularly in mediated social encounters (Khoo, Hui, & See, 2014), in-group status and interpersonal similarity can be independent from each other (Dragojevic & Giles, 2014) and both intergroup as well as interpersonal cues affect mediated encounters and interactions (Postmes & Spears, 2002; Wang, Walther, & Hancock, 2009). Like interpersonal communication (Konijn, Utz, Tanis, & Barnes, 2008), mediated social encounters can take place in different media contexts ranging from online dating over playing games to the response towards media

characters. The relative relevance of in-group versus interpersonal similarity for the management of MS in these contexts deserves empirical attention.

So far, most TMT research has studied both factors separately. I review literature showing an increased preference for in-group members and addressing the response towards interpersonally similar others under conditions of MS. To my knowledge, only two series of studies (Khoo et al., 2014; See & Petty, 2006) addressed the interaction of in-group status and interpersonal similarity under conditions of MS directly, and their results are inconclusive.

In the following, I present the first two studies of the dissertation (Frischlich, Rieger, & Bente, *under review*; Frischlich, Rieger, Dratsch, & Bente, 2015), which examined the interplay between in-group status and interpersonal similarity in an online dating context. Afterwards I discuss the role of negative in-group valence for the response towards in-group (versus out-group) members and interpersonally (dis-)similar others. The next two studies examined the effects of group-valence on the interplay between in-group status and interpersonal similarity in a gaming context (Frischlich, Rieger, Rutkowski, & Bente, *under review*; Frischlich, Rieger, & Rutkowski, 2014). Afterwards, I address a specific extreme combination of interpersonal dissimilar and negative in-group members—National or religious extremists who claim to defend the participants' in-group with violent means. Building upon the concept of parochial altruism (the combination of in-group directed altruism and out-group directed hostility, Bowles, 2008), I present the last study (Frischlich, Rieger, Hein, & Bente, 2015), which tested the effects of MS on the response to parochially altruist extremist propaganda videos.

Overall, the results suggest that, under conditions of MS, intergroup cues affect the subsequent processing of interpersonal similarity and valence considerations in mediated encounters. Interpersonal similarity affected only the response towards in-group members but could not attenuate the threat by out-group members. Valence of the in-group did play a role when in-group members were presented as being dissimilar to the participant but not when they had been presented as being similar. In addition, participants "overlooked" both negative valence and interpersonal dissimilarity when an extremist propagator claimed to defend their in-group.

The discussion section focusses on the general implications of the conducted work: (a) The theoretical implications of the interplay between in-group status and interpersonal similarity in the terror management process; (b) the theoretical implications for the effects of MS in mediated social encounters; and (c) the practical implications for fostering peaceful intergroup interactions after MS. The limitation section focusses on the general limitations of the conducted research beyond the boundaries of the single studies' and suggests potential starting points for future research.

List of the Experimental Studies

Study 1: Meet Joe Black? The Effects of Mortality Salience and Similarity on the Desire to Date In-group versus Out-group Members Online

Published in:

Frischlich, L., Rieger, D., Dratsch, T., & Bente, G. (2015). Meet Joe Black? The effects of mortality salience and similarity on the desire to date in-group versus out-group members online. *Journal of Social and Personal Relationships*, *32*(4), 509–528. doi:10.1177/0265407514536305

Study 2: The End of Immortality. Out-group Dates Impair the Defense Against Mortality Salience

Version has been under review at Social Psychology

Frischlich, L., Rieger, D., & Bente, G. (*under review*). The end of immortality: Out-group dates threaten the defense against mortality salience.

Study 3: I'd Rather Die than Be with You: The Effects of Mortality Salience and Negative Social Identity on Identification With a Virtual group

Published in:

Frischlich, L., Rieger, D., & Rutkowski, O. (2014). I'd rather die than be with you: The effects of mortality salience and negative social identity on identification with a virtual group. In G. Meiselwitz (Ed.), *Social Computing and Social Media: Proceedings of the 6th International Conference, SCSM 2014, Held as Part of HCI International 2014, Heraklion, Crete, Greece, June 22-27, 2014.* (LNCS 8531, pp. 440–451.). Kreta: Springer. doi:10.1007/978-3-319-07632-4_42

Study 4: Forever White: Mortality Salience Increases the Preference for White over Black Avatars

Version has been under review at Cyberpsychology

Frischlich, L., Rieger, D., Rutkowski, O. C., & Bente, G. (*under review*). Forever White? Mortality salience increases the preference for in-group avatars.

Study 5: Dying the Right-way? Interest in and Perceived Persuasiveness of Parochial Extremist Propaganda Increases after Mortality Salience

Published in:

Frischlich, L., Rieger, D., Hein, M., & Bente, G. (2015). Dying the right-way? Interest in and perceived persuasiveness of parochial extremist propaganda increases after mortality salience. *Frontiers in Psychology: Evolutionary Psychology and Neuroscience*. doi:10.3389/fpsyg.2015.01222

Own Contribution to the Experimental Studies

Study	Contributions of the first author	Contributions of the co-authors.
1	Idea of the study (together with D.R.), literature review, conceptualization and planning of the study. (Partial) creation of the stimulus material. (Partial) conduction of the study. Conduction of the analyses. Writing of the article, all action letters and revisions.	Idea of the study (D.R. together with the first author). (Partial) creation of the stimulus material (T.D.). Support in the data-analyses (D.R.). Reviewing and commenting of the manuscript drafts (D.R., T.D., G.B.).
2	Idea of the study, literature review, conceptualization and planning of the study. (Partial) conduction of the study. Conduction of the analyses. Writing of the article, all action letters and revisions.	Reviewing and commenting on the manuscript drafts (D.R., G.B.).
3	Idea of the study, literature review, conceptualization and planning of the study. (Partial) conduction of the study. Conduction of the analyses. Writing of the article, all action letters and revisions.	Support in generating the idea of the study (D.R.). (Partial) creation of the stimulus material (O.C.R.). (Partial) conduction of the study (O.C.R.). Reviewing and commenting of the manuscript drafts (D.R., G.B.).

Study	Contributions of the first author	Contributions of the co-authors.
4	Idea of the study, literature review, conceptualization and planning of the study. (Partial) conduction of the study. Conduction of the analyses. Writing of the article.	Reviewing and commenting on the manuscript drafts (D.R., G.B.).
5	Idea of the study (together with Maia Hein). (Partial) literature review, conceptualization and planning of the study. (Partial) conduction of the study. Conduction of the analyses. Writing of the article, all action letters and revisions.	Idea of the study (Maia Hein together with the first author). (Partial) literature review and (partial) conduction of the study (Maia Hein during her diploma thesis). Reviewing and commenting of the manuscript drafts (D.R., G.B.).

Notes. Study 1 = Frischlich, Rieger, Dratsch, & Bente (2015); Study 2 = Frischlich, Rieger, & Bente (*under review*), Study 3 = Frischlich, Rieger, & Rutkowski (2014), Study 4 = Frischlich, Rieger, Rutkowski, & Bente (*under review*), Study 5 = Frischlich, Rieger, Hein, & Bente (2015). G.B. = Gary Bente, T.D. = Thomas Dratsch; D.R. = Diana Rieger; O.C. R. = Olivia C. Rutkowski;

Synopsis

"For life and death are one, even as the river and the sea are one."

(Gibran, 2014, p. 81)

Since the 1980's research on terror management theory (TMT) (Greenberg et al., 1986), has addressed the interrelation between death-reminders and human life. Death-thoughts have been found to affect multiple aspects of life, ranging from the defense of cultural worldviews over the striving for self-esteem, towards the reactions to social encounters (for a meta-analysis, see Burke, Martens, & Faucher, 2010). Nowadays, social encounters often take place in mediated contexts. The worldwide distribution of the Internet has substantially changed the way in which individuals meet (new) people and how they interact with each other (Konijn et al., 2008). In 2014, 35% of the total world population were Internet users and 26% were active social network users (We Are Social, 2014). In theory, the digital era allows us to breach geographical and social boundaries that impair intergroup contacts in the physical world. Yet, sociological research shows that intergroup barriers form the largest divide in social networks today (Mcpherson, Smith-Lovin, & Cook, 2012).

From the perspective of TMT, the persistent preference for in-group over out-group members is due to the role one's in-groups play for managing the existential fear emerging from mortality salience (MS) (Castano, Yzerbyt, & Paladino, 2004). By advocating a similar cultural worldview, in-group members promise that something larger than their own limited life exists and therewith calm death-anxieties. Yet, even in- group members can differ markedly in their worldviews, whereas someone from a cultural out-group can be very similar on the interpersonal level.

This dissertation aims at exploring how in-group status and interpersonal similarity interact in the terror management process. To this end, the empirical studies conducted for this dissertation addressed the question how individuals under conditions of MS respond to in-group (versus out-group) members and interpersonally (dis-)similar others in different mediated social encounters ranging from online dating and over gaming to the response towards extremist propaganda videos intended to persuade the recipient.

Theories on mediated social interactions postulate both intergroup and interpersonal cues to affect mediated interactions. The social identity model of de-individuation effects (SIDE, Postmes, Spears, & Lea, 1998) posits that intergroup cues are dominant in anonymous online interactions (Postmes, Spears, & Lea, 2002). In contrast, social information processing theory (Walther, 1992) postulates interpersonal cues to be able to overcome intergroup boundaries (Wang et al., 2009). The initial formulation of TMT postulated both intergroup and interpersonal aspects to affect the response towards others. Greenberg et al. (1986) argued that intergroup dissimilarities are particularly dramatic, because out-group members jar the confidence in one's cultural worldview by pursuing alternative pathways to immortality. Yet, interpersonal dissimilarities also question one's cultural worldview and impair one's defense against MS.

Terror Management Theory

From a TMT (Greenberg et al., 1986) perspective, a wide array of human behavior is motivated by defending against death-anxieties. The underlying assumption is that humans are trapped in an existential dilemma between their innate desire for continuous living and their awareness that life is ultimately finite. Within this dilemma lies the potential for paralyzing terror (Greenberg et al., 1986). To manage this terror, humans engage in a dual anxiety-

buffering process shielding them from conscious as well as subconscious death-related thoughts (for a review, see Hayes, Schimel, Arndt, & Faucher, 2010).

TMT and the Dual Component Anxiety-buffering Process

Immediately after death-reminders, so-called *proximal* defenses aim at the suppression of conscious death-related thoughts (Greenberg, Pyszczynski, Solomon, Simon, & Breus, 1994). Proximal defenses address the threat-of-death on a direct level (Pyszczynski, Greenberg, & Solomon, 1999). For instance, individuals can push their end to the distant future (Pyszczynski, Greenberg, Koole, & Solomon, 2009), and they have been found to report increased intentions for life-prolonging behavior (Arndt, Routledge, & Goldenberg, 2006; Routledge, Arndt, & Goldenberg, 2004). This denial of death (term based on Becker, 1973) demands working-memory capacity (Trémolière, De Neys, & Bonnefon, 2013) and depletes self-control resources (Gailliot, Schmeichel, & Baumeister, 2006). More severe, it does not solve the problem of death.

Thus, when the suppressive effort relaxes, the death-related thoughts return to the fringe of consciousness (Pyszczynski et al., 1999). At this point, death-anxiety is particularly high (Abeyta, Juhl, & Routledge, 2014). To manage this anxiety, so-called *distal* defenses are necessary (Pyszczynski et al., 1999). Distal defenses address the threat of death on a symbolical level by providing the individual with the soothing feeling of being a "person of *value* in a world of *meaning*" (Solomon, Greenberg, & Pyszczynski, 2004, p. 16), a world which will outlive a person's own limited existence and which promise symbolic immortality (Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004).

TMT and the Striving for Symbolic Immortality

This soothing state of symbolic immortality is attained via a tripartite anxiety-buffer (Hart, Shaver, & Goldenberg, 2005) entailing the individuals' cultural worldview, their self-esteem, and their intimate relationships. Cultural worldviews are transmitted via the interaction with ones parents, cultural agents and cultural documents (Greenberg et al., 1995). They are the "primary death-denying mechanism" (Hart et al., 2005, p. 1000) as they form the symbolical system that imbues a person's world with meaning and stability (Greenberg et al., 1995).

Noteworthy, the mere belief in a cultural worldview is not enough for immortality. Immortality is reserved for those who live up to the standards of their worldview and are valuable members of their cultural system (Pyszczynski et al., 2009). Matching these standards allows the individual to attain self-esteem. Self-esteem thereby reflects the sense of being a "valuable member" of one's cultural worldview. Although considerable interpersonal variability exists in the specific standards for self-esteem attainment, the underlying need for self-regard is assumed to be universal (Pyszczynski et al., 2004).

Interwoven with one's cultural worldviews and self-esteem, intimate relationships form the third pillar of the anxiety-buffer. On the one hand, they have a general anxiety-calming function (Cox & Arndt, 2012; Mikulincer & Florian, 2000) and promise death-transcendence via one's offspring (Fritsche, Fischer, Koranyi, Berger, & Fleischmann, 2007). On the other hand, they can validate one's worldview and impact one's self-esteem (Mikulincer, Florian, & Hirschberger, 2003). Two main hypotheses emerged from the theoretical assumptions of TMT: The MS hypothesis, and the complementary anxiety-buffer hypothesis.

Hypotheses of TMT

First, the MS hypotheses builds on the notion that all three components of the anxiety-buffer rely on fragile ideas and thus require constant consensual validation (Pyszczynski et al., 2009). The MS hypothesis postulates that individuals have an increased need for these anxiety-buffers and defend them more harshly then after death-reminders. Following this argument, individuals under conditions of MS are predicted (a) to prefer those who validate their cultural worldview and derogate those who question it; (b) to strive for self-esteem, (Solomon et al., 2004) and (c) to turn towards their intimate relationships (Hart et al., 2005).

Second, the complementary anxiety-buffer hypothesis postulates that once the anxiety-buffers are activated, they reduce the threat of death and make subsequent defenses obsolete (for empirical support, see Arndt, Greenberg, Solomon, Pyszczynski, & Simon, 1997; Greenberg et al., 1992; Harmon-Jones et al., 1997). Taken together, these hypotheses imply that when one of the anxiety-buffers is activated, the other anxiety-buffers become obsolete. Nevertheless, different components of the anxiety-buffer can be differentially relevant for the terror management process (but see Hart, 2014, for a different argumentation). Landau, Greenberg, and Sullivan (2009) found individuals to strive for self-esteem under conditions of MS only when this self-esteem striving did not conflict with their cultural worldview. This implies that also different aspects of one's cultural worldview, such as another persons' in-group status or the interpersonal similarity of that person, could differ in their anxiety-buffering value.

Evidence for the MS Hypothesis

Numerous meta-analyses have confirmed a general cultural worldview defense under conditions of MS (Burke, Kosloff, & Landau, 2013; Burke et al., 2010; Hayes et al., 2010; Martens, Burke, Schimel, & Faucher, 2011). Most studies thereby provided either evidence for the effects of MS on the response towards ingroup members or did address the effects of MS on the response towards interpersonally similar others.

MS and Intergroup Aspects

Evidence for the effects of MS on intergroup biases is large. Particularly the preference for *ethnocultural* in-group members is well documented [ethnocultural refers to ethnic, national or religiously similar subgroups of a larger culture[1] (For an application of the term, see Berry 2005, 2006)]. Out of the 143 studies in Burke et al.'s (2010) meta-analyses, which tested the effects of MS on cultural worldview defense, 90 used ethnocultural worldview cues. The largest proportion of them (68 studies) relied on national differences. For instance, Castano, Yzerbyt Paladino and Sacchi (2002) found Italians to ascribe to the group of Italians a higher entitativity, to identify more with Italy and to describe other Italians more positively after death-reminders. MS has been found to exaggerate the preferences for someone who praises the participant's nation over someone who criticizes it (Arndt, Allen, & Greenberg, 2001; Greenberg et al., 1995, 2003); to increase the preference for in-group products (Friese & Hofmann, 2008); and to decrease the liking for culturally dissimilar others (Bassett & Connelly, 2011). Individuals also were more prone to show pro-social behavior towards in-group than out-group members after MS (Jonas, Schimel, Greenberg, & Pyszczynski, 2002).

Two characteristics of ethnocultural groups have been suggested to contribute to their relevance for the terror management process. These aspects are not mutually exclusive but have different implications for the interaction between group-membership and interpersonal similarity. On the one hand, ethnocultural groups are "lasting identit[ies]" (Alvídrez, Piñeiro-Naval, Marcos-Ramos, & Rojas-Solís, 2015, p. 534), they have "elements of immortality built in [their] constitutive narrative" (Castano et al., 2004, p. 310). Participants ascribed their nation a larger continuity under conditions of MS and this continuity mediated identification with that nation (Sani, Herrera, & Bowe, 2009). As cultures most plausible are more lasting than attitudes,

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[1] http://www.differencebetween.net/miscellaneous/difference-between-culture-and-ethno-culture/ retrieved online 22.08.2015, 08:00.

interpersonal dissimilarities should not impair an in-group's functionality for managing MS. Individuals should always prefer ethnocultural in- over out-groups under conditions of MS.

On the other hand, Castano et al. (2004) posited that the de-individuation into a social group allows for transcending the boundaries of one's own mortal self. Following the SIDE model, de-individuation is particularly relevant in anonymous mediated interaction—the lack of individuating information increases the salience of social identity cues and fosters the de-individuation into that social identity. Hence, interpersonal similarity of an in-group member should matters as it (a) fosters de-individuation (Diener, Lusk, DeFour, & Flax, 1980); and (b) lays in focal attention during de-individuation (Postmes et al., 1998, 2002). Participants have been found to perceive the members of their in-group as being more similar to each other under conditions of MS (*in-group homogeneity*) (Fritsche, Jonas, & Fankhänel, 2008). From this perspective, similarity of an in-group members should matter under conditions of MS.

MS and Interpersonal Aspects

Research in the absence of MS has repeatedly (e.g., Byrne, Nelson, & Reeves, 1966; Byrne & Nelson, 1965) demonstrated that interpersonal similarity has a strong positive effect ($r = .59$) on interpersonal attraction (obtained in the meta-analysis by Montoya & Horton, 2012) and can even overcome intergroup biases (Obot, 1988).

Under conditions of MS, evidence for the similarity-attraction effect is mixed. On the one hand, participants preferred similar over dissimilar others (Greenberg et al., 1990), political candidates advocating their political attitude (Kosloff, Greenberg, Weise, & Solomon, 2010), and intimate partners similar to their own parents (Cox et al., 2008, Study 5). On the other hand, participants were more willing to compromise mate standards (Hirschberger, Florian, & Mikulincer, 2002), preferred being close to others even when they hold dissimilar attitudes (Wisman & Koole, 2003), and preferred conservative politicians irrespective of their own political orientation (for a review on political preferences, see Burke et al., 2013).

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MS and the Interaction between Intergroup and Interpersonal Aspects

To my knowledge, only two series of studies addressed the interaction between the in-group status and interpersonal similarity in terms of attitudes under conditions of MS directly. In the first two experiments, See and Petty (2006) exposed subjects under conditions of MS (versus control) to a statement that either criticized the participants' university (counter-attitudinal) or that praised this university (attitudinal). The statement was either written by an in-group member or by an out-group member. The authors found that in-group members were evaluated irrespective of whether the statement was counter-attitudinal. In contrast, out-group members were evaluated more positively in the attitudinal than in the counter-attitudinal condition. The authors argued that in-group status served as the initial cue for the message processing wherefore attitudinal similarity was processed only among the out-group members.

In an attempt to build on these findings, Khoo, Hui and See (2014) presented their participants with only counter-attitudinal essays (again criticizing the participant's university) but varied on whether the critique in the essay was justified versus not. They found that, under conditions of MS, out-group members were evaluated, irrespective of whether the critique was justified or not. In contrast, in-group members were disliked when the critique was unjustified but liked when they had good arguments for their critique. The authors posited that in-group status affected the subsequent message processing and argued that justified in-group critique can be beneficial for the in-group, for instance, by triggering necessary reforms. Unfortunately, the usage of in-group critique as dissimilarity manipulation is problematic. The critique could have confounded interpersonal dissimilarities with the valence of the group overall. Negativity of an in-group can impair that group's functionality for managing MS (Arndt, Greenberg, Schimel, Pyszczynski, & Solomon, 2002). The question how ingroup status and interpersonal similarity interact the absence of negative in-group valence, thus, remained open.

MS and Dating: In-group Members and Similar Others Preferred

Intimate relationships are closely interwoven with ones' cultural worldview and self-esteem (Mikulincer et al., 2003). Both, in-group status and interpersonal similarity have been found to play a role for the response towards (potential) intimate partners under conditions of MS depending on the partners' worldview validating or self-esteem enhancing qualities (Kosloff, Greenberg, Sullivan, & Weise, 2010). For instance, Cox and colleagues (2008) found an increased preference for a novel person if that person was similar instead of dissimilar to the participant's parents. Kosloff, Greenberg, Sullivan et al. (2010) found an increased preference for religious in-group dates even when they were less attractive than an out-group date. Strachman and Schimel (2006) found that reminiscences of dissimilarities (in terms of ''religion, ethnicity, political views, or socio-economic status'', p. 970) between oneself and one's romantic partner decreased the commitment to this relationship after MS. In a first study on the similarity-attraction effect among in- versus out-group members under conditions of existential anxieties, Michinov and Michinov (2011) found a similarity-attraction effect irrespective of in-group status in the control group. In contrast, participants under conditions of uncertainty showed a similarity-attraction effect only among in-group members. Study 1 (Frischlich, Rieger, Dratsch, et al., 2015) tested whether the same pattern would emerge under conditions of MS.

Study 1: Meet Joe Black? The Effects of Mortality Salience and Similarity on the Desire to Date In-group versus Out-group Members Online

We tested the effects of MS on the similarity-attraction effect in an online dating context. Online dating is particularly well suited to study the effects of in-group status versus interpersonal similarity in mediated social encounters as it theoretically enables the users to overcome geographical boundaries that impose intergroup dating in the physical world (Finkel, Eastwick, Karney, Reis, & Sprecher, 2012). In addition, numerous dating sides (e.g., elitepartner.de) rely on the similarity-attraction effect in their matching algorithms (Finkel et al.,

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2012). Based on the literature, we predicted that participants under conditions of MS would prefer in-group to out-group dates. We further expected similar in-group members to be preferred over dissimilar ones and asked how group-membership and interpersonal similarity would interact under conditions of MS.

Methods.

The study realized a 2 (MS versus Control) $\times$ 2 (In-group status of the male date: German in-group versus Arab out-group) $\times$ 2 (Attitudes: Similar versus dissimilar) between-subjects design. German females ($N = 249$, $M_{age} = 24.35$ years, $SD_{age} = 3.38$ years, all interested in men) were exposed to a bogus online dating app "Meet your Match".

At the beginning, participants filled out a set of bogus personality questionnaires to bolster the cover story before they were randomly assigned to the conditions. As with the majority of TMT studies (Burke et al., 2010), we used two open-ended questions to induce MS (Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989). In the control condition death-related words were replaced with references to failing an exam (Monin, 2009). After the manipulation and a distraction task to allow for distal defenses, participants saw a potential date following a 2 (German in-group versus Arab out-group member) $\times$ 2 (similar versus dissimilar attitudes) design. The dates were represented via two neutrally looking FaceGen 3.1 (www.facegen.com) avatars, one representing the German in-group member ("Tim") the other the Arab out-group member ("Said"). The candidates were presented together with a table simulating that they were either similar (75% agreement on interests, attitudes, and values), or dissimilar to the participants (25% agreement). Participants then rated their desire to date each of the candidates.

Results and discussion.

The results showed a similarity-attraction effect in the control condition, irrespective of the candidate's group-membership. Under conditions of MS, in contrast, the similarity-attraction effect was found only for the in-group but not for the out-group date. Our findings replicate prior research on the similarity-attraction effect under conditions of uncertainty (Michinov & Michinov, 2011). Furthermore, they match the results by Khoo et al. (2014). Individuals exaggerated their response to in- but not to out-group members.

We did not find a decreased desire to date the out-group candidate under conditions of MS. At first sight, this contradicts prior studies reporting a preference for religious in-group over out-group members under conditions of MS (Kosloff, Greenberg, Sullivan, et al., 2010). Yet, our distinction between interpersonal and intergroup similarities might explain this divergence. Kosloff, et al. (2010) found validation to be particularly relevant for long-term dating after death-reminders. As we varied similarity in attitudes and group-membership separately, this might have blurred the intergroup differences and thus reduced the main effect.

Our findings show that in-group status plays a different role than interpersonal similarity. This is compatible to neurological research showing MS predominantly increases the attention towards in-group but not out-group members (Henry, Bartholow, & Arndt, 2010). Our results imply that in-group status serves as a gatekeeper for subsequent similarity evaluations. They match Greenberg et al.'s (1989) assumption that threats to one's cultural worldview on the intergroup level are particularly dramatic, but that even within a cultural group others whose views are dissimilar might impair our defense against MS. Still, we did not test the effects of interpersonal similarity and group-membership on the individual's anxiety-buffer directly. Study 2 (Frischlich, Rieger, & Bente, *submitted*) aimed at filling in this void.

Study 2: The End of Immortality. Out-group Dates Impair the Defense Against Mortality Salience

Study 2 tested the assumption that out-group status, but also interpersonal dissimilarity of an in-group member thwarts one's need for worldview validation and jars the basis of one's self-esteem (Greenberg et al., 1986). We used the same paradigm as employed in Study 1 but added a measure of the participants' current self-esteem and their need for cultural worldview validation. We predicted that, under conditions of MS, out-group dates would threaten the participants' self-esteem and thwart their need for validation and asked whether dissimilar in-group dates would have comparable effects.

Methods.

The study realized a 2 (MS versus Control) $\times$ 2 (In-group status: German in-group versus Arab out-group member) $\times$ 2 (Attitudes: Similar versus dissimilar) design (see Appendix B). A total of $N = 195$ German females ($M_{age} = 24.82$ years, $SD_{age} = 4.74$ years, all sexually interested in men) participated in the study and were randomly assigned to the MS versus control condition. The same open-ended questions as in Study 1 were used (Monin, 2009; Rosenblatt et al., 1989).

After a distractor task to allow for distal defenses, participants saw one of the dating candidates used in Study 1 following a 2 (German in-group versus Arab out-group member) $\times$ 2 (similar versus dissimilar attitudes) design. Participants evaluated the candidate on the *desire to date* scale (Frischlich, Rieger, Dratsch, et al., 2015) and completed a measure of *threat to their self-esteem* via the social state self-esteem subscale by Heatherton and Polivy (1991) and rated the relevance of *worldview validation* by an intimate partner (Kosloff, Greenberg, Sullivan, et al., 2010). Relevance hereby served as a measure of the need for validation postulated within TMT (Pyszczynski et al., 1996).

Results and discussion.

The results for the desire to date replicated the pattern found in Study 1 on the level of the pairwise comparisons, the accordant interaction failed to reach significance. As in Study 1, participants in the control group showed a significant similarity-attraction effect irrespective of the date's group-membership, whereas individuals under condition of MS showed a similarity-attraction effect only when judging the in-group date.

More relevant for the scope of Study 2, the results for self-esteem threat and worldview validation needs confirmed the predictions. For both variables, the interaction between salience manipulation and group-membership reached significance. Participants under conditions of MS (versus control) reported significantly higher self-esteem threats and a higher need for worldview validation after they had seen the out-group date. Interpersonal similarity had no effects.

Study 2 provided direct evidence that out-group members threaten one's self-esteem and thwart one's need for worldview validation, and confirmed Greenberg et al.' assumptions (1986) that intergroup differences are particularly threatening under conditions of MS. In contrast to the expectations deducted from the initial formulation of TMT, dissimilar in-group members did not threaten the anxiety-buffer. One potential explanation is that in-group members offer more identification potential than out-group members (Castano et al., 2004) irrespective of their attitudinal similarity. Reporting a decreased desire to date them thus might have been enough to cope with their divergence. This assumption was somewhat speculative we did not measure identification with one's in-group directly. The next two studies addressed this point. In addition, dating is an interpersonal rather than an intergroup context. We thus realized another media context allowing for the representation of virtual groups, namely digital games. Digital games have the advantage that they enlarge participant's possibilities to transgress intergroup borders and allow for literally becoming a member of another group via the avatar selection.

Furthermore, the next studies also addressed the influence of in-group valence as a critical aspect mentioned before. Khoo et al. (2014) as well as See and Petty (2006) operationalized attitudinal dissimilarity via critique on the participants' in-group. Therewith, negative aspects of this in-group might have become salient during the experiment. Negative aspects of one's in-group can be threatening to one's self-esteem—particularly under conditions of MS.

MS and In-group Valence

Social identity theory posits that in-groups play a direct role for the individuals' self-esteem (Aberson, College, Healy, & Romero, 2000; Hewstone, Rubin, & Willis, 2002; Rubin & Hewstone, 1998). Positive in-groups enhance the participant's self-esteem, meanwhile negative ones threaten the individuals self-esteem (Branscombe, Fernández, Gómez, & Cronin, 2012; Ellemers, Spears, & Doosje, 2002). Broadly spoken, individuals' coping strategies in dealing with such negative identities can be categorized as either individual or collective, depending on the permeability of group boundaries (i.e., how easy it is to turn away from a group) (Ellemers, Spears, & Doosje, 1997; Ellemers, van Knippenberg, De Vries, & Wilke, 1988). If groups are easy to leave, individual strategies are preferred (Tajfel, 1982). Subjects distance themselves from negative social groups and affiliate with positive ones (Ellemers et al., 1988; Ellemers, 2001). If leaving the group is not possible, individuals' engage in collective strategies (Tajfel, 1982) aimed at restoring the group's overall image. For instance, by denying the in-group's faults (Jackson, Sullivan, Harnish, & Hodge, 1996; Koval, Laham, Haslam, Brock, & Whelan, 2012) or by excluding those black sheep who stained their group's image (Abrams, Palmer, Rutland, Cameron, & Van de Vyver, 2014; Marques, Yzerbyt, & Leyens, 1988).

Studies that examined the coping with negative social identities under conditions of MS found exaggerated responses to negative social identities after death-reminders. For instance, Dechesne Greenberg, Arndt, and Schimel,(2000) found participants to distance more from an unsuccessful sports-team after a MS induction. Arndt, Greenberg, Schimel, Pyszczynski, and Solomon, (2002) found that individuals saw themselves as less similar to other in-group members after the exposure to a negative in-group member (in this case a drug dealing in-group member). Permeability of the group's boundaries affected the strategies chosen. Dechesne Janssen, and van Knippenberg (2000) found an increased usage of collective strategies when permeability was low, but a higher usage of individualist strategies when group boundaries were permeable.

Virtual ethnocultural groups most plausible are more permeable than offline groups (Lee, 2014) and, thus, should allow for individualist strategies in terms of (a) a decreased identification with these virtual groups, or (b) becoming part of another group by selecting an out-group avatar. In addition, if interpersonal similarity of one's in-group members affect the terror managing potential of an in-group, the results should differ depending of the in-group members' interpersonal similarity. Study 3 (Frischlich et al., 2014) tested this assumption under conditions of low interpersonal similarity. Study 4 (Frischlich et al. *under review*) examined the pattern under conditions of high interpersonal similarity.

Study 3: I'd Rather Die than Be With You: The Effects of Mortality Salience and Negative Social Identity on the Identification with a Virtual Group.

Study 3 explored the influence of in-group valence on the identification with that group and the choice of in-group versus out-group avatars by using the SIMS III life-simulation game. In general, the identification with virtual characters and environments follows the same social identity mechanics as the identification with offline groups does. Virtual groups form part of one's social identity (Van Looy, Courtois, De Vocht, & De Marez, 2012) wherefore players strive to evaluate their virtual identities positively.

To manipulate the group's valence, we focused on the group's success based on prior studies (Dechesne, Greenberg, et al., 2000). In-game success on the individual level has been found to affect need-satisfaction via digital games (Rieger, Wulf, Kneer, Frischlich, & Bente, 2014). Consequently, the success of one's in-group in a virtual setting should affect the response to one's virtual social identity. We predicted that individuals under conditions of MS would prefer in-group to out-group avatars, and that they would identify more with virtual worlds when their in-group had been successful (versus not). We further asked whether success would affect avatar choices.

Methods.

The study realized a 2(MS versus Control) × 2(Success versus failure of the in-group) design (see Appendix C). White Germans ($N = 71$, 35 females, $M_{age} = 24.59$ years, $SD_{age} = 4.13$) were invited to an online study during which they were randomly assigned to an MS versus control condition were they answered the same open-ended question as in Study 1 (Monin, 2009; Rosenblatt et al., 1989).

Distally to the MS induction, participants watched a gameplay video of a SIMS III human chess game by EA-games[2] with white and black avatars as chess figures. The video was manipulated so that either the white (in-group success) or the black team (in-group failure) apparently won the match. We created a white and black team master that was filmed how he (or she corresponding to the participants' gender) watched the game and expressed either happiness or anger after the match. Each team master was presented as being dissimilar to the participant. After the video, participants were asked which avatar they would like to play and how much they identified with the virtual group (via the six-items subscale for *group-identification* by Van Looy et al., 2012)).

Results and discussion.

The results showed no effect of MS or success on avatar choice. Somewhat surprising, participants always preferred the black to the white avatar. However, we found a significant interaction between condition and team success on identification. Participants under conditions of MS who saw the white team win identified the most with the virtual group (compared to all other conditions); participants under conditions of MS who saw the white team loose identified the least. This results replicated prior findings on the identification with successful versus unsuccessful teams (Dechesne, Greenberg, et al., 2000) in a virtual environment. In addition, the results showed that individuals turned towards virtual groups only when the scenario presented their offline social group as successful, matching prior research on individualist coping with negative social identities (Dechesne, Janssen, et al., 2000).

Notably, we found no main effect for the success of the team. Individuals did not prefer to play the successful to the unsuccessful team per se. Only through the intergroup lens after a MS induction did in-game success affect identification. Contradicting our expectations, we did

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[2] The Sims Movie Mashup Tool Example 3, http://www.gamespot.com/articles/ the-sims-3-exclusive-hands-on-making-movies-with-the-sims-3s- mash-up-tool/1100-6207981/

not find an increased willingness to appear as an in-group member via avatar choice under conditions of MS. The results, however, match the findings of the first two studies: MS did not increase the desire to be *with* dissimilar in-group members (Study 1 and 2) nor did MS increase the desire to *be* a dissimilar in-group member (Study 3). In consequence, we expected to find an increased in-group bias on avatar choice under conditions of high-similarity. Study 4 (Frischlich et al. *under review*) tested this assumption.

Study 4: Forever White: Mortality Salience Increases the Preference for White over Black Avatars.

We expected that when the avatars were presented as being similar to the participant, individuals under conditions of MS would prefer in-group to out-group avatars. We asked how the success of that in-group might affect avatar choices and whether participants would identify more with the virtual group depending on in-group status and success of the virtual group.

Methods

The study realized a 2 (MS versus Control) $\times$ 2 (Success versus failure of the in-group) design (see Appendix D). White Germans ($N = 65$, 45 females, $M_{age} = 24.46$ years, $SD_{age} = 3.50$) participated in an online study during which they were randomly assigned to an MS versus control condition (Monin, 2009; Rosenblatt et al., 1989), distracted, and watched a human chess game before they were asked which team master they would like to play. This time the avatar was presented as being highly similar to the participant.

Results and discussion

The results showed a significant interaction between condition and avatar choice. Meanwhile participants in the control condition preferred the Black to the White avatar, participants under conditions of MS preferred the White to the Black avatar. Success of the team did not influence this pattern. No effects on group-identification were found.

Study 4 showed that individuals under conditions of MS not only prefer to date (Study 1 and 2) but also to play a similar in-group member. In sum, the results of the first four studies extend prior research on the interaction between group-membership and interpersonal similarity under conditions of MS (Khoo et al., 2014) and other existential anxieties (Michinov & Michinov, 2011).

We found that, under conditions of MS, interpersonal dissimilarities do play a role for the response towards in-group but not towards out-group members in two different media contexts. Our results in Study 3 suggest that the exaggerated response to out-group critique (versus praising) observed in the study by See and Petty (2006) reflects the participants response to the dissimilar out-group member that additionally activate negative social identity aspects.

In sum, the results of the first four studies underline the relevance of intergroup aspects for the individuals' responses to interpersonal similarity under conditions of MS. However, one relevant condition of intergroup and interpersonal dissimilarities has not been covered so far. Khoo et al. (2014) argued that participants in their study tolerated in-group critique more when it was justified compared to unjustified "because such criticism is likely to enhance the group and perhaps even increase the effectiveness of the group as a death anxiety-buffer" (p. 244).

If individuals do tolerate in-group critique for the higher sake, do they also accept negative in-group members when they claim to defend their in-group? The studies reviewed so far did not explicitly address this question. For instance, the study by Arndt et al. (2002) found subjects to distance themselves from a negative in-group after the exposure to a negative in-group member who dealt with drugs. Drug dealing is not only negative but also potentially in-group damaging behavior. In contrast, other negative in-group members, such as national and religious extremists, claim not to damage but to defend the participants' in- group. Research implies that individuals under conditions of MS indeed respond differentially to norm-violating in-group extremists as compared to norm-violators that do not proclaim higher group goals.

MS and Hostility towards Out-groups

In general, MS *increases* the adherence to cultural norms (Fritsche, Jonas, Kayser, & Koranyi, 2010; Giannakakis & Fritsche, 2011; Jonas & Fritsche, 2012; Jonas et al., 2008), the derogation of norm-transgressors such as prostitutes (Rosenblatt et al., 1989), and the detection of norm-violations (Schindler & Reinhard, 2015). Yet, MS been found to increase the acceptance of so-called parochial altruist (Bowles, 2008) in-group members who advocate hostile intergroup attitudes that transgress intergroup norms (Pettigrew, 1995). Parochial altruism (Arrow, 2007; Bowles, 2008; Choi & Bowles, 2007) is an evolutionary concept describing the combination of in-group restricted altruism and out-group restricted hostility and aggression. For instance, national and religious extremists often "sell" parochial altruism. Simulation studies showed that the willingness to sacrifice oneself to one's group and to fight out-groups in intergroup conflicts enhances a group's odds for success in violent encounters (Choi & Bowles, 2007). Research also found increased parochial altruists behavior in order to defend one's in-group members (Böhm, Rusch, & Gürek, 2015; Rusch, 2014).

MS fosters the acceptance of such parochial altruists. For instance, Greenberg et al. (2001) found White Americans to judge a "proud" White American to be less racist and evaluated him more positively under conditions of MS. Kugler and Cooper (2010) found American participants to report a higher willingness to protect the rights of an in-group but not of an out-group terrorist. Pyszczynski et al. (2006) found Americans to accept violent military strikes against the Muslim world more and Iranian students to like an anti-Western martyr more under conditions of MS (for an Israeli sample, see Hirschberger, Pyszczynski, & Ein-Dor, 2009). MS has even been found to trigger the willingness to become a martyr oneself (Orehek, Sasota, Kruglanski, Dechesne, & Ridgeway, 2014; Pyszczynski et al., 2006).

It has to be noted that these studies provided evidence for an increased acceptance of in-group parochial altruists but scattered evidence for the derrogation of out-group parochial altruists. For instance, Kugler and Cooper (2010) found less willingness to protect the rights of an Iranian versus an American terrorist, but they found no difference between an American and a Bulgarian terrorist. Greenberg et al. (2001) found MS to increase the liking of an in-group racist but to decrease the liking of an out-group racist only by trend.

The last study addressed potential differences in the response to in-group versus out-group parochial altruist under conditions of MS (Frischlich, Rieger, Hein, et al., 2015). We tested the effects of MS on the response towards extremist propaganda that either addressed the participant as an in-group member (right-wing extremist propaganda with a German target audience) or propaganda who was directed towards a different target audience (Islamic extremist propaganda directed towards a Muslim audience). We expected MS to increase the interest in and the persuasiveness of parochial altruist propaganda only when the propaganda was directed towards the participants' in-group. We further inspected how MS affects the response towards parochial altruist propaganda directed towards another target audience.

Study 5: Dying the Right-way? Interest in and Perceived Persuasiveness of Parochial Extremist Propaganda Increases after Mortality Salience

Extremist propaganda videos have become frequent on social network sites such as YouTube and Facebook. Particularly right-wing extremist and Islamic extremists use modern media to propagate their ideologies to a Western audience (Europol, 2011; Glaser, 2013; Torres-Soriano, 2010). Right-wing extremists address a nationally defined target audience, while Islamic extremists address a religiously defined target audience (Rieger, Frischlich, & Bente, 2013). Both groups are similar in their parochial altruist narrative of in-group solidarity and "necessary" aggression to prevent the extinction of their in-group. It has to be pointed out that Germans and Muslims usually do not define themselves as part of an extremist propagators' in-

group. However, being addressed as member of an in-group activates intergroup processes (Harwood, Giles, & Palomares, 2005) and the in-group status of an extremist propagator has been found to steer the response towards accordant videos (Rieger et al., 2013). In the absence of MS, extremist propaganda directed towards the recipient's in-group has been found to trigger coping strategies reflecting the coping with negative social identities. Particularly students distanced from extremist propaganda capitalizing on a shared social identity more than from comparable propaganda directed towards a different target audience (Frischlich, Rieger, Rutkowski, & Bente, 2015; Rieger et al., 2013). We expected that, under conditions of MS, individuals would no longer distance themselves from the negative in-group propaganda but report higher interest in propaganda capitalizing on their social identity (compared to a different identity) and to perceive the accordant videos as being more persuasive.

Methods

We tested our predictions in an online experiment following a 2 (MS versus control) $\times$ 2 (Propaganda directed towards the participants in-group versus another target audience) mixed design (see Appendix E). During the experiment, we confronted German/non-Muslim participants ($N = 109$, 91 females, $M_{age} = 25.17$ years, $SD_{age} = 6.34$) with extremist propaganda videos.

Based on prior research (Rieger et al., 2013), half of the videos addressed the recipients as in-group members (right-wing extremist propaganda), and the other half addressed a different target audience (Islamic extremist propaganda). Individuals were randomly assigned to an MS or control condition were they answered the same open-ended questions as in Study 1(Monin, 2009; Rosenblatt et al., 1989). Afterwards they were distracted to enable their distal defenses before they watched the two video blocks (each comprised of three videos). Participants evaluated each video on the five dimensions of propaganda effects, identified by Rieger et al.

(2013). Thereby interest in the videos and the perceived persuasiveness of the videos laid in focal attention. In addition, we also measured participants level of shame, aversion, and one-sidedness (Rieger et al., 2013).

Results and discussion

The results confirmed MS to have increased the interest in extremist propaganda capitalizing on the participants' social identity but not in extremist propaganda directed towards a different target audience. This interest mediated the perceived persuasiveness of the videos.

Noteworthy, we observed an increased interest for the message directed towards the participants' in-group in a context were participants had markedly different political attitudes than the propagator and did respond with shame to the propaganda addressing them as in-group members. As See and Petty (2006) posited, under conditions of intergroup conflict, individuals seem to follow their in-group irrespective of the whether they agree with the in-groups' message. Our results therewith provided additional evidence that MS plays a role for the attraction to extremist group (Kruglanski, 2009; Kruglanski et al., 2013) and parochially altruistic in-group members (Pyszczynski et al., 2006) and extends prior findings for the first time to research on extremist propaganda.

General Discussion

In this synopsis, I aimed at reviewing literature on the role of intergroup versus interpersonal similarities for managing MS. To this end, I discussed TMT (Greenberg et al., 1986) focusing on the effects of MS on the preference for similar others in terms of in-group status as well as interpersonal aspects. I argued that both in-group status and interpersonal similarity have been found to steer mediated interactions (Postmes et al., 1998; Wang et al., 2009) wherefore studying their interaction under conditions of MS deserves empirical attention. Although, Greenberg et al. (1986) suggested already in their first formulation of TMT that intergroup dissimilarities might weight heavier than interpersonal ones, prior research mainly tested both factors separately. I reviewed literature demonstrating an increased intergroup biases under conditions of MS, scattered evidence for an increased similarity-attraction effect after death-reminders, and initial evidence for an interaction between in-group status and interpersonal similarity.

Building upon this theoretical background, I reported two studies (Frischlich, Rieger, & Bente, *under review*; Frischlich, Rieger, Dratsch, et al., 2015) showing that out-group status but not interpersonal dissimilarity threatened the participants anxiety-buffer (Study 2). Interpersonal dissimilarities nonetheless did reduce the willingness to date an in-group member (Study 1 and 2). Study 3 and 4 confirmed the interaction between in-group status and similarity in a gaming context (Frischlich, et al. *under review*; Frischlich et al., 2014). Participants under conditions of MS preferred the similar in-group avatar (Study 4), but they showed no in-group bias when the in-group avatar was dissimilar to them (Study 3). In addition, Study 3 (versus 4) found that the valence of the participants' in-group played a role under conditions of interpersonal dissimilarity but did not affect in-group biases under conditions of high interpersonal similarity; here participants overlooked the groups' valence. This willingness to overlook an in-groups negative

valence has been reported previously by studies on the effects of MS on the evaluation of in-group members who claim to serve higher group goals. I reported studies showing that MS fosters the acceptance of so-called parochial altruists (Bowles, 2008) in terms of national and religious extremists that claim to defend the in-group. Study 5 (Frischlich, Rieger, Hein, et al., 2015) showed that this larger acceptance of parochial altruists under conditions of MS also extends to the evaluation of extremist propaganda.

Theoretical Implications: MS and Intergroup versus Interpersonal Aspects

On a theoretical level, the findings extend the TMT literature by confirming differential effects of intergroup versus interpersonal aspects of one's "cultural worldview" (Khoo et al., 2014; See & Petty, 2006). They support Castanos' (2004) assumption that ethnocultural in-groups as lasting social identities (Alvídrez et al., 2015) play a specific role in dealing with existential anxieties but also show that similar in-group members are preferred matching the assumption that de-individuation into a social group allows for death-transcendence (Castano et al., 2004) . The results also show that when a negative in-group member proclaims to "defend" the in-group, individuals showed in-group biases under conditions of MS even in the absence of similarity, implying that the endurance of ethnocultural groups can matter more than interpersonal similarity between its members.

In the studies conducted for this dissertation, intergroup aspects in terms of ethnocultural identities and interpersonal aspects in terms of attitudes, values, and personality were compared to each other. The results imply that such a sub-classification provides additional insights. In prior research, cultural worldview has been operationalized in very different ways, ranging from intercultural (Du et al., 2013; Kashima, Halloran, Yuki, & Kashima, 2004; Ma-Kellams & Blascovich, 2011), to intergroup (Fritsche & Jonas, 2005; Giannakakis & Fritsche, 2011; Greenberg et al., 1995), to interindividual differences (Greenberg et al., 1990). For instance, integrating intergroup versus interpersonal levels in the model of threat and defense by Jonas et

al. (2014) seems promising. The authors categorize different defenses after existential threats (among them MS) along two axis: One ranging from concrete to abstract; and one ranging from social to personal defenses. The findings of the conducted studies imply that even within these cells, different levels of abstraction and sociality can have different effects on the management of MS.

The results also conform prior research showing that intergroup biases are driven more strongly by in-group preferences than by out-group derogations (Greenwald & Pettigrew, 2014) and research showing an increased attention and response to in-group but not out-group members under conditions of MS (Henry et al., 2010; Jonas & Fritsche, 2012; Schindler, Reinhard, Stahlberg, & Len, 2013). Throughout the studies, no general in-group bias and out-group derogation was observed, for dating, avatar choice, or propaganda. The control participants in the conducted studies choose to play out-group avatars (Study 3 and 4) and to date out-group members—as long as they hold similar attitudes (Study 1); participants also did not feel threatened by out-group members (Study 2), and reported low interest for extremist propaganda (Study 5).

Theoretical implications: MS and Mediated Social Encounters

Focusing on the implications of our findings for understanding human behavior in mediated social encounters, the results support the SIDE model's assumption that intergroup cues influence information processing in mediated interactions (see Wang et al., 2009, for a discussion). The results also demonstrated MS to be a relevant factor in this context. Meanwhile control participants considered interpersonal similarity in their dating decisions (Study 1 and 2), individuals under conditions of MS processed interpersonal similarity through an intergroup lens.

The results of Study 5 show that individuals were even willing to overlook negative aspects and dissimilarities to in-group members when higher group goals were proclaimed. The

findings oppose utopian expectations that mediated interactions would allow us to breach intergroup boundaries at least when existential anxieties are salient. They also imply that studying the effects of extremist offerings and attempts to challenge extremist ideologies in mediated social encounters is a fruitful venue for future research (Aly, 2014).

Overall, our findings add to the growing evidence for MS to affect the selection, processing, and effects of media content *(for a comprehensive review, see Rieger, in press)*. Prior research found media offerings to be able to induce MS (Chopik & Edelstein, 2014; Taylor, 2012), individuals to prefer potentially anxiety-buffering media content under conditions of MS (Hofer, 2013; Kneer, Hemme, & Bente, 2011), and accordant media content to buffer against MS (Rieger et al., 2015). The presented studies extend this literature by providing initial evidence that MS also affects mediated social encounters.

Practical Implications: MS and Intergroup Peace

Regarding the practical implications of the current work, our results underline the necessity to study how adverse effects of MS on intergroup relationships can be attenuated in mediated as well as in real intergroup contexts such as international collaboration (Dechesne, Van den Berg, & Soeters, 2007). Beyond addressing the adverse effects of MS on intergroup relationships, the TMT literature provided evidence that MS can foster inter-group peace (for reviews, see Jonas & Fritsche, 2013; Niesta, Fritsche, & Jonas, 2008; Pyszczynski, Rothschild, & Abdollahi, 2008). Three main mechanisms have been discussed in this context (although the reviews differ from each other in their categorization of these mechanisms).

First, re-categorizing individuals into new groups has been found to attenuate in-group biases after MS (Giannakakis & Fritsche, 2011). The assignment of individuals to new social categories can attenuate, for instance, the automatic processing of racial cues (Kurzban, Tooby, & Cosmides, 2001) and thus can decrease racial biases such as the worse detection of pain in the faces of out-group members (Luo, Shi, Yang, Wang, & Han, 2014; Sheng & Han, 2012;

Xiaojing, Xiangyu, Xiaoying, & Han, 2009). In light of our results, re-categorization in mediated encounters might allow interpersonal similarity to evoke its effects.

Second, salient norms influence behavior under conditions of MS (for a literature review, see Schindler, 2014). Rothschild, Abdollahi, and Pyszczynski, (2009) demonstrated that the priming of compassionate religious values under conditions of MS decreased the usual support of (Christian) religious fundamentalists for aggressive military strategies (such as nuclear weapons). Relevant to the interaction between intergroup and interpersonal aspects, Rotschild et al. (2009) showed that this effect was only observed when compassion was primed via an in-group source (in this case via the Bible). Compatible to this finding, Jonas and Fritsche (2012) found in-group (but not out-group) behavior to affect the participants own behavior via descriptive norms (norms emerging from what others commonly do). Our results underline the role of in-group sources for messages to evoke an effect. This is particularly relevant for messages tackling extremist propaganda. Our results imply that individuals under conditions of MS will listen predominantly to in-group sources. Moreover, the extremist false promise to defend the participants' group should be considered when trying to transmit norms against extremism.

Third, research on the anxiety-buffer hypotheses suggests that enhancing self-esteem (Harmon-Jones et al., 1997; Schmeichel et al., 2009) and fostering positive intimate relationships (Cox & Arndt, 2012) can help to overcome the need for defending one's cultural worldview under conditions of MS. Studying how the presence of these anxiety-buffer components in mediated social encounters affects our findings is a fruitful venue for further research. For example, bridging our findings with research on the satisfaction of basic needs for affiliation or competence (Reinecke et al., 2012; Tamborini, Bowman, Eden, Grizzard, & Organ, 2010) promises new insights.

Limitations

The individual limitations of each study are discussed in detail within the papers. Therefore, I only point out briefly the general limitations of this dissertation. First, all studies reported relied on a typical student sample assessed in Germany. The results, therefore, are not generalizable to other elderly participants, other educational levels (particularly regarding the response to extremist propaganda, see Rieger et al., 2013), or to other cultures (Kashima et al., 2004; Kashima, 2010). MS effects have been observed across the lifespan (Taubman-Ben-Ari & Findler, 2005), beyond student samples (Dechesne et al., 2007), and in different cultures (Halloran & Kashima, 2004; Hirschberger et al., 2009; Ma-Kellams & Blascovich, 2011). Most plausible intergroup differences do play a role in other samples too. However, research on the relative relevance of different anxiety-buffer aspects in different samples is necessary to address potential differences.

Second, all studies focused on the effects of the standard MS induction (Rosenblatt et al., 1989) on the response towards mediated social encounters. Future research studying how the different MS inductions (Echabe & Perez, 2015) and the salience of death-related thoughts (Du et al., 2013; Klackl, Jonas, & Kronbichler, 2013) affects the reported findings would provide meaningful insights into the underlying processes (Hart, 2014).

Finally, beyond the question of what matters *most*, there is also research needed addressing the question of what matters *when* (Schindler, 2014). All five studies reported here examined the effects of MS in anonymous mediated encounters (meaning the participant was anonymous) with unknown others. The results cannot be generalized to continued or face-to-face interactions. Research implies that mediated intergroup contact over time can overcome intergroup barriers (Walther, Hoter, Ganayem, & Shonfeld, 2015). This also relates to Schindler's (2014) argumentation that anonymity is a relevant boundary condition for MS effects. Whilst increased affiliation with others has been observed in face-to-face interactions

under conditions of MS, increased derogation of others has been observed under conditions of anonymity. Strachman and Schimel's (2006) finding that individuals decrease their commitment to existing relationships under conditions of MS when they had contemplated about dissimilarities indicates that even in the absence of anonymity, dissimilarities might foster the distancing from others after death-reminders. Nonetheless, research studying the actual *salience* of intergroup cues in mediated interactions with diverging levels of anonymity (Sassenberg & Postmes, 2002) and over time (Walther & Parks, 2002; Walther, 1992) is necessary to address the role of these factors.

Conclusion

This dissertation aimed to provide an overview of the TMT literature related to the role of in-group (versus out-group) status and interpersonal (dis-) similarity for managing MS. Although, the presented work provided only initial evidence and future research replicating the findings and addressing the questions that can be pulled out of the results is necessary, the results of five studies showed that distinguishing between intergroup aspects and interpersonal aspects of cultural worldview within TMT research provides meaningful insights and multiple starting points for future research.

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Eigenständigkeitserklärung (Statement of originality)

Nach §10 (9) der der Promotionsordnung der Humanwissenschaftlichen Fakultät der

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Lena Frischlich