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1. Introduction

Why do people sometimes behave in a way that benefits others, even if this will put themselves in an unpleasant and dangerous situation? Why do people act prosocially?

Over a hundred years of research from diverse fields, have tried to answer this question. Recent research has focused on a multilevel perspective, investigating diverse influences on prosocial behavior, including empathy, emotion regulation and self-efficacy beliefs. This thesis will investigate the influence of those possible contributors on different forms of prosocial behavior. Within the discussion, empathy is one of the most influential contributors to prosocial behaviors. To begin with, a short introduction into the definitional issues surrounding empathy will be given in chapter 2.1 on empathy and prosocial behavior. This will be followed by an overview of existing research on empathy and prosocial behavior, including the empathy-altruism hypothesis (Batson, 1991) and a description of different forms of prosocial behavior. The focus will be the relationship between dispositional empathy and different prosocial behaviors. In the chapter 2.2 on emotion regulation, empathy and prosocial behavior an overview of existing research concerning the relationship between emotion regulation strategies and prosocial behaviors will be presented. After this, the emotion generation processes and the process model of emotion regulation (Gross, 1998) will be presented. Again, the emphasis will be on dispositional emotion regulation, focusing on cognitive reappraisal and suppression as two important emotion regulation strategies. In the following chapter 2.3, empathic self-efficacy, empathy and prosocial behavior, empathic and social self-efficacy beliefs as possible contributors to prosocial behaviors will be examined. Additionally, gender differences in all main variables will be discussed. At the end of each chapter, the derived hypotheses will be specified. Chapter 3 will provide a description of the current study conducted to test the given hypothesis. To examine the relationship between prosocial behavior and the three possible contributors, empathy, emotion regulation and self-efficacy beliefs, a correlational analysis design was utilized. For this purpose, self-report measures of empathy, emotion regulation and self-efficacy beliefs, as well as, self-report and behavioral measures for different forms of prosocial behaviors were used. The participants were invited to *Freie Universität*

Berlin to answer the self-report questionnaires, which was followed by a behavioral assessment of prosocial behavior. In the behavioral assessment the participants were presented with the opportunity to donate money to a charity and to act prosocial by giving another student the possibility to take part first in the experiment. Chapter 3 also provides a detailed description of the study design, measures and statistical analysis. Finally, in chapter 4, the results found will be presented and discussed in relation to previous research and possible limitations.

2. Theoretical Background

2.1 Empathy and Prosocial Behavior

As mentioned above empathy has been widely discussed as a main cause of prosocial behaviors and altruism. Despite years of research, there are still fundamental definitional differences and numerous alternative theories on empathy and its influence on helping behaviors. The discussion surrounding these definitional issues are mainly concerned with the question of whether empathy involves only recognizing the emotions of another person and being able to imagine to be in his or her position, or the vicarious experience of emotions, or even both. While some only see the affective aspect of empathy as fundamental (Nancy Eisenberg, 2000), others define empathy as comprising cognitive and affective components (Davis, 1983; Reniers, Corcoran, Drake, Shryane, & Völlm, 2011; Shamay-Tsoory, 2011). Others even perceive emotion regulation as an important part of a functional model of empathy (Decety & Jackson, 2006). But more research is needed to determine how emotion regulation and the underlying neural networks are related to empathy. This will be discussed briefly at a later point in this chapter.

Concepts including both components define cognitive empathy (CE) as the ability to comprehend other person's experiences and take the other person's perspective, whereas affective empathy (AE) refers to the ability to vicariously experience emotional experience of other individuals (Reniers et al., 2011). The ability to comprehend another person's perspective by using visual, auditory or situational clues, as a key aspect of cognitive empathy, allows an individual to make inferences about another person's emotional states and to construct a working model

of those (Reniers et al., 2011; Shamay-Tsoory, 2011). Affective empathy on the other is based on the fast recognition of the other person's emotions, which causes an emotional response. It refers to the susceptibility for and the experience of another person's feelings (Reniers et al., 2011). Additionally, it is emphasized that cognitive empathy is not equivalent to the concept of theory of mind (ToM). While ToM refers to the representation of other people's cognitions, cognitive empathy refers to the representation of emotions (Reniers et al., 2011).

The assumption of two distinct components of empathy is further supported by clinical and neurological research. While psychopathy is related to impairments in affective empathy (Blair, 2005), autism (Baron-cohen & Wheelwright, 2004; Blair, 2005; Dziobek et al., 2008) and borderline personality (Harari, Shamay-Tsoory, Ravid, & Levkovitz, 2010) are linked to impairments in cognitive empathy. This dissociation further bolsters the assumption of two distinct components of empathy. By exploring the interindividual differences in the balance between cognitive and affective empathy components, it was found that the relative dominance of the affective component over the cognitive components was related to stronger within-network functional connectivity in social-emotional networks. Dominance of the cognitive component, by contrast, was related to stronger within-network resting-state functional connectivity in social-cognitive and interoceptive networks (Cox et al., 2012). Furthermore, individual differences in affective and cognitive empathy were related to differences in local gray matter density. Higher scores on the affective empathy scale were related to larger gray matter density in the right and left insula cortex and higher scores on the cognitive scale were associated with higher density in the midcingulate cortex and adjacent dorsomedial prefrontal cortex (MCC/dmPFC). (Eres, Decety, Louis, & Molenberghs, 2015). An fMRI based quantitative meta-analysis further concluded that cognitive and affective empathy can also be distinguished at the level of regional brain activation (Fan, Duncan, de Greck, & Northoff, 2011). Collectively these results validate the assumption of two distinct components of empathy.

But what is prosocial behavior? Prosocial behavior is defined as being voluntary and intentional, resulting in benefits for another person. It can be motivated by altruistic or egoistic interests. Altruistic behavior, a specific form of prosocial behavior, is solely aimed to help another person but without the expectation of future

reciprocity or to reduce own distress (Eisenberg & Miller, 1987). Prosocial behaviors can be further devised into informal, person-to-person helping behaviors, and formal helping behaviors through institutions (Einolf, 2008).

Does empathy promote prosocial behavior? Two important theories in empathy research answer this question differently. On the one hand, the empathy-altruism hypothesis (Batson, 1991) states that empathy evokes altruistic motivation, which then is followed by prosocial behavior. Even though the helping behavior could have positive consequences for the person helping, the ultimate goal is to increase the other person's welfare. If this theory is true, a highly empathic individual would help, even if they can physically and psychologically escape the situation. On the other hand, the aversive-arousal reduction hypothesis proposes that empathy evokes unpleasant feelings and personal distress. Thus, individuals help to reduce their own distress. If this theory is true, people would help only when escaping the situation is not possible (Batson, 1991).

One important influence on empathy and prosocial behavior that needs to be mentioned, is gender. Several studies found gender differences in empathy. Some studies found that women report higher levels of cognitive and affective empathy (O'Brien, Konrath, Grühn, Hagen, & Brien, 2012; Reniers et al., 2011), while others only found significant differences in affective empathy (Rueckert, 2011) or no differences at all (Cox et al., 2012; Edele, Dziobek, & Keller, 2013). Studies using fMRI also support gender-related differences in brain regions connected to empathy (Schulte-Rüther, Markowitsch, Shah, Fink, & Piefke, 2008). Additionally, women volunteered at a higher rate and give more frequently, but lower amounts and spread their donations across different sectors of charitable giving (De Wit & Bekkers, 2015; Einolf, 2011). Another important influence is emotion regulation, which will be discussed in the next chapter.

In the following section, results concerning the relationship between the two aspects of empathy and different forms of prosocial behaviors will be presented. The focus will be put on studies using a non-experimental setting, while experimental studies will be only presented shortly. Due to theoretical similarities, studies conceptualizing empathic concern as affective empathy and perspective taking as cognitive empathy will be included. Using an experimental setting, an early study offered evidence for the empathy-altruism hypothesis. Empathy was positively

correlated with helping behavior. The subjects in the high empathy condition showed higher rates of helping even if escaping the situation was possible. This supports the hypothesis that the helping behavior was altruistically motivated and not by the goal to reduce personal distress (Toi & Batson, 1982). Accordingly, a positive association between empathy, induced by perspective-taking instructions, and helping behaviors was found. Their results further confirmed the predictions of the empathy-altruism hypothesis because the individuals high in empathy tended to offer help even when physiologically and psychologically escaping the situation was possible (McGlothlin & Killen, 2010).

Despite extensive research in the empathy field, relatively little research has focused on the trait perspective of empathy. A limited number of studies examined the relationship between different aspects of dispositional empathy and prosocial behaviors. Analyzing 15 different prosocial behaviors, of which three are formal actions taken through institutions and 11 of which are informal, person to person activities, it was found that empathic concern was not an important predictor for formal helping behaviors. While some of the person to person helping behaviors correlated relatively strongly with empathy levels, others did not correlate significantly. Overall, the results show an inconsistent relationship between empathic concern and helping behaviors measured by self-report questionnaires (Einolf, 2008). Similarly, two studies investigating traditional and health related philanthropy as forms of prosocial behavior found inconsistent results for the components of empathy. While perspective-taking is not related to any form of philanthropy (Bekkers, 2006), empathic concern is correlated with participation in voluntary associations (Bekkers, 2005). Further empathic concern increases generosity and the probability of giving to charities. But it did not increase the probability of donating blood or signing up as an organ donor (Bekkers, 2006). However, the relationships found were weak. Others, however, found a significant positive relationship between empathic concern and costly altruistic behavior (FeldmanHall, Dalgleish, Evans, & Mobbs, 2015), as well as with a prosociality composite index (Eisenberg et al., 2002). Including both components of empathy at a time, it was found that affective and cognitive empathy are both positively associated with prosocial tendencies, such as compliant prosocial tendencies or emotional prosocial tendencies. Furthermore, the relationship between affective empathy and prosocial tendencies was moderated through the level of cognitive reappraisal, an emotion regulation strategy (Lockwood,

Seara-Cardoso, & Viding, 2014). This result will be discussed in more detail in the following chapter.

By using a behavioral measure for altruistic sharing, a form of prosocial behavior, it was found that affective empathy was strongly positively correlated with altruistic sharing, whereas cognitive empathy was not (Edele et al., 2013). Compared to the aforementioned studies (Bekkers, 2006; Einolf, 2008) the correlations found were much higher. Edele et al. (2003) trace this back to the fact that they included a more naturalistic based measures of empathy, and did not only use self-report questionnaires for empathy. Furthermore, they assessed altruism through actual behavior in the dictator game instead of relying solely on self-report questionnaires for prosocial behavior. The results of a missing relationship between prosocial behavior and cognitive empathy is in line with the finding mentioned earlier (Bekkers, 2006).

In addition, neurological studies extend the described results. Affective empathy and perspective taking were both associated with altruistic giving, but were linked to distinct brain networks. Whereas affective empathy was related to activation in the anterior insula, cognitive perspective taking was associated with activation in the temporoparietal junction. First of all, this supports the assumption of two distinct components of empathy and, at the same time, the hypothesis of empathy as a motivator for prosocial behavior (Tusche, Bockler, Kanske, Trautwein, & Singer, 2016).

To summarize one could say that both components of empathy seem to be related to prosocial behaviors, but the results are very inconsistent and sometimes weak. While the relationship between affective empathy was supported more consistently (e.g. Bekkers, 2005, 2006; Edele et al., 2013; Toi & Batson, 1982), only some studies support an association between cognitive empathy and prosocial behavior (Lockwood et al., 2014; Tusche et al., 2016). To my knowledge no previous study utilized self-report and behavioral measures of different forms of prosocial behavior, as well as both components of empathy. In addition, no comparison between different forms of prosocial behavior in relation to empathy has been done. An early review by Eisenberg & Miller (1987) already pointed out that the extent of the relationships found differed depending on the measures used and context. They found that the relationship between empathy and prosocial behavior seemed to be

stronger in experimental settings inducing empathy and when using more naturalistic measures of empathy. They also found that the extent of the correlations differed between studies. Aside from that, only one of the studies mentioned used a behavioral measure to assess prosocial behavior, although self-report measures of empathy and especially prosocial behavior are at risk to be biased by social desirability (Dziobek et al., 2008).

Consequently, the aim of this study is to specify and extend the described inconsistent findings and systematically compare the two components of empathy. In order to investigate if empathy is related to real-life prosociality, behavioral measures for prosocial behavior will be included, along with a self-report measure. Real-life informal behavior is defined as being a person-to-person altruistic behavior, in which the help-receiving person is present. This behavior is an on-time decision performed spontaneously (Einolf, 2008). Within this study, real-life informal helping behavior is assessed by a behavioral task, in which the participants are given the opportunity to let another student take part first in the experiment. Formal helping behavior is described as a prosocial behavior performed through an institution, such as a charity. Regarding the formal helping behaviors, the receiving person is not present and the helping behavior is planned and not spontaneous (Einolf, 2008). In the current study real-life formal helping behavior is assessed in the behavioral assessment by giving the participants the opportunity to donate money to a charity for refugees in Berlin. A more detailed description of the behavioral tasks is given in the chapter 3.3.4. It is hypothesized that both components are positively associated with real-life formal, as well as real-life informal helping behavior. Due to the inconclusive results concerning gender differences all the proposed hypotheses will be tested for men and women.

The hypotheses are:

H1: Cognitive empathy is positively correlated with self-reported prosocial behaviors (informal and formal)

H2: Cognitive empathy is positively correlated with behaviorally assessed prosocial behaviors (informal and formal)

H3: Affective empathy is positively correlated with self-reported prosocial behaviors (informal and formal)

H4: Affective empathy is positively correlated with behaviorally assessed prosocial behaviors (informal and formal).

2.2 Emotion Regulation, Empathy and Prosocial Behavior

As briefly mentioned above, emotion regulation is a considerable influence on prosocial behavior, as well as on empathy. So far relatively little research has focused on the analysis of the direct relationship between emotion regulation and prosocial behavior, but there several assumptions on the influence of emotion regulation through empathy. First the affective, cognitive and social consequences of expressive suppression will be discussed. Based on those consequences their impact on empathy and prosocial behavior will be presented. Lastly, the moderating and direct influences of emotion regulation strategies will be discussed. But to begin, a brief introduction into the core features of emotions and emotion regulation will be given.

2.2.1 Emotions and emotion regulation.

According to the response tendency conception, an emotional response will be generated if stimuli have been evaluated as important to an individual or holding some kind of challenge or opportunity (Gross, 1998). Those appraisals generate emotional responses, which involve changes in experiential, behavioral, and neurobiological response systems (Mauss, Levenson, McCarter, Wilhelm, & Gross, 2005). But even more important is the fact that emotions involve tendencies to act in a specific way (Gross, 2015). These described features are integrated into the modal model of emotion. This model proposes that emotions involve an interaction between an individual and a situation which generates attention and has some kind of meaning to that individual as well as activates response tendencies that follow the goal to alter that given interaction. This change in the individual-situation-interaction can be seen as a starting point in a new emotion generative process (Gross, 2013). But most importantly these response tendencies can be modulated and this modulation defines the final form of the emotional response (Gross, 1998). This modal model of emotion generation is the basis of the process model of emotion regulation described in the following section.

The term emotion regulation refers to the regulation of emotions themselves, attempting to influence which emotions one has and how one expresses them. It is defined as the manipulation of either the emotion antecedents or behavioral, subjective or physiological aspects of an emotional response (Gross & Levenson, 1993). People use emotion regulation strategies to change the emotion they're feeling, as well as, the intensity, duration and quality of this emotion (Gross, 2015). Furthermore, it is hypothesized that different regulation strategies should alter the emotion in different ways (Gross, 2015). These regulatory processes may be automatic or controlled, conscious or unconscious, and may have their effects at one or more points in the emotion generative process (Gross, 1998).

To better understand the concept of emotion regulation, the following characteristics should be considered: It is argued that emotion regulation can be implicit or explicit, both necessary to adapt successfully to an emotionally charged environment (Gyurak, Gross, & Etkin, 2011; Koole & Rothermund, 2011). Moreover, emotion regulation strategies can be divided into antecedent-focused and response-focused strategies (Gross & Muaoz, 1995). Antecedent-focused emotion regulation encompasses the attempts to regulate one's own emotions before the emotion unfolds. An example of this form of emotion regulation is the attempt to adjust the emotional input by changing the external or internal environment. Or through changing the way how the stimulus is appraised and thus its emotional meaning. In contrast response-focused emotion regulation takes place at a later time of the emotion generative process. In this case the already generated response tendencies will be regulated or modified (Gross & Muaoz, 1995). The emotion generative process includes the following steps in the given order: a particular situation is selected, modified, attended to, appraised and yields a particular set of emotional responses (Gross, 2013). The process model of emotion regulation considers each of those steps as a potential target of an emotion regulation strategy. Following this, there are 5 categories of emotion regulation strategies, with each having different consequences for the emotional response as well as the cognitive and affective experience of the ongoing emotion (Gross, 1998). To better understand the involved processes, the process model of emotion regulation is displayed in Figure 1. Relevant for this study are the second to last category, cognitive change, and the last category, suppression.

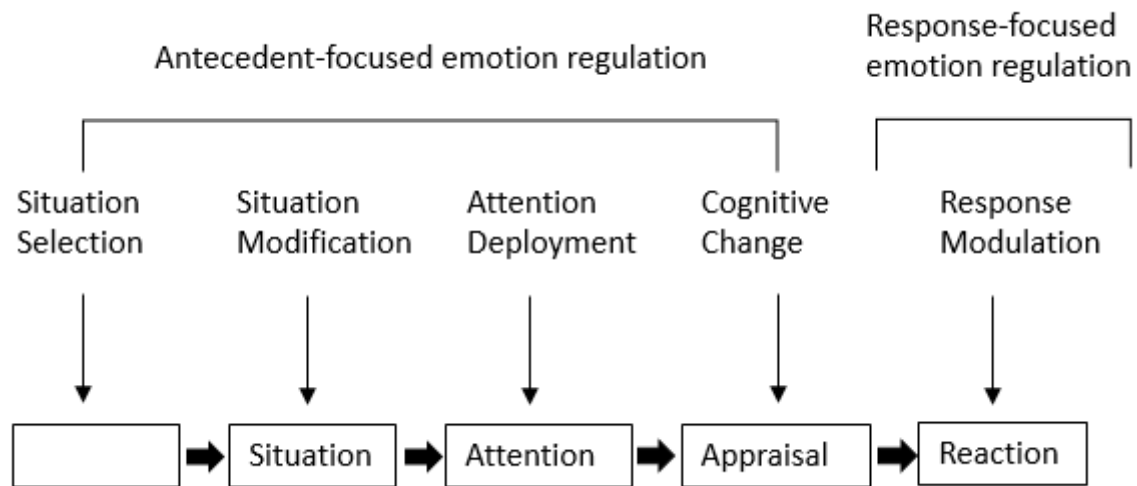


Figure 1. The process model of emotion regulation (Gross, 1998)

Cognitive change is targeted at the second to last step in the generative process, the appraisal of a stimulus. One could change which meaning will be attached to a situation. One example of this antecedent-focused emotion regulation strategy is cognitive reappraisal (Gross, 2013). The chosen meaning then elicits emotional response tendencies, which include behavioral, experiential and physiological changes (Gross, 1998). The last possible intervention point is the response modulation. This refers to the direct influencing of experiential, behavioral or physiological components of the emotional response after the emotion is evolved (Gross, 2015). Expressive suppression is a form of response modulation referring to efforts to inhibit one's emotion expressive behavior. Based on this process-model of emotion regulation, suppression and reappraisal influence the emotion generative process at different points and are thus accompanied by different affective, cognitive and social consequences. It is assumed that appraisal alters the entire emotional response, thus leading to lesser experiential, behavioral and physiological responses. Whereas suppression is expected to cause a decrease in expressive behavior but not in emotion experience, and possibly increase physiological responses (Gross & John, 2002).

In the following section the affective, cognitive and social consequences of the two emotion regulation strategies will be discussed in regard to prosocial behavior and empathy. Again results concerning empathic concern will be included, because of the conceptual similarities between affective empathy and empathic concern.

2.2.3 Affective, cognitive and social consequences of emotion regulation.

Seeing another person in need evokes an emotional response which then can be modulated by emotion regulation. As stated above, suppression and reappraisal work at different points and are therefore expected to have different affective consequences. Because reappraisal is an antecedent-focused emotion regulation strategy and influences the emotion-generative process at an early point, individuals using reappraisal can not only modify the expression of an emotion, but also what they experience and share with others. Suppression is a response-focused emotion regulation strategy and influences the emotion generative process at a later point, thus individuals using suppression can only modify what they express. Hence, affective consequences are only expected for expressive suppression (Gross, 1998).

Instructing participants to use expressive suppression while watching an emotion eliciting film was associated with decreased expressive behavior, greater sympathetic nervous system activation and greater arousal. Suppression had no effect on the subjective experience of disgust or sad emotions. Expressive suppression only reduced positive emotion experience while watching an amusing film (Gross & Levenson, 1997; Gross, 1998; Gross & Levenson, 1993). On the contrary, reappraisal decreased negative emotion experience and emotion expression, but did not increase physiological activation (Gross, 1998).

Habitual use of reappraisal was linked to greater experience of positive emotion, as well as, to greater expression of positive emotion in self-reported and peer-reported measures. Reappraisal was also correlated with lower levels of negative emotion experience in both self-report and peer-report measures. It was also related to less negative emotion expression. Whereas suppression was linked to less positive emotion expression and experience on both self- and peer report measures. Furthermore, the subjects habitually using suppression were more likely to experience negative emotions. This increased negative effect can be attributed to feelings of inauthenticity, which can emerge when frequently using suppression as an emotion regulation strategy (Gross & John, 2003). Similar results were found for the emotion anger. The high-reappraiser reported less anger, less negative emotion and greater positive emotion during a baseline measurement and during the anger

provocation. High reappraisers also exhibited a more adaptive cardiovascular response in comparison to low reappraiser (Mauss, Cook, Cheng, & Gross, 2007).

To conclude, suppression is accompanied by detectable physiological costs and does not reduce temporary negative emotions in experimental settings, but is linked with increased negative affect in everyday life.

Besides the described affective consequences, the cognitive consequences of emotion regulation have been investigated. Gross and John (2002) argue that expressive suppression involves continual self-monitoring and self-corrective actions when experiencing an emotional event, thus consumes a significant amount of cognitive resources which then are not available for processing other inputs. Reappraisal, contrastingly, does not need those continuous regulatory processes because it sets in at an earlier point in the emotion generative process. Consequently, less cognitive resources are needed and other processes like memory are still intact. In line with these assumptions, experimentally induced expressive suppression is related to impaired performance in recall and recognition memory tasks for emotional stimuli (Richards & Gross, 1999, 2000). Moreover, suppression participants were less confident about their memory than participants who just watched the film. Because specifically verbal memory was impaired through expressive suppression, it is hypothesized that subvocal self-monitoring is an important cause for the negative effects of suppression on memory (Richards & Gross, 2000). Individual difference findings further support the experimental findings. Individuals high in habitual expressive suppression reported worse memory capabilities and performed worse on an objective memory task than a control group. Habitual use of reappraisal had no effect on self-reported and objective memory measures (Richards & Gross, 2000). Summarizing the results suggest, that only expressive suppression is cognitively costly and negatively affects memory. The described cognitive consequences may also have a negative impact on social functioning. For example, suppression could disrupt the required memory that is needed for successful social interactions (Richards & Gross, 2000). The social consequences will be discussed in the next section.

Another aspect that could be interrupted by emotion regulation is the social area. This area of research gained a lot of attention in the past years, yet, very little is known about the social consequences of the use of different emotion regulation

strategies. As described above, suppression decreases negative and positive emotion-expressive behavior. Thus socially relevant information is hidden and can't be received by an interaction partner. Additionally, the suppression and monitoring of one's own facial expression and other emotion expression signs needs a significant amount of cognitive resources, which could make the suppressing individual less responsive to their interaction partners. Consequently, it is assumed that suppression has adverse social consequences. Unlike suppression, cognitive reappraisal was not associated with cognitive costs und decreased negative emotion expression. Thus, it is assumed that reappraisal has either no or even positive social consequences relative to suppression (Gross & John, 2002, 2003; Srivastava, Tamir, McGonigal, John, & Gross, 2009).

Experimental findings indicate that only the use of suppression distracted the regulators and reduced their responsiveness and emotion expression. Interaction partners of individuals using suppression (suppressors) while discussing an upsetting topic reported less satisfaction and interest in forming a friendship compared to partners of non-suppressors. Moreover, the interaction partners of suppressors experienced increased physiological activation. The use of reappraisal had no significant effect on any of these measures (Butler et al., 2003). But this experimental design only included one setting, in which open emotion expression was normative and socially desirable. And the participants weren't matched to the suppression or reappraisal group according to their habitual used emotion regulation strategy (Srivastava et al., 2009). And the sample size was small, containing only women.

In a sample of college students, habitual suppression was negatively associated with self-report and peer-report measures of social functioning. The subjects habitually using suppression were less likely to share positive or negative emotions. Further they report more avoidance in close relationships, more depressive symptoms and less social support, especially emotional support. Suppression was also negatively associated with well-being, life-satisfaction, self-esteem and optimism. Opposed to that, reappraisal had no social costs (Gross & John, 2003).

By means of longitudinal study designs the described results were extended to a more naturalistic context and allow the analysis of causal relations. In line with previously described findings the use of suppression predicted less social support, less closeness and lower social satisfaction (Srivastava et al., 2009). Including

reappraisal in a longitudinal study designs, results revealed that suppression predicted lower peer-rated social connection, whereas reappraisal predicted better social connections and higher sociometric standing. These results suggest that the habitual use of suppression could reduce the chances of forming and maintaining close friendships during college. Reappraisal however seems to aid the development of friendships and higher sociometric standing (English, John, Srivastava, & Gross, 2012). These findings were later specified by showing that the social costs of suppression are caused by feelings of inauthenticity, but not due to reduced positive emotion expression. When habitually suppressing one's own emotion, an incongruence between experience and expression develops, which may cause a feeling of inauthenticity. This is not the case when using reappraisal as emotion regulation strategy (English & John, 2012).

To conclude one could say that both, induced and habitual suppression, are linked to diverse immediate and long-term social costs. These effects of suppression cannot be explained by reduced expression of positive emotion, but by inauthenticity stemming from incongruence between the individual's inner experience and outer expression of emotion (English & John, 2012). Again, the results for reappraisal were inconsistent. While two studies found no social costs of reappraisal (Butler et al., 2003; Gross & John, 2003), one study even found beneficial effects of reappraisal on social functioning (English et al., 2012). Concluding, suppression is linked to unfavorable affective consequences, higher cognitive cost and diverse negative effects on social functioning. Reappraisal successfully decreases negative emotion experience and has no effect on memory. Moreover, reappraisal has no or beneficial effects on social functioning. While no gender differences in the reappraisal scale were found, men scored higher on the suppression scale (English & John, 2012; Gross & John, 2003). Further no gender differences were apparent for the social consequences (Gross & Levenson, 1993, 1997). The implications of the given consequences for empathy and prosocial behavior will be reported in the next section.

2.2.3 Relating empathy, emotion regulation and prosocial behavior.

With regard to the described affective, cognitive and social consequences of the two emotion regulation strategies, it has been concluded that emotion regulation

influences the empathic response (Lebowitz & Dovidio, 2015). The way emotions are regulated determines if an individual feels empathic for another person in need and is willing to act prosocial. The experience of another person in need leads to arousal, which then can be modulated through emotion regulation. It is argued that individuals who are less able to regulate their emotions are less likely to experience empathy, but more likely to experience personal distress (Eisenberg, 2000). Following the assumptions made in chapter one, empathic concern is an important cause for prosocial behavior, thus emotion regulation indirectly influences prosocial behavior (Lebowitz & Dovidio, 2015). Due to the described negative consequences of expressive suppression, a negative relationship with empathic concern is expected (Lebowitz & Dovidio, 2015). Especially because of reduced emotion sharing, social support and less social closeness (English & John, 2012; Gross & John, 2003; Srivastava et al., 2009), which are crucial prerequisites for experiencing empathic concern. Further the use of suppression reduces the experience of positive emotions (Gross & John, 2003) and empathic concern could be considered a positive emotion, which could be decreased by suppression (Lebowitz & Dovidio, 2015).

Supporting the assumptions described, habitual use of suppression, as well as experimentally induced suppression, were negatively associated with empathic concern. Similar with the social consequences the results for reappraisal were inconsistent. Habitual reappraisal was positively associated with empathic concern.

Experimentally induced reappraisal did not correlate significantly with empathic concern. Additionally, through the negative effect on empathic concern, habitual and experimentally induced suppression showed an indirect association with increased desire for social distance. As well as, directly and indirectly predicted less willingness to help. On the contrary, habitual reliance on reappraisal through its positive association with empathic concern had a positive effect on the desire for social distance (Lebowitz & Dovidio, 2015). Similarly, participants instructed or primed to use reappraisal reported less arousal and more empathic concern than participants using rumination, which is another maladaptive form of cognitive emotion regulation (López-Pérez & Ambrona, 2015).

Hence, the way emotion regulation influences empathy seems to depend on the specific emotion regulation strategy. Only reappraisal reduced arousal which makes personal distress less likely (López-Pérez & Ambrona, 2015). But more

importantly, suppression indirectly increased the desire for social distance (Lebowitz & Dovidio, 2015). As stated above an essential requirement for the feeling of empathic concern, is to feel socially connected (Batson et al., 1991), which will be restricted if there's a desire for social distance. Thus, individuals who rely on suppression are less likely to experience empathic concern (Lebowitz & Dovidio, 2015).

The findings about emotion regulation influencing empathic concern and prosocial behavior have been further evaluated. Another approach proposes that emotion regulation moderates the relationship between empathy and prosocial behavior. Lockwood et al. (2014) considered different emotion regulation strategies as potential moderators of the relationship between empathy and prosocial behavior. They found that affective and cognitive empathy are both positively associated with prosocial tendencies. Furthermore in their study, reappraisal was not correlated with prosocial tendencies and suppression was significantly negatively correlated with prosocial tendencies. They were able to show that affective empathy was associated with prosocial behavior for those with low and average levels of cognitive reappraisal, but those with high levels of cognitive reappraisal presented similar levels of prosocial behavior regardless of their level of affective empathy. The observed moderation effects of cognitive reappraisal on the association between affective empathy and prosocial behavior, were not evident for associations between cognitive empathy and prosocial behavior. Cognitive empathy was positively associated with prosocial tendencies regardless of the level of reappraisal emotional regulation strategies. This could be due to the similarity in the processes involved in cognitive empathy and cognitive reappraisal (Lockwood et al., 2014).

Summarizing, only few studies directly investigated the direct relationship between emotion regulation and prosocial behavior. No relationship between reappraisal and prosocial behavior was found, whereas suppression was negatively related to prosocial behavior (Lebowitz & Dovidio, 2015; Lockwood et al., 2014). The assumption of a negative relationship between suppression and prosocial behavior is further supported by the negative affective, cognitive and social consequences of suppression. Reappraisal however, was found to either have no or positive affective, social or cognitive consequences (Gross & John, 2002). To my knowledge, no study has systematically compared the effects of emotion regulation on different forms of

prosocial behavior yet. Based on the aforementioned findings the aim of this study is to further support the negative association between suppression and prosocial behavior, but also to specify the proposed association by including self-report and behavioral measures of informal and formal prosocial behavior. In addition, the inconsistent results for reappraisal lead to the assumption of no significant relationship with prosocial behavior, which however will be tested for different forms of prosocial behavior. As no previous study investigated gender differences in the association between emotion regulation and prosocial behavior, and because of the inconsistent results concerning gender differences in the use of suppression and reappraisal, the proposed hypotheses will be tested for men and women. Finally, the aims to extend the existing results concerning the assumed relation between empathy and emotion regulation by including both components of empathy.

The hypotheses are:

H5: Expressive suppression is negatively correlated with affective and cognitive empathy.

H6: Reappraisal is positively correlated with affective and cognitive empathy.

H7: Expressive suppression is negatively correlated with informal and formal helping

H8: Reappraisal is not correlated with informal and formal helping behaviors

2.3 Empathic Self-efficacy, Empathy and Prosocial Behavior

Another widely discussed influence on prosocial behavior are self-efficacy beliefs. Self-efficacy beliefs determine if an individual believes whether he or she is able to achieve a specific goal. These beliefs are based on the capabilities an individual attributes to herself or himself. They then influence how the individual feels, thinks and decides to act in a specific situation. The beliefs can be altered through new experiences and learning (Bandura, 1997; Bandura, Caprara, Barbaranelli, Gerbino, & Pastorelli, 2003). Emotional self-efficacy beliefs refer to more interpersonally oriented efficacy beliefs, like empathic self-efficacy (Caprara & Steca, 2005). It is hypothesized that regulatory self-efficacy beliefs, social self-efficacy beliefs and empathic self-efficacy beliefs are crucial factors influencing different aspects of psychosocial functioning, like prosocial behavior. It is argued that an

individual will only act prosocially if he or she believes in being able to regulate his or her own emotions and being able to help (Alessandri, Caprara, Eisenberg, & Steca, 2009; Bandura et al., 2003).

Empathic self-efficacy beliefs refer to one's belief in being able to experience and respond to another person's emotions and needs. These beliefs are based on empathic competences, like the capacity to share another person's feelings. Empathic self-efficacy beliefs are seen as a possible antecedent of prosocial behavior, because they strengthen the capacities and motivation needed to help another person (Di Giunta et al., 2010). Thus empathic self-efficacy beliefs are possible agents of prosocial behavior. If people feel competent at acting prosocially they are less likely to experience personal distress when seeing another person in need (Alessandri et al., 2009). Even though it is expected that the actual capabilities to act empathically and to handle interpersonal relationships can add to the perceived capabilities, it is also possible that a person holds great empathic skills and yet has very low self-efficacy beliefs, or vice versa (Di Giunta et al., 2010). Social self-efficacy beliefs are defined as the perceived capability to handle interpersonal relationships (Caprara, Steca, Zelli, & Capanna, 2005). This includes judgments about the abilities to give one's opinion, work in a group and handle conflicts (Di Giunta et al., 2010).

Supporting the given hypothesis, empathic self-efficacy beliefs are positively linked with prosocial behavior, both when measured concurrently and longitudinally. Further the relationship between perceived self-efficacy to regulate positive and negative emotion and prosocial behavior is fully mediated through empathic-self efficacy (Bandura et al., 2003). Perceived self-efficacy to manage negative and positive affect contributed to social self-efficacy and empathic self-efficacy, which in turn contributed to prosocial behavior. Further prosocial behavior was correlated with greater life satisfaction (Caprara & Steca, 2005). A later study again confirmed that social and empathic-self-efficacy beliefs both contribute to prosocial behavior (Caprara & Steca, 2007). A longitudinal study found that empathic self-efficacy beliefs not only were strongly correlated with prosociality but also that empathic self-efficacy predicts prosociality across time. Furthermore, empathic self-efficacy beliefs mediated the relationship between regulative emotional self-efficacy beliefs and prosociality. This shows that the beliefs to be competent in handling one's own

emotions contribute to one's perceived efficacy to act empathically, which then influences prosocial behavior (Alessandri et al., 2009). A study designed to examine how agreeableness and empathic self-efficacy beliefs predict prosociality across time in adolescents, also found both to be significant predictors of prosocial behavior. In addition, empathic self-efficacy beliefs partially mediated the link between agreeableness and prosocial behavior (Caprara, Alessandri, di Giunta, Panerai, & Eisenberg, 2010). These results show that not only stable traits like agreeableness influence prosocial behavior, but also self-efficacy beliefs, which are flexible and learning-based (Caprara et al., 2010). Correspondingly, Caprara, Alessandri and Eisenberg (2012) found that empathic self-efficacy beliefs are not only a significant predictor of prosocial behavior on their own, but also a mediating variable in the relationship between values, personality traits and prosocial behavior. They proposed that the influence of those inherited and stable traits on prosocial behavior is mediated through psychological structures like self-efficacy beliefs. They found a significantly larger correlation between self- and other-rated prosocial behavior and empathic self-efficacy beliefs than with social self-efficacy beliefs. Moreover, empathic self-efficacy beliefs mediated the relationship between agreeableness and prosociality.

Again women reported higher levels of prosociality than men (Bandura et al., 2003; Caprara et al., 2010; Caprara & Steca, 2005, 2007). Women further reported higher scores for empathic self-efficacy beliefs, and men higher scores for social self-efficacy beliefs (Caprara et al., 2010; Caprara & Steca, 2007; Di Giunta et al., 2010).

To summarize, the existing research consistently supported a positive association between empathic self-efficacy and prosocial behavior, while the influence of social self-efficacy beliefs on prosocial behaviors has not been examined sufficiently. Because prosocial behaviors mostly take place in interpersonal settings, the belief in being able to handle interpersonal relationships might also contribute to prosocial behavior. However, no assumptions can be made about the specific relationship with formal and informal helping behaviors, as previous research did not distinguish between different forms of prosocial behavior. To my knowledge, the relationship between actual prosocial behavior and self-efficacy beliefs hasn't been analyzed yet. The aim of this study is to extend the existing research by including self-report and behavioral measures of informal and formal helping behavior.

Resulting from the described findings the hypotheses are:

H9: Empathic self-efficacy is positively correlated with all forms of prosocial behavior.

H10: Social self-efficacy is positively correlated with all forms of prosocial behavior.

3. Methods

3.1 Research Question and Hypotheses

The central research question of this study is, what contributes to prosocial behavior? The relationship between dispositional empathy, dispositional emotion regulation, self-efficacy beliefs and prosocial behaviors will be assessed. To further contribute to existing results both components of empathy will be included. Further a division between informal and formal helping behavior will be made. Additionally, a behavioral measure for prosocial behavior will be included. The specific hypotheses are:

H1: Cognitive empathy is positively correlated with self-reported prosocial behaviors (informal and formal)

H2: Cognitive empathy is positively correlated with behaviorally assessed prosocial behaviors (informal and formal)

H3: Affective empathy is positively correlated with self-reported prosocial behaviors (informal and formal)

H4: Affective empathy is positively correlated with behaviorally assessed prosocial behaviors (informal and formal)

H5: Expressive suppression is negatively correlated with affective empathy

H6: Expressive suppression is negatively correlated with informal and formal helping behaviors

H7: Reappraisal is positively correlated with affective empathy

H8: Reappraisal is positively correlated with informal and formal helping behaviors

H9: Empathic self-efficacy is positively correlated with all forms of prosocial behavior

H10: Social self-efficacy is positively correlated with all forms of prosocial behavior

3.2 Study Design

This research utilized a cross-sectional design to conduct correlation analyses. The recruitment of participants and the data collection was conducted at *Freie Universität Berlin*. In order to find significant results G-Power analysis showed a recommended sample size of at least 64 participants. Furthermore, participants should be 18 years or older. Participants were invited via Email using the Email recruitment system of the Department of Psychology at Freie Universität Berlin. Participants received 1,5 *Versuchspersonenstunden* for their participation. The participants were seated in front of a 17-inch monitor and faced to the door in order to ensure that they can see the other person entering the room. The participants were instructed to thoroughly read the information given on the screen. Written informed consent was included into the data collection. Additionally, the participants were informed that the study includes a 5 min break, which will be announced at the screen. During the break the two behavioral tasks, which will be described in the measures section, were conducted. After finishing the behavioral tasks, the participants were informed about the contents of the study and the behavioral tasks.

3.3 Sample

The resulting sample included 88 participants, with 79,5 % female participants. The age ranged between 18 and 63 years ($M = 24.78$, $SD = 7.7$). While 75% of the participants reported the general higher education entrance qualification (Abitur/Matura) as their highest completed level of education, 13.6% have completed a bachelor's degree and 6.8% completed a master's degree or an equivalent. The majority (92%) of the participants were students of psychology. Others studied architecture (1.1%), economics (1.1%), History (1.1%), art history (1.1%) and process engineering (1.1%). In this sample 79.5 % of the participants were German, while the rest reported to be from Austria or other countries.

3.4 Variables

The variables of interest are cognitive and affective empathy as the two components of empathy, expressive suppression and cognitive reappraisal as emotion regulation strategies, empathic self-efficacy and social self-efficacy and prosocial behavior. Prosocial behavior is further specified in informal and formal prosocial behaviors and will be assessed through self-report and behavioral tasks. To exclude the effect of possible confounding variables, measures for social desirability, alexithymia and positive, as well as negative affect will be included. Additionally, demographical data will be assessed. Demographics included sex, age, education, nationality, employment.

3.3 Measures

3.3.1 The Questionnaire for Cognitive and Affective Empathy.

The Questionnaire for Cognitive and Affective Empathy (QCAE; Reniers et al., 2011) was used to assess cognitive and affective empathy. The cognitive component comprises the subcomponents perspective taking and online simulation. Perspective taking is described as imagining oneself in another person's perspective. Online simulation is described as the attempt to imaging the other person's emotional state. The affective component includes the 3 subcomponents emotional contagion, proximal responsivity and peripheral responsivity. Emotional contagion refers to the automatic mirroring of another person's feelings. Proximal responsivity refers to responsiveness in a close social context, whereas peripheral responsiveness refers to responsiveness in more segregated context. An example for an item of the cognitive subscale is "I find it easy to put myself in somebody else's shoes". An example of the affective subscale is "I often get emotionally involved with my friends' problems". Each of the 31 items was measured on a 4-point-Likert Scale ranging from "strongly agree" to "strongly disagree". Support for satisfactory reliability and validity is provided by the authors (Reniers et al., 2011). Fur purpose of this study a German version translated by Dr. Marc Shipper from the University of Bremen was used.

3.3.2 Emotion Regulation Questionnaire.

The Emotion Regulation Questionnaire (ERQ; Gross & John, 2003) measures individual differences in the preference for the use of the two emotion regulation strategies expressive suppression and cognitive reappraisal. Each of the item items is intended to measure one of the two strategies. An example for suppression is the item “I control my emotions by not expressing them”. An example item for reappraisal is “I control my emotions by changing the way I think about the situation I’m in”. Additionally, to those general-emotion items, each scale included one item about the regulation of a negative emotion. The items were rated on a 7-point Likert scale ranging from strongly disagree to strongly agree. The alpha reliabilities for suppression averaged at .79 for reappraisal and .73 for suppression. Comparable values were found for the German version, which was used in this study (Abler & Kessler, 2009).

3.3.3 Empathic and Social Self-Efficacy.

Perceived empathic and social self-efficacy were assessed with 12 items, using a shorter adaption by Di Giunta et al. (2010) of the original questionnaires by Bandura et al. (2003) and Caprara, Gerbino and Delle Fratte (2001). The Perceived Empathic Self-efficacy scale (PESE) measures the perceived abilities to be sensitive to another person’s emotional state and needs, recognize emotional expressions, vicariously experience another person’s emotions, respond empathically and to be aware of how the own actions influence another person’s feelings. An example is “How well can you read your friends’ needs?” The Perceived Social Self-efficacy scale (PSSE) assesses judgments about the own abilities to speak one’s mind, share experiences and resolve conflicts. An example is “How well can you actively participate in group activities?”. Items were rated on 5-point response scale ranging from “not well” to “very well”. Cronbach’s alpha for the PESE and PSSE were .78-.69 in an Italian sample (Di Giunta et al., 2010). The PESE and PSSE scales were translated and then backtranslated into German by two bilingual speakers.

3.3.4 Prosocial behavior.

3.3.4.1 *Self-report measures.*

The items to measure self-reported prosocial behavior were derived from a study using survey data from the General Social Survey (Einolf, 2008). This General Social Survey includes an altruism module, which includes, amongst other questions on prosocial behavior, questions derived from the Self-Report Altruism Scale by Rushton, Chrisjohn and Fekken (1981). In this study 13 items from the GSS will be used. Ten of the items refer to informal, person-to-person helping behaviors, with an example being “Giving money to a homeless person”. Three of the items refer to formal helping behaviors through institutions, with an example being “Done volunteer work for a charity”. The participants were asked how often they have done each of the described activities in the last years. Response categories were: more than once a week, once a week, once a month, two or three times in the past year, once in the past year, and not at all during the past year. The categories were coded into an interval scale. A total score and the two subscales, informal and formal helping behavior, were created by summing the relevant items.

3.3.4.2 *Behavioral task for prosocial behavior.*

In order to assess actual prosocial behavior, two behavioral tasks were included. One the tasks aimed to measure formal helping prosocial behavior and one to measure informal helping behavior. The behavioral tasks were conducted after the participants completed all questionnaires and a 5 min break was announced. After completing both behavioral tasks the participants were informed about the content of the study

To assess formal helping behavior, the participants were given the opportunity to donate money to a charity for refugees in Berlin. This behavioral task was aimed to assess helping behavior through an institution. Thus, the help receiving person was not present. To ensure that the helping behavior was planned rather than spontaneous information, the possibility to donate money was included in the invitation via Email. In the invitation it was written: “Due to a request for support for humanitarian aid of the care center for incoming refugees in Berlin, you will have the possibility to donate money during the experiment if you want to.” Additionally, in the

beginning of the study the participant was again informed about to the possibility of donating money. To conduct the behavioral task, the participant was giving an envelope and an information sheet containing details on the receiving charity institution. The participants were informed, that the donation is voluntary and the amount of the donation may be freely decided. In order to reduce the influence of social desirability, the investigator left the room. After completing both behavioral tasks, the participants were informed that the donation was part of the experiment, but the money will be actually donated for refugees. The participants were given the possibility to take back their money if they did donate.

Actual informal prosocial behavior was assessed by giving the participants the opportunity to let another student (confederate) take part in the experiment first. This was aimed to measure spontaneous person-to-person helping behavior. When the participant had announced that he or she has completed the first part of the experiment, the investigator gave the confederate a sign to enter the room. The confederate claimed to be another student who wants to take part in the experiment and has made an appointment at a different time. She further explains that she has a very important presentation and need time to prepare after the experiment. She then asked if she can take part now. The investigator asked the participant if the confederate is allowed to take part now and explained that the participant had to wait for a least the amount of time as he/she has spent on completing the first part of the experiment, which was about 20 min. To avoid that the participants had other time restrictions and therefore had the time to wait, the invitation claimed that the experiment takes 1,5 hours to be completed. If the participant agreed, the investigator explained that due to technical reasons she's not able to pause the participant's session without losing all the collected answers. The confederate then agreed to make an appointment at another day. If the participant refuses to wait, the confederate leaves the room. The chronological order in which the tasks were conducted, as well as the role of investigator and confederate was alternated.

3.3.5 Social Desirability.

In order to assess social desirability the German adaption of the Social Desirability Scale-17 (SDS-17; Stöber, 1999) was conducted. It measures socially desirable response behavior. Participants are asked to rate if a statement describes

them or not. Response categories were “true” or “false”. An example is “I sometimes litter”. The internal consistency ranged from .72 to .75. Test-retest stability across 4 weeks was .82.

3.3.6 Positive and Negative Affect Schedule.

The adapted German Positive and Negative Affect Schedule (PANAS; Krohne, Egloff, Kohlmann, & Tausch, 1996) includes 20 adjectives describing positive or negative affect. The Positive Affect (PA) refers to the extent to which a person experiences positive affect like feeling active or enthusiastic. Negative Affect (NA) refers to subjective distress and aversive moods, like anger or disgust. Depending on the instruction the PANAS measures either a trait or state conception of affective states. Participants were asked to rate on a 5-point Likert scale how they have felt in the last 12 months. Response categories ranged from “very slightly or not at all” to “extremely”. The reliability of the PANAS scale is with a cronbach’s alpha of .84 very satisfactory.

3.3.7 Toronto-Alexithymia-Scale 26

The German adaption of the Toronto-Alexithymia-Scale 26 (TAS-26; Kupfer, Brosig, & Brähler, 2001) measures difficulties with emotional processing and emotional awareness. The original scale included 4 subscales, of which the subscale for reduced daydreaming is recommend not be calculated by the German authors, due to its incompatibility with the alexithymia construct. The other subscales refer to difficulties in identifying feeling and describing feelings, as well as, to an external oriented style of thinking. For the purpose of this study only a total alexithymia score is calculated. The 26 items can be rated on a 5-point-Likert scale ranging from “strongly disagree” to “strongly agree”. An item for example is “I often don’t know why I am angry”. The cronbach’s alpha for the 4 subscales ranged between .67 and .84.

3.4 Statistical Analysis

The statistical analysis was conducted using the Statistical Package for the Social Science (SPSS 23). In order to test the described hypotheses two-sided correlation tests, using $\alpha < 0.05$ will be calculated. Missing values were replaced with

the mean of the respective subscale. Due to the described gender differences, the correlational analyses will be separated by sex, using the split file command. On the basis of significant correlations with the variables of interest, social desirability and age are included as controls.

4. Results

A complete display of all correlations between the main variables empathy, emotion regulation and self-efficacy beliefs is listed in the table 1 for women and table 2 for men. For all reported correlations, age and social desirability were used as controls. These intercorrelations displayed that only for women the cognitive and affective empathy component were significantly correlated, $r(68) = .27, p = .028, d = .56$, while this relationship was not significant for men. For both genders the total score of empathy was highly correlated with each of the components. No significant association was evident between emotion regulation and all empathy scores. A significant association between the total score of empathy, as well as cognitive empathy and perceived empathic self-efficacy was found for both genders. This will be described further in the results in chapter 4.3. Only for women suppression was negatively associated with perceived social self-efficacy, $r(68) = -.50, p = .000, d = 1.16$ and reappraisal was positively associated with perceived social self-efficacy, $r(68) = -.26, p = .032, d = -0.54$.

Table 1. Correlation coefficients (*r*) of the main variables for women.

	QCAETOT	COG	AFF	SUPP	REAP	PESE	PSSE
QCAETOT	1.00						
COG	.856***	1.00					
AFF	.726***	.266*	1.00				
SUPP	.118	.184	-.025	1.00			
REAP	.100	.015	.166	-.033	1.00		
PESE	.622***	.714***	.211	.185	.034	1.00	
PSSE	.182	.080	.233	-.501***	.260*	.201	1.00

Note. Age and gender are used as control variables; p^* : significant correlation with $p \leq .05$; p^{**} : significant correlation with $p \leq .01$; p^{***} : significant correlation with $p \leq .001$. QCAE- Questionnaire of cognitive and affective empathy total score; COG- Subscale Cognitive Empathy Score; AFF- Subscale Affective Empathy Score; SUPP- Suppression Subscale Score; REAP- Reappraisal Subscale Score; PESE- Perceived Empathic Self-Efficacy Score; PSSE Perceived Social Self-Efficacy Score.

Table 2. Correlation coefficients (*r*) of the main variables for men.

	QCAETOT	COG	AFF	SUPP	REAP	PESE	PSSE
QCAETOT	1.00						
COG	.870***	1.00					
AFF	.624*	.158	1.00				
SUPP	-.382	-.206	-.439	1.00			
REAP	-.152	.048	-.380	.379	1.00		
PESE	.753**	.798***	.244	-.003	-.058	1.00	
PSSE	.149	.151	.060	.292	.307	.183	1.00

Note. Age and gender are used as control variables; p^* : significant correlation with $p \leq .05$; p^{**} : significant correlation with $p \leq .01$; p^{***} : significant correlation with $p \leq .001$. QCAE- Questionnaire of cognitive and affective empathy total score; COG- Subscale Cognitive Empathy Score; AFF- Subscale Affective Empathy Score; SUPP- Suppression Subscale Score; REAP- Reappraisal Subscale Score; PESE- Perceived Empathic Self-Efficacy Score; PSSE Perceived Social Self-Efficacy Score.

4.1 Empathy and Prosocial Behavior Results

On the Cognitive empathy scale of the QCAE females had a mean of 63.09 ($SD = 6.04$), men reported a significantly lower mean of 58.77 ($SD = 7.5$), $t(86) = 2.57$, $p = .012$. On the affective empathy scale females had a mean of 37.27 ($SD = 4.68$), men reported a mean of 32.89 ($SD = 5.93$). The Mann-Whitney U-Test displayed a significant difference, $U (n_1 = 70, n_2 = 18) = 358$, $p = .005$, $z = -2.82$.

45.7% of participating women acted prosocial in the informal behavioral task and agreed to wait. 58.6% of the participating women donated money to the charity in the formal behavioral task. 61.1% of the participating men agreed to wait in the informal behavioral task and 44.4% donated money for the charity in the formal task. There was no statistically significant difference in the formal and informal helping behaviors of women and men in the behavioral task. 167,55 Euros have been collected and donated to a charitable organization helping refugees in Berlin.

In the self-reported formal helping behaviors women reported a mean of 52.85 ($SD = 46.78$), and men a mean of 45.80 ($SD = 38.37$), which was not significantly different. For self-reported informal helping behaviors women reported a mean of 118.54 ($SD = 77.25$), whereas men reported a mean of 99.92 ($SD = 79.70$), which was not significantly different.

Significant correlations between the two components of empathy and the two behavioral tasks were found only for men. Affective empathy was correlated with the total score of the behavioral task ($r(16) = .57$, $p = .022$, $d = 1.39$), and with the formal behavioral task ($r(16) = .57$, $p = .022$, $d = 1.39$)

For women a significant correlation was found between the total score of self-reported prosocial behaviors and cognitive empathy, $r(68) = .25$, $p = .04$, $d = 0.51$, as well as, between cognitive empathy and in self-reported informal helping behaviors $r(68) = .25$, $p = .04$, $d = 0.51$. No significant correlation between self-reported prosocial behavior, as well as the two behavioral tasks and affective empathy was found.

For men no significant correlation was found between self-reported prosocial behavior and the two components of empathy. No significant correlation was found

between self-reported and actual prosocial behavior. Only for men, the positive affect scale of the PANAS was negatively correlated with self-reported prosocial behavior, $r(16) = -.51, p = .04, d = -1.18$. For women the negative affect scale of the PANAS positively correlated with self-reported informal helping behavior, $r(68) = .26, p = .03, d = 0.53$.

4.2 Emotion Regulation Results

On the suppression scale of the ERQ men reported a mean of 3.71 ($SD = 1.28$) and women a mean of 3.33 ($SD = 1.17$), which was not significantly different. On the reappraisal scale of the ERQ men reported a mean of 4.76 ($SD = 0.97$) and women a mean of 5.01 ($SD = 0.91$), which was not significantly different.

Correlational analyses showed no significant correlation between emotion regulation and self-reported prosocial behaviors for both genders. For women no significant relationship between both emotion regulation strategies and the behavioral tasks were found. Only for men significant negative correlations between suppression and actual prosocial helping behavior in the behavioral task were found. Suppression correlated negatively with the total score of the behavioral task $r(16) = -.70, p = .002, d = -1.96$. Further suppression correlated negatively with the formal behavioral task, $r(16) = -.68, p = .003, d = -1.85$. No significant correlation was found between the two components of empathy and both emotion regulation strategies.

4.3 Self-Efficacy Beliefs Results

For empathic self-efficacy beliefs women reported a mean of 24.74 ($SD = 2.88$) and men a mean of 23.38 ($SD = 2.81$), which was not significantly different. For social self-efficacy women reported a mean of 19.71 ($SD = 3.09$) and men a mean of 19.28 ($SD = 3.03$), which was not significantly different. For men no significant correlations between self-efficacy beliefs and self-reported or actual prosocial behavior were found. For women significant correlations between self-reported prosocial behaviors and self-efficacy beliefs were found, which are displayed in table 3, but not for actual prosocial behavior.

Table 3. Correlation coefficients of self-reported prosocial behavior and self-efficacy beliefs for women.

	PESE	PSSE
SR Prosocial Behaviors Total	.277*	.098
SR Prosocial Behaviors Informal	.262*	-.011
SR Prosocial Behaviors Formal	.209	.242*

Note. Age and gender are used as control variables; p^* : significant correlation with $p \leq .05$; p^{**} : significant correlation with $p \leq .01$; p^{***} : significant correlation with $p \leq .001$. PESE- Perceived Empathic Self-Efficacy Score; PSSE Perceived Social Self-Efficacy Score; SR- Self-reported.

For both men and women the perceived empathic self-efficacy, but not perceived social self-efficacy, was highly correlated with cognitive empathy. For men the correlation coefficient was $r(16) = .80$, $p = .000$, $d = 2.66$ and for women $r(68) = .71$, $p = .000$, $d = 2.02$. No significant correlations between PESE, as well as PSSE, and affective empathy were found. Furthermore, for women, the positive affect scale of the PANAS was positively correlated with social self-efficacy beliefs, $r(68) = .30$, $p = .01$, $d = 0.63$. The negative affect scale was negatively correlated with social self-efficacy beliefs, $r(68) = -.30$, $p = .01$, $d = 0.63$.

5. Discussion

5.1 Empathy and Prosocial Behavior

The hypothesis that cognitive empathy is correlated with self-reported prosocial behavior (H1) was only partially supported. Only females' self-reported informal prosocial behavior and the total score for self-reported prosocial behavior were related to cognitive empathy. Against the hypothesis (H2) cognitive empathy was not associated with behaviorally assessed prosocial behavior, both in men and women. Contrary to the hypothesis that affective empathy is related to self-reported prosocial (H3), no significant correlations were found, for both men and women. The assumed association between affective empathy and behaviorally assessed prosocial behavior (H4) was only supported in parts. While for women no correlation

was found, men's affective empathy was moderately correlated with donating money and the total score for the behavioral tasks.

In summary, the results contradict the general assumption that empathy is related to prosocial behavior, since only very specific associations were found to be significant. Consequently, empathy might only make a small contribution to real-life prosocial behavior. The current findings mirror the inconsistent relationship between empathy and prosocial behavior. While a significant effect for cognitive empathy was only found for women in self-reported prosocial behavior, men's affective empathy correlated with donating money in the behavioral task. Again results differ between different measures of prosocial behavior and genders.

There are several factors that could account for the inconsistent association between empathy and prosocial behavior. When considering the used measures for empathy and prosocial behavior some limitations and possible improvements become evident. However, when comparing the different findings, it is important to keep in mind that the results of studies using an experimental design cannot be generalized and applied to other research set-ups or real-life situations. In experimental set-ups other factors, like situational characteristics or traits may be controlled or less influential, but play an important role in everyday life (Eisenberg & Miller, 1987). It is possible that such additional factors lead to different results between experimental set-ups and studies based on self-report measures. As the current study included two different measures of prosocial behavior, each of it might be influenced by different factors and situational characteristics. These in turn might result in different outcomes, as in this study, different associations between empathy and prosocial behavior for the two prosocial measures. Additionally, the measure used to assess empathy has a substantial influence on the strength of the associations (Eisenberg & Miller, 1987). Studies using more naturalistic or behavioral measures for empathy, for the example the Multifaceted Empathy Test (MET; Dziobek et al., 2008), or using an experimental settings inducing empathy found the strongest associations (Edele et al., 2013). Studies using self-report and survey data found only little or no associations (Bekkers, 2005, 2006; Einolf, 2008). Thus, the deficiency of self-report measures of empathy could account for the inconsistent results.

This influence of the used measures might also be apparent in measures for prosocial behavior. The current findings displayed that cognitive empathy is not correlated with the behavioral task for prosocial behavior, which is in line with a study using a behavioral task for measuring prosocial behavior (Edele et al., 2013). Another study however, using self-report measures for prosocial behavior, found a significant relationship between prosocial behavior and cognitive empathy (Lockwood et al., 2014). Comparable to the measures of empathy, the previous and current results emphasize the variation in the relationship between different prosocial behavior measures used. Additionally, the self-report measure for prosocial behavior has limitations, too. Due to its retrospective nature it is likely to be biased by memory distortions, as the participants had to recall the amount of helping over the last twelve month (Einolf, 2008).

But even more importantly, several of the assessed helping behaviors are influenced by the factor if the participant even was presented with the opportunity to help (Smith, 2006). This random factor might distort the relationship between empathy and prosocial behavior. Consequently, even if the participants recall their helping behavior correctly, it might still be influenced by random variations in the opportunity to help. Moreover, the measure for empathy and prosocial behavior are both considered to be highly susceptible to social desirability (Edele et al., 2013), as people consider empathy to be a positive trait (Schumann, Zaki, & Dweck, 2014). This may be especially true for psychology students, because being able to understand another person's feeling is considered as a crucial ability of psychologists. Further it is claimed that self-report measures for empathy and prosocial behavior lack ecological validity (Dziobek et al., 2008).

With regard to methodological limitations, the imprecise distinction between different forms of prosocial and altruistic behavior might also lead to contradictions in the research. It is not clear if empathy is related to all the different forms of prosocial behaviors as the studies mentioned in the beginning all examined the relationship of empathy to very different aspects of prosocial behavior. The dictator game for example refers to altruistic sharing (Edele et al., 2013) and others are interested in everyday helping behavior (Einolf, 2008). Future studies should define and standardize prosocial behaviors more precisely. Additionally to the distinctions made between formal and informal helping behavior, one could further distinguish between

helping a friend or a stranger. Knowing the person you help or not could dramatically influence your motivation to help. If you help a friend you could also be motivated by expectancy of future reciprocity or increased appreciation. Thus, helping a friend might not be motivated by altruism or empathic feelings, but by egoistic goals (Edele et al., 2013). Examples for helping a friend in the current study are talking to a depressed friend or helping with the household. The distinction between helping a friend or a stranger is further supported by neurological evidence showing that distinct brain regions are activated when seeing a friend or a stranger in need (Meyer et al., 2013). While empathy for friends relied on emotion sharing and self-processing mechanisms, empathy for strangers relied more on mentalizing systems. When differentiating between friends and strangers, also gender differences should be taken into account. Singer et al. (2006) found gender differences in the pain related empathic response for friends or persons who are considered as enemies. Furthermore, the results might be influenced by ingroup-outgroup effects (Cikara, Bruneau, & Saxe, 2011), since the confederate could have been perceived as a ingroup member because she claimed to be a student too, whereas the refugee receiving the money might have been perceived as an outgroup member.

With reference to the distinction between helping a friend or a stranger, the importance of the underlying motivations for prosocial behavior comes to mind. It is not only argued that other motivations than empathy, for instance personal distress, promote prosocial behavior (Batson, 1991), but also that empathy itself might be influenced by different motivations (Zaki, 2014). The motivated model of empathy proposes that an individual can be motivated to experience or avoid empathic feelings, which can result in a modulation in order to reduce or intensify empathy. For example, one could be motivated to avoid the costs of helping by reducing the empathic response (Zaki, 2014). If these assumptions are valid, not only empathy but also motivational factors would influence prosocial behavior. Subsequently individuals might hold the same empathic abilities, yet their motivations to modulate their empathic response are different and therefore results in different behavior. For this reason, it is possible that different motivations distort the relationship between empathy and prosocial behavior, thus should be included future analyses.

Apart from motivational factors, it is important to examine several other variables when reconsidering empathy and prosocial behavior (Eisenberg, 2000). For

instance, personality traits, values and concepts such as the principal of care and perceived oneness are considerable influences (Maner et al., 2002; Wilhelm & Bekkers, 2010). Above all gender seems to be an important variable. While Einolf (2008) found sex, compared to empathy, to be a more powerful predictor for prosocial behavior, the current study found no significant correlation between gender and the measures for prosocial behavior. Nevertheless, gender differences in the found relationships were evident. In accordance with previous self-report findings (Reniers et al., 2011), women reported significantly higher levels of affective and cognitive empathy, but studies using behavioral and physiological measures of empathy did not report gender differences in the levels of empathy (Derntl et al., 2010; O'Brien et al., 2012). The gender differences in empathy seem to be more complex as Derntl et al. (2010) found. Women report higher levels of empathy and recruit different neural networks as men, but no differences in the behavioral measure were evident. Because gender differences are mostly evident in self-report measures (Nancy Eisenberg & Lennon, 1983; Rueckert, 2011), it is argued that they might result from differences in general emotional responsiveness. For this reason, it seems plausible, that in the current study the relationship between empathy and prosocial behavior was differentially influenced by gender because of the used empathy measure. Besides differences in empathy levels, men and women did show different prosocial behavior. In the current study men were more likely to wait in the informal behavioral task, whereas more women donated money in the formal helping behavioral task. No differences in the self-reported prosocial behaviors were evident. It is argued that gender differences in prosocial behavior might result from the type of prosocial behavior researched. While men show more chivalrous and public prosocial behavior, women show more altruistic, emotional and anonymous prosocial behaviors (Carlo & Randall, 2002; Eagly & Crowley, 1986). But even more important, the gender distribution in the used sample was unequal, with only 18 men and 70 women. The relatively small male sample made significant results for men more unlikely compared to the female part of the sample.

Furthermore, the self-report and behavioral measures for prosocial behavior were not correlated. This suggests that actual prosocial behavior and self-reported prosocial behavior are two distinguishable forms of prosocial behavior that might not be related. Thus their relationship to empathy might differ too. To my knowledge no previous study analyzed the accordance between self-reports and behavioral

measures in prosocial behavior. However, a fair degree of concordance between self-reported prosociality and other-rated prosociality was found (Caprara & Steca, 2007).

When comparing different prosocial behaviors, it is also necessary to consider the specific context. Batson et al. (2003) found that the influence of perspective taking as a form of cognitive empathy on altruism is context-specific. He found that the influence of imagining another person's feelings and imaging oneself in the other's place on altruistic sharing varies if the participant is a position of initial advantage or not. In the informal behavioral task the participant was in position of initial advantage, which thus must be considered a influencing factor. Another presumably important contextual factor is, that the participant in the behavioral task did not have the opportunity to leave the situation. Following the aversive-arousal hypothesis, this would mean that participants would help regardless of their empathy levels (Batson, 1991). Besides that, for the self-report measure of prosocial behavior it cannot be determined if the participant had the opportunity to leave or not.

Last but not least, it needs to be questioned if the behavioral task and the self-reported prosocial behaviors did even elicit empathic feelings in the participants. It seems also possible that the behavioral tasks evoked personal distress which, even though it might result in self-oriented feelings, leads to prosocial behavior in order to reduce the personal distress (Batson, 1991). To exclude that participants did not felt empathically aroused in the behavioral task, future studies should include this manipulation check. For the self-report measure, it is critical to identify empathic feelings, since it is a retrospective report and thus memory distortions are likely.

Regarding the found results, the described influences suggest that the two components of empathy might be related to different forms of prosocial behavior, which differ in their contextual characteristics and are additionally influenced by gender and motivational factors. Moreover, it can be assumed that the relationship between empathy and prosocial behavior might be influenced by divers moderating variables. Emotion regulation has been recently discussed as such a possible moderator (Lockwood et al., 2014). In the following section the results concerning emotion regulation and prosocial behavior will be discussed.

5.2 Emotion Regulation and Prosocial Behavior

The results concerning emotion regulation again only partially supported the proposed hypothesis. The hypotheses 5 and 6 were not confirmed, as neither suppression nor reappraisal were correlated with affective and cognitive empathy. Likewise, hypothesis 8 is supported, since no significant correlation between reappraisal and any form of prosocial behavior was found. Only the assumption, that suppression is negatively related to prosocial behavior was partially confirmed (Hypothesis 7). Only for men, suppression was negatively associated with donating money, as well as, with the total score of the behavioral task. No significant relation between self-reported prosocial behavior and suppression was found.

Although in previous studies the relationship between emotion regulation and empathy was inconsistent, the current results are somewhat surprising. They are contrary to former assumptions proposing an influence of emotion regulation on empathy (Eisenberg, 2000; Lebowitz & Dovidio, 2015; Lockwood et al., 2014), as well as, on prosocial behavior through empathy. In addition, the similarities in the involved processes, like shifting perspective, led to the expectancy that cognitive empathy and cognitive reappraisal might be significantly associated (Lockwood et al., 2014). The current study, however, was not able to support those assumptions.

Before discussing the results in detail, it is important to notice that the same limitations of the measures of prosocial behavior discussed in the context of empathy also apply to the following results.

Contrary to previous findings (English & John, 2012; Gross & John, 2003; Nolen-Hoeksema & Aldao, 2011), no gender differences in the use of reappraisal and suppression were found. But as already described, previous results on gender differences were inconsistent, which might be due to a greater complexity in the gender differences in the regulation of emotions (Gross & John, 2003). For example, it is assumed that men could be more likely to suppress sad emotions than women, but are less likely to suppress anger (Gross & John, 2003). However, contradicting previous results showing no gender differences in the social consequences (Gross & Levenson, 1993, 1997), in the current study the negative consequences of suppression on prosocial behavior were only apparent for men. The results further support the assumption of a negative relationship between suppression and prosocial

behavior (Lebowitz & Dovidio, 2015; Lockwood et al., 2014), and no effect of reappraisal was found. Previously only studies analyzing other aspects of social functioning reported a positive association with reappraisal (English et al., 2012). Studies directly measuring prosocial tendencies and willingness to help found no significant effect of reappraisal (Lebowitz & Dovidio, 2015; Lockwood et al., 2014).

Heterogeneity in the application of reappraisal might explain these inconsistent results. It is proposed that reappraisal can either be used before the emotion is fully evolved, but also when an emotion is already fully generated, which is proposed to impair working memory and to be less effective. Thus, it seems plausible that individuals apply those different types, which results in inconsistent outcomes (Sheppes & Meiran, 2007). This also might account for the ambiguity in the relationship between reappraisal and empathy. To exclude this factor, future studies should include more differentiated measures of reappraisal. Furthermore, the participants could have used reappraisal to achieve different goals. Depending on their motivation, they could have used it to either increase or decrease the empathic response (Zaki, 2014). And those different motivations may lead to different outcomes for reappraisal. Suppression on the other hand is applied in a uniform way, thus consistent results are expected (Lebowitz & Dovidio, 2015).

But in the current study previous findings for suppression were only partially replicated, since a relation was only found for men in the behavioral task. This may be traced back to limitations in the study design. First, it is possible that the behavioral tasks did not elicit emotions of high intensity and thus in need of regulation. It remains unclear if emotion regulation was needed. Especially in the formal helping task, no strong emotional stimulus was included. If the used stimuli were too mild, other factors, like attention regulation might be more important and influence prosocial behavior (Eisenberg, Eggum, & Di Giunta, 2010). Second, the reported habitual use of either of the emotion regulation strategies might differ from the strategy applied in the behavioral task. Hence, the actually used emotion regulation strategy should be determined additionally in following studies. The choice which strategy is actually used might depend on motivational and situational factors (Gross, 2015; Zaki, 2014). Likewise, the self-reported prosocial behaviors assessed are greatly heterogeneous and thus may differ in their emotional intensity. Whereas talking to a depressed friend might requires emotion regulation processes, giving

directions to a stranger differs considerably in emotional intensity and thus makes different emotion regulation strategies necessary. Consequently, the difference in the results between the self-reported and behaviorally assessed prosocial behaviors might be due to contextual influences and emotional characteristics. This corresponds to the assumption, that there is no context-independent definition on whether a specific regulation strategy is advantageous or not (Gross, 2015).

Furthermore, it remains unclear what specific emotion was elicited by our behavioral tasks and thus needed to be regulated. Differences in the evoked emotion might also result in differences in the relationship between emotion regulation and prosocial behavior. This might also be relevant when analyzing the gender differences found. As mentioned earlier, men and women differ in the used regulation strategy depending on the emotion (Gross & John, 2003). Subsequently it might be assumed that men are more likely to suppress the emotion elicited by the formal behavioral task. To investigate such possible gender influences, the evoked emotion must be uniquely determined.

Besides these limitations, other processes need to be taken into account to further understand the relationship between emotion regulation and prosocial behavior. Possible processes involved in the negative association are feelings of inauthenticity, which may result in the inability to feel socially connected (English & John, 2013; Gross & John, 2003; Srivastava et al., 2009). Since empathic concern, as a prerequisite for prosocial behavior, requires one to feel socially connected and to value another person's welfare (Batson, 2011), future studies should incorporate the assessment of these processes. Another possible determinate is the experience of reduced positive emotions and increased negative emotions. It is argued that suppression not only decreases the experience of positive emotion in general (Gross & John, 2003), but also empathic concern as a positive emotion (Lebowitz & Dovidio, 2015). But in this recent study no association between suppression and positive and negative affect in the last 12 months measures by the PANAS (Krohne, Egloff, Kohlmann, & Tausch, 1996) was found. Future studies should also include a measure of the affect on the day of assessment, to exclude its possible influence on the examined relationship. Furthermore measures for subjective and objective memory impairments can be included, since suppression is found to impair memory (Richards & Gross, 1999, 2000). Future studies could also include a broader set of

emotion regulation strategies, as well as measures for emotion regulation success since the ERQ (Gross & John, 2003) only assesses the frequency of the use but not the quality of the used strategy (Cai, Lou, Long, & Yuan, 2016).

Another indication of the assumption that suppression might distort social interactions is the negative correlation found between perceived social self-efficacy beliefs and suppression in women. It further contributes to the findings of negative social consequences of suppression (Gross & John, 2002, 2003; Srivastava, Tamir, McGonigal, John, & Gross, 2009; Butler et al., 2003). This shows that these individuals are not only perceived by others to be less responsive and socially functional, but also perceive themselves to be less competent in social interactions. However, previous studies found no gender differences in the social consequences of suppression (Gross & Levenson, 1993, 1997). Future studies need to investigate this relationship more closely and examine if this correlation can be found for men when using a larger male sample.

In conclusion, the results found suggest only a limited relationship between emotion regulation and prosocial behavior, which seems to be strongly influenced by situational factors and gender differences. It is onto future studies to analyze more precisely if methodological limitations and the mentioned influences account for the missing relationship contrary to previous results, or if the assumption of a relationship between emotion regulation and prosocial behavior has to be rejected. In the following section results concerning self-efficacy beliefs are discussed.

5.3 Self-efficacy beliefs and Prosocial Behavior

Again, the proposed hypotheses were only partially supported, as only for women significant associations were found. Supporting hypotheses 8 and 9 in parts, perceived empathic self-efficacy was moderately correlated with self-reported informal prosocial behavior and the total score for self-reported prosocial behavior. Perceived social self-efficacy was moderately correlated with formal self-reported prosocial behavior. No significant correlations were found for the actual prosocial behavior. For men, no significant correlations were found. Contrary to previous results (Caprara, Caprara, & Steca, 2003; Caprara & Steca, 2005, 2007; Eisenberg

et al., 2006), men and women reported the same level of empathic and social self-efficacy beliefs.

In conclusion, the results found contradict the assumption of self-efficacy beliefs as central contributors to prosocial behavior (Alessandri et al., 2009). As opposed to the current results, previous studies found that perceived social self-efficacy beliefs did not or only moderately correlate with prosocial behavior (Caprara et al., 2012). However, previous studies did not distinguish between formal and informal helping. Interestingly, the PESE and PSSE were correlated with different forms of prosocial behavior in the current study. Perceived empathic self-efficacy, which is based on empathic capabilities (Di Giunta et al., 2010), was related to informal self-reported helping behaviors. Social self-efficacy, which refers to the capability to handle interpersonal relationships, was related to formal helping behaviors. However, this was only evident for women. For this reason, it should be analyzed if the different prosocial behaviors require different types of capabilities to feel competent to handle them.

Moreover, perceived empathic self-efficacy was highly correlated with cognitive empathy, for both men and women. This strong correlation emphasizes that the processes underlying cognitive empathy and perceived empathic self-efficacy might be very similar or rest upon the same domains of functioning (Di Giunta et al., 2010). As mentioned before, empathic self-efficacy beliefs are based on empathic capabilities. These conceptual similarities are also reflected in the questions used to measure cognitive empathy and empathic self-efficacy. For example, “I can sense if I am intruding, even if the other person does not tell me” in the QCAE (Reniers et al., 2011) and “How well can you recognize whether a person is annoyed with you” in the PESE (Di Giunta et al., 2010). Apart from this, comparable correlations to those with cognitive empathy and self-reported prosocial behaviors were found. Similar to cognitive empathy, perceived empathic self-efficacy was related to self-reported informal helping behavior and the total score for self-reported prosocial behavior for women. As well as, perceived empathic self-efficacy was not related to self-reported prosocial behavior in men. Others also found a significant correlation with empathy, however, it is not clear if cognitive or affective empathy was measured (Di Giunta et al., 2010).

Taken together these results support the assumption that empathic self-efficacy might be based on actual empathy abilities. But they do not exclude alternative explanations. It seems possible that the participants did not differentiate between how they rate their empathy levels, as the QCAE intends to measure, and how competent and efficient they feel to act empathically, which the PESE intends to measure. In this case, the two questionnaires do not distinguish between empathic abilities and the perceived empathic self-efficacy beliefs. Thus, the high correlations would not stem from tapping on the same domains of functioning but from 2 measures assessing the same aspect. In line with previous results (Di Giunta et al., 2010), the PSSE and PESE were not correlated and thus the results further contribute to the distinction between the two.

With regard to high correlation with empathy, it should be considered that self-efficacy beliefs might only play a mediational role. It is argued that empathic self-efficacy beliefs operate between dispositions, as for example agreeableness, and prosocial behavior (Caprara et al., 2012). In previous studies perceived empathic self-efficacy mediated the relation between agreeableness and prosociality (Caprara, Alessandri, Di Giunta, Panerai, & Eisenberg, 2009). Future studies should investigate whether self-efficacy beliefs also mediate the relationship between empathy and prosocial behavior. Furthermore, it could be investigated how self-efficacy beliefs are related to regulation processes, since it is argued that empathic self-efficacy beliefs rest upon on the perceived abilities to handle positive and negative emotions (Alessandri et al., 2009; Bandura et al., 2003). Supporting this assumed association, empathic self-efficacy mediated the relationship between regulative emotional self-efficacy and prosocial behavior (Bandura et al. 2003; Caprara & Steca, 2005, 2007). However, in the current study no significant relationship between emotion regulation strategies and self-efficacy beliefs were found.

Nonetheless, it remains unclear why significant correlations between self-efficacy beliefs and prosocial behavior were only evident for women, even though, contrary to previous results, no gender differences in the means of self-efficacy were found. A possible explanation is the fact that the sample contained only 18 men, which reduces the likelihood of significant results. It needs to be investigated if self-efficacy beliefs contribute to a higher amount to empathy in women than in men. Additionally, the weak associations might result from the aforementioned limitations

and inconsistencies of the used prosocial measures. Otherwise gender differences in the prosocial behavior described above might also weaken the correlations.

The measure for self-efficacy has its limitations. As just the short version was used, future studies might profit from assessing a larger variety of aspects of self-efficacy beliefs (Di Giunta et al., 2010). Furthermore, self-efficacy beliefs are only accessible through self-report. Besides that, the PESE and PSSE scales have never been used in Germany before. Cross cultural studies revealed that the two scales might not have the same meaning in different countries (Di Giunta et al., 2010). Subsequently, the application of the PESE/PSSE must be validated in future studies. In the following section general limitations, future implications and a summary will be given.

5.4 General Limitations and Future Implementations

General limitations of this study refer to the measures used for prosocial behavior, the characteristics of self-report measures as well as to the characteristics of the sample. First of all, the measures used might be sensitive to social desirability, as prosocial behavior and empathy are considered to be valued as positive (Edele et al., 2013). To avoid an undesired effect on the examined relationships, social desirability was included as a control variable. As briefly mentioned before, the assessed prosocial behaviors are very heterogeneous. They differ in emotional intensity and their costs for the helping person. For example, giving directions is possibly associated with lesser costs than helping another person with the household. Talking to a depressed friend might be more emotionally arousing than offering a seat to a stranger in public transportation. The behavioral tasks also differ significantly in their associated costs, while the participants were free to choose the amount of money they donated, they had no influence on the amount of time they would have had to wait. The associated costs in the informal helping task might also be considered as a confounding aspect. The costs for the participants were relatively high, since they expected to wait at least 20 minutes. These high costs might mask or eliminate the expected associations between empathy, emotion regulation or self-efficacy beliefs and the informal helping behavior. These differences in the examined prosocial behaviors might have contributed to inconsistent results and limited their

comparability and their generalization. As briefly discussed above, it needs further evaluation if the behavioral tasks did stimulate an empathic response, but also if the participant recognized the needs of the confederate and realized that he or she was in the position to decide if the confederate can take part first. The self-report measure might also be confounded by mistakes in the recall of past events, contextual influences and comprehension deficits (Schwarz, 2007).

Disadvantages of the sample are based on the relatively small size as well as on the limited amount of male participants, a fact that could have accounted for insignificant results. Additionally, the sample used displayed low diversity in ethnicity, age and education. Particularly, the fact that 92% of the participants were psychology students is critical. It is argued that a sample of psychology students is not representative, neither is the selection of participants and assignment of tasks random. Additionally, this increases the possibility that the participants are not unbiased and naïve (Oyserman, Coon, & Kemmelmeier, 2002). Eventually, the recruitment via Email and rewarding the participants with “*Versuchspersonenstunden*” might also have created a biases.

5.5 Summary

In conclusion, the results are inconsistent and highly complex, consequently it is not possible to support a universal relationship between empathy, emotion regulation or self-efficacy and prosocial behavior. For all three main variables the relationship with prosocial behavior was different depending on gender and the form of prosocial behavior. For men only a significant relationship between affective empathy and donating money in the formal behavioral task was evident. In contrast, women’s cognitive empathy was related to higher levels of self-reported informal helping behaviors. But above all, self-reported prosocial behaviors and helping in the behavioral tasks were not correlated at all, neither for women or men. The results concerning emotion regulation were inconsistent too, showing only for men a significant negative relationship between the habitual use of suppression and donating money for charity in the behavioral task. No relation between self-reported prosocial behaviors and emotion regulation strategies were found. Contrary to the assumptions, emotion regulation and empathy are not correlated. Finally, only the self-efficacy beliefs of women were related to self-reported prosocial behaviors.

Interestingly, the perceived empathic self-efficacy beliefs of women and men were highly correlated with cognitive empathy. These deviating results between different forms of prosocial behavior suggest it might be influenced by a multitude of factors, such as situational characteristics and the person receiving help. Furthermore, they suggest that the relationships found are specific to the different forms of prosocial behavior and are limited in their generalizability. The precise cause for the gender differences found, needs to be further investigated. In consequence of the inconsistent results found, a strong direct influence of empathy, emotion regulation and self-efficacy on prosocial behaviors cannot be assumed. Future studies should include more powerful and exact measures, especially for empathy, prosocial behavior and emotion regulation. To more precisely investigate the influence of empathy and prosocial behavior, as well as gender differences, studies using more naturalistic measures of empathy and behavioral prosociality measures should be conducted. Equally important is a precise definition of the prosocial behaviors and the monitoring of contextual factors. Finally, a more representative sample would extend the existing results.

7. References

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10. Appendix

Abstract:

The aim of this study was to investigate the relationship between prosocial behavior and empathy, emotion regulation, as well as self-efficacy beliefs. In the current study two components of empathy, a cognitive and an affective component, are distinguished and both have been hypothesized to positively relate to prosocial behavior. Cognitive reappraisal and suppression, two emotion regulation strategies derived from the process-model of emotion regulation, are assumed to relate to prosocial behavior in different ways. Moreover, it is hypothesized that social and empathic self-efficacy are positively related to prosocial behaviors. The current study was conducted at *Freie Universität Berlin* and the sample included 88 (70 f, 18 m)

students. The two components of empathy, emotion regulation strategies, self-reported informal and formal prosocial behaviors and self-efficacy beliefs have been assessed by the use of questionnaires. Actual prosocial behavior was assessed through a behavioral task by giving the participants the opportunity to donate money and help another student. Correlational analyses revealed no general contribution of the three main variables to prosocial behavior, as most of the significant correlations found were only evident for either only men or women and varied between different forms of prosocial behaviors. Furthermore, self-reported and actual prosocial behavior were not significantly correlated. The results found suggest that the relationship of the three main variables and prosocial behavior strongly varies between different forms of prosocial behavior and is influenced by gender. Methodological limitations and insufficient differentiation between important aspects of prosocial behavior may have contributed to the results found.

Key words: prosocial behavior, empathy, emotion regulation, self-efficacy beliefs, suppression, cognitive reappraisal, empathic self-efficacy, social self-efficacy

Zusammenfassung:

Die vorliegende Studie beschäftigte sich mit dem Zusammenhang von prosozialem Verhalten und Empathie, Emotionsregulationsstrategien sowie Selbstwirksamkeitsüberzeugungen. Es werden zwei Komponenten von Empathie unterschieden, eine affektive und eine kognitive Komponente. Es wird angenommen, dass ein positiver Zusammenhang beider Komponenten zu prosozialem Verhalten besteht. Es wird zudem angenommen, dass die zwei Emotionsregulationsstrategien kognitive Neubewertung und Emotionsunterdrückung unterschiedliche Zusammenhänge mit prosozialem Verhalten aufweisen. Auch besteht die Annahme, dass empathische und soziale Selbstwirksamkeitsüberzeugungen positiv mit prosozialem Verhalten in Verbindung stehen. Diese Studie wurde an der *Freien Universität Berlin* mit einer Stichprobe von 88 (70w, 18m) Studenten durchgeführt. Mithilfe von Fragebögen wurden selbstberichtetes prosoziales Verhalten, Empathie, Emotionsregulation und Selbstwirksamkeitsüberzeugungen erfasst. Darüber hinaus wurde tatsächliches prosoziales Verhalten erfasst, indem die Teilnehmer die

Möglichkeit erhielten Geld zu spenden und einem anderen Studenten zu helfen. Korrelationsanalysen zeigten, dass nicht von einem generellen Zusammenhang zwischen den drei Hauptvariablen und prosozialem Verhalten ausgegangen werden kann, da die gefundenen Korrelationen für entweder nur Frauen oder nur Männer signifikant waren. Außerdem variierten die gefundenen Zusammenhänge je nach Art des prosozialen Verhaltens. Auch korrelierten selbstberichtetes und tatsächliches prosoziales Verhalten nicht miteinander. Diese Ergebnisse legen nahe, dass die Art des prosozialen Verhaltens und das Geschlecht einen entscheidenden Einfluss auf den Zusammenhang mit den drei Hauptvariablen haben. Zukünftige Studien sollten den Einfluss des Geschlechts näher untersuchen, da dieser noch weitgehend ungeklärt bleibt. Außerdem könnten Einschränkungen in der Methodik und eine unzureichende Differenzierung der prosozialen Verhaltensweisen zu den inkonsistenten Ergebnissen beigetragen haben.

Schlagworte: Empathie, prosoziales Verhalten, Emotionsregulation, Selbstwirksamkeitsüberzeugungen