MOTIVES FOR PROSOCIAL BEHAVIOR

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A LITERATURE REVIEW

Master Thesis

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June 09, 2023

Acknowledgement

I would like to thank all those that contributed to the success of this thesis and supported me during the whole process.

In the first place my thanks go to Prof. Dr. Clemens Puppe for taking over the supervision of my master thesis. Special thanks also to Dr. Hannes Rau for the excellent supervision and support from the topic identification to the final work. Thank you for the helpful remarks and discussions. Finally, I would like to thank my family and my friends that have been standing by my side, always ready to listen and support me.

Abstract

Prosocial behavior is commonly observed in everyday situations but also in economics. Understanding what motivates people to behave prosocially is important, to be able to elicit even more prosocial acts or predict expected support. This master thesis consists of a literature review that investigates the motives of prosocial behavior. Additionally, the approaches commonly used to experimentally test for these motives are discussed. The literature review shows that the following motives are most often studied: (pure and impure) altruism, warm glow, fairness, social image, self-image, reciprocity and Negative State Relief. While there is extensive literature on the topic, not all types of prosocial behavior are examined to the same extend. Situations of formal charitable donations are most often applied. Evidence and approaches are very clear for some motives, such as warm glow, and social image. Contrarily, for the motives pure altruism and Negative State Relief, results are particularly contradicting which is why the impact of these motives cannot be conclusively determined with the literature available. Future research possibilities include additional experimental tests for these motives, a clearer differentiation of impure altruism and a stronger focus on non-monetary types of prosocial behavior.

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DG	dictator game
EA	empathy-altruism
NSR	Negative State Relief
PGG	public goods game
HIT	hidden information treatment
TG	transparent game
SR	specific reciprocity
GR	generalized reciprocity

1. Introduction

Helping an elderly person getting on the bus, letting someone ahead in line, volunteering for a good cause or donating money, all of these, for many individuals everyday actions, showcase prosocial behavior. In Germany, 28.8 million people (39.7 %) engaged in volunteering in 2019 (Simonson et al. 2021, 1). And in 2022, monetary donations by Germans amounted to 5.7 billion Euros given by 18.7 million donors which is 28 % of the population (Corcoran 2023, 6). Both, the number of donors as well as the total donation amount, slightly decreased compared to 2021, but the average donation amount reached a new high (Corcoran 2023, 6). Some other countries observe even more prosocial behavior, as Germany internationally ranks 55th out of 119 countries, lagging behind in particular in the volunteering and helping sector (Charities Aid Foundation 2022, 22). Official numbers and further unreported acts of prosocial behavior show that behaving prosocially is not the exception and that there is a lot of potential to make a change with prosocial behavior.

But what motivates people to behave prosocially? Are people truly altruistic and act only for the better of the beneficiary or do egoistic motives play a role? Benefactor Peter D. Porsche once said: "Ich spende, wenn Sie so wollen, auch aus Egoismus - weil ich mich so am wohlsten fühle" (Ratzesberger 2015), clearly expressing an egoistic motivation behind his generousness. The German Volunteering Report by Simonson et al. (2021, 133) reports fun as the most common motive for volunteering, followed by altruistic motives. Furthermore, reciprocity, qualifications and reputation are listed, see Figure A1. Having knowledge of people's motivation to act prosocially brings several benefits. It helps to predict if and where help is expected "and how effective it is likely to be" (Batson 2010, 18). Additionally, recognizing relevant motives enables provocation of prosocial behavior and the usage of a setting which ensures that competing motives and goals lead to the desired behavior (Batson 2010, 18). An organization can, e.g., decide whether to recognize donations publically. This can lead to increased donations if people are motivated by recognition but can have the opposite effect if altruism was the motive and people don't want to be recognized to avoid others from assuming that they acted selfishly. When observing prosocial acts in the field, underlying motivations can't easily be detected and self-reports such as those in the volunteering report might be biased. Therefore, many researchers have investigated a multitude of motives for prosocial behavior empirically. These have to be disentangled and categorized. This leads to the focal question of this master thesis which

concentrates on the underlying motives, that make people act prosocially. This master thesis is organized as follows. First, the methodology is explained, the most important terms will be defined and their importance explained. Next, each identified motive will be examined in detail, including, e.g., definitions, economic background or insights from literature, that show proof or doubt for the motive. Additionally, the approaches used to test for the motive will be looked at closely. Chapter 9 concludes.

2. Methodology

To answer the research question a literature review is conducted. The procedure is based on the approach by Webster and Watson (2002). The first step is to identify the important literature. Therefore, the data base Google Scholar is queried with the main key words "motives for prosocial behavior". This query provides many results already, mainly related to the development of prosocial behavior in children. To narrow the results further down, the previously used phrase is completed with "-children" to exclude these, for the research question mostly irrelevant, results. Due to the large amount of literature available, only the most relevant papers were selected (e.g., prioritize papers from economics). In a second step, the selected literature is searched via backwards and forwards search, as suggested by Webster and Watson (2002, xvi), to identify important cited literature as well as literature that cites the key articles. The backwards search in particular led to a large amount of highly relevant literature. After identifying some main motives from the literature, additional queries were executed for specific motives, if more material was needed. These included the motive identified and the term "prosocial behavior" or a specific type of prosocial behavior, depending on the previous results. An exemplary query is "warm glow volunteering". Next, the literature is read and analyzed and a concept matrix is constructed and completed for each paper. See Figure A2 for an excerpt. In the following sections, the important definitions and key motives identified will be discussed in detail.

3. Prosocial Behavior – Definition and Role in Economics

The term prosocial behavior is very divers and broad which is why definitions vary widely between researchers and disciplines (Pfattheicher, Nielsen, and Thielmann 2022, 124–27). In this thesis, prosocial behavior is a "voluntary action" that "benefit[s] another individual or group of individuals" (Eisenberg and Mussen 1989, 3), regardless of the underlying mo-

tivation (Lewis 2021, 6319). Mandatory prosocial behavior shall for this thesis be excluded. The focus lies on finding motives for voluntary, self-initiated prosocial behavior.

Figure 1 shows the different types of prosocial behaviors that can be distinguished. On the highest level, prosocial behavior can be differentiated in formal and informal (Konrath, Ho, and Zarins 2016, 182). Formal behavior is usually planned and linked to an organization, e.g., volunteering and charitable donations, while informal behavior doesn't have the organizational connection, is spontaneous and entails simple daily acts such as helping someone on the bus or consoling someone (Konrath, Ho, and Zarins 2016, 182; Einolf 2008, 1271). In several studies, researchers further distinguish between different formal acts when examining motives, most frequently charitable donations, planned volunteering and blood donations. These distinctions are important, as motives might differ between the different types due to varying circumstances, e.g., for charitable contributions there is no presence of the direct beneficiary at the time of donation, but for informal helping behavior there is (Bekkers and Wiepking 2011, 925). This means that evidence for a motive can't necessarily be transferred to other types but is rather limited to the specific prosocial behavior it was observed with. Therefore, the specific type examined will be mentioned.

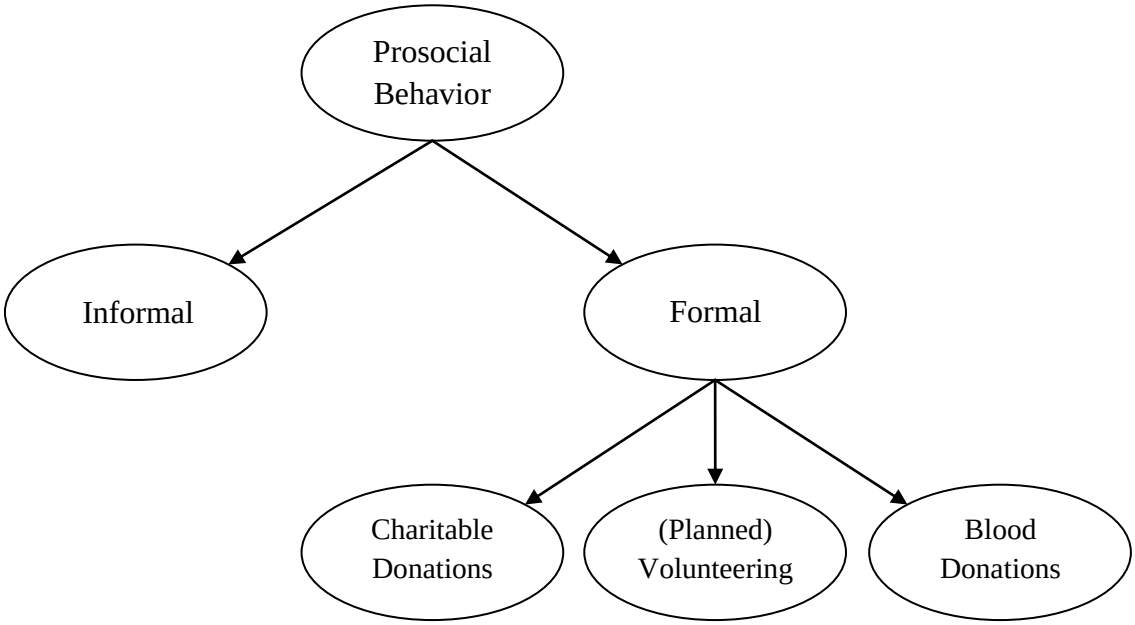

Figure 1: Types of prosocial behavior (own depiction)

Prosocial behavior can not only be observed in everyday life but also in economics. The most common economic game used to test for prosocial behavior and in particular altruism is the dictator game (DG). In the current version of this game, developed by Forsythe et al. (1994), the dictator decides on how to divide an endowment between himself and a second

player. This recipient has no active part in the game but has to accept the dictator's decision. Dictators only caring about their own welfare are expected to not give anything to the recipient. Still, in a meta analysis of DGs, Engel (2011, 588) finds that dictators on average give 28.35 % of their endowment, which is significantly different from the expected zero. Figure A3 shows individual giving rates. Only 36.11 % of dictators give nothing while 16.74 % split the endowment equally (Engel 2011, 589). These results clearly show that people do act prosocially, even if their own monetary gain decreases. How can such prosocial behavior that benefits another individual, but not necessarily oneself, fit with the economics perspective? Economists often look at the "homo oeconomicus" who is concerned with maximizing its own personal utility (Franz 2004, 6). The traditional homo oeconomicus acts rational which includes being neutral towards all peers and therefore indifferent about their wellbeing (Kirchgässner 2008, 42; Franz 2004, 5, 7). This concept is often criticized because real-world observations as well as studies (e.g., Henrich et al. 2001, 77; Engel 2011, 588, 589) show that people don't act accordingly, but care about others and not only themselves. Therefore, the concept of the homo oeconomicus had to be extended to allow for prosocial tendencies, in particular the selfless type, in the utility function. Andreoni and Miller (2002, 750) prove that altruism can be rational, so this concern for others can be included in a person's utility function (Muñoz-Herrera and Nikiforakis 2019, 809). Modern versions of the homo oeconomicus model now allow for altruism, fairness and more, as well as self-interest in the utility function (Kirchgässner 2008, 163; Gull 2002, 51) which is important for prosocial actors. There is not a single utility function that includes all motives (Godman, Nagatsu, and Salmela 2014, 581), but throughout this thesis some specific utility functions will be explained.

4. Distinction of Motives

The motives for prosocial behavior are widely diverse and while the term prosocial suggests that people primarily want to help others, many people are not motivated by benefits for another person but rather for themselves. This indicates that there might be several kinds of motives that can be distinguished by their ultimate goal. Batson et al. (2002, 429, 434; 1994, 603) differentiate four different motives by their ultimate goal: egoism, altruism, collectivism and principlism. Altruism and egoism differ in whose welfare benefactors ultimately aim at increasing. The ultimate goal of altruism is defined as "increasing the welfare of one or more [other] individuals" and the ultimate goal of egoism as

"increas[ing] one's own welfare" (Batson, Ahmad, and Tsang 2002, 429). Additionally, a person motivated by collectivism aims at "increasing the welfare of a group" (Batson 1994, 605). In this thesis, helping an individual or a group will not be further distinguished. Instead, a more generic approach that is similar to Lewis (2021, 6319) is used. On one side, there are self-serving motives, encompassing all motives that aim at getting personal benefits through helping. On the opposing side are other-serving motives in which an individual acts to increase others' welfare, independent of whether the person is acting to serve an individual or a group. Similarly, principlism with the "ultimate goal of upholding some moral principle" (Batson 1994, 608) will not be discussed separately. The reason is that many of the motives identified are build on moral principles or norms anyway and it is unclear whether own welfare increase or norm adherence is the ultimate goal (Batson 1994, 608). Figure 2 (Figure A4) shows a depiction of motives identified and discussed.

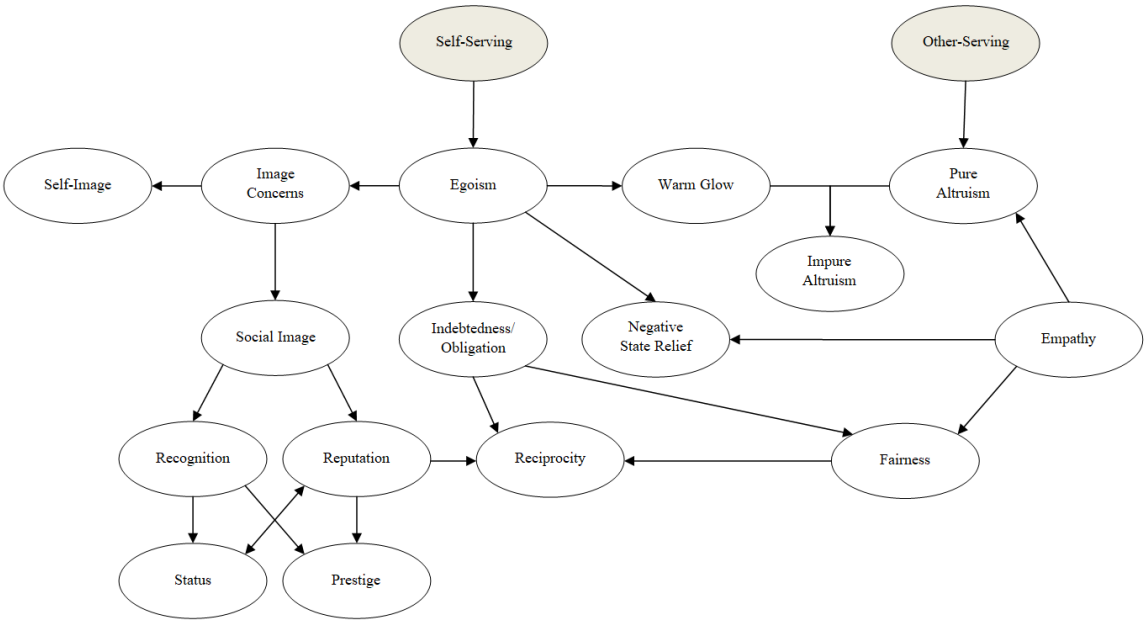

Figure 2: Overview of motives (own depiction)

5. Other-Serving Motives

When thinking about prosocial behavior, the first motives that come to mind are other-serving motives. Other-serving means that the ultimate goal is to increase the welfare of another person or group, which is often known as altruism (Batson, Ahmad, and Tsang 2002, 429). In the following, corresponding motives are discussed, their economic background is explained and approaches to test for them are investigated.

5.1. Pure Altruism

There is not a single definition for altruism across disciplines. Instead, several slightly different definitions exist (see Pfattheicher et al. (2022, 126) for an overview). Altruism is often described as a type of helping behavior itself and thereby as a subset of prosocial behaviors, but when looking at motives of prosocial behavior, altruism should be considered a motivational concept (Batson and Powell 2003, 463; Batson 2010, 16). In this thesis, altruism is defined as "a motivational stage with the ultimate goal of increasing another's welfare" (Batson 2011, 20). This definition is most often used in studies on prosocial behavior, in particular by Batson (e.g., Batson 2010, 16; Batson and Shaw 1991, 108; Batson and Powell 2003, 463). It makes three relevant statements: (1) altruism is a goal-oriented motivation, (2) the others welfare must be the ultimate and not just an instrumental goal and (3) the only difference to egoism is whose welfare is increased (Batson 2011, 20–22). Behavior motivated by altruism can, but doesn't have to lead to disadvantages for the one helping (Batson 2011, 23; Cambridge Dictionary 2023a). If altruistic behavior brings self-benefits, it has to be clear that they are not the ultimate goal and were not intended beforehand (see Figure A5) (Batson 2011, 23; Batson and Shaw 1991, 109; Batson and Powell 2003, 474).

Altruism can be pure or impure. Pure altruism is the type that is relevant and discussed in this subchapter, as the person, when acting prosocial, doesn't care for any personal benefit, while self-benefits matter for a person motivated by impure altruism (Andreoni 1990, 465). The differentiation becomes clearer when looking at the corresponding utility functions. A person motivated by pure altruism has the utility function $U_i = U_i(x_i, G)$, with x_i being the "consumption of the private good" and $G = \sum_{i=1}^{n} g_i$ the total amount of the public good (Andreoni 1988, 59). It shows that the person does care about the total amount provided to the public good, but not about how much he or she contributes individually, as the utility doesn't depend on g_i, the "gift to the public good" of each individual (Andreoni 1990, 465). Here lies the main difference between purely and impurely altruistically motivated people. For an impurely altruistically motivated person, the utility depends on g_i: $U_i = U_i(x_i, G, g_i)$ (Andreoni 1990, 465). The person, by definition, additionally gains from the act of giving. Further details on impure altruism can be found in chapter 7.1.

Researchers are divided over the question whether prosocial behavior can be motivated by pure altruism. While some, in particular Batson and colleagues, show proof for purely altruistically motivated prosocial behavior, there are others that disagree (e.g., Cialdini et al.

1997, 481; Andreoni 1988, 57, 71; Palfrey and Prisbrey 1997, 842; Maner et al. 2002, 1601). Due to these discrepancies, the question whether pure altruism really exists is often considered unanswered (Maner and Gailliot 2007, 347). Exploring altruism is particularly challenging, because in most situations there are many confounding variables (e.g., social concerns) that distort results and experiments have to focus on their elimination (Edele, Dziobek, and Keller 2013, 96; Andreoni, Harbaugh, and Vesterlund 2010, 6). This is why economic games play an important role in studying altruism (Edele, Dziobek, and Keller 2013, 96), in particular the DG. In addition, small changes in an economic game, e.g., changing the recipient from another subject to a charity can lead to different results, in particular concerning altruistic motivations (Harrison and Johnson 2006, 196).

The approach used to test for pure altruism is based on the utility function and its' implications. Since the utility of a pure altruist only depends on the total amount of the public good provided and not the individual contribution, a pure altruist doesn't care who gives and complete crowding out of donations by contributions of others is expected (Andreoni 1988, 58; Clotfelter 1997, 45). This crowding out hypothesis is most often applied to test for pure altruism. Alternatively, experimenters vary their matching rates, influencing the total amount provided, to observe if donation behavior changes. Both approaches disentangle motives of pure and impure altruism as well as warm-glow. The corresponding studies will be explained in detail in chapter 7.1 on impure altruism, but none of them finds unambiguous proof for pure altruism. Additionally, in a growing economy, a motive of pure altruism leads to less contributors to a public good, contributions only by very rich people and "average giving decreases to zero" (Andreoni 1988, 61, 62). Observations of actual public good contributions are conflicting with all these implications from a purely altruistic model, as many people choose to donate even in large economies and incomplete crowding out is observed, which is why a purely altruistic model is discarded (Andreoni 1988, 57, 58). Still, there is evidence for purely altruistic behavior, e.g., in neural responses to giving in a DG (Harbaugh, Mayr, and Burghart 2007, 1622). For blood donations, no purely altruistic motive is confirmed (Ferguson and Lawrence 2016, 155; Tscheulin and Lindenmeier 2005, 171), but results are at least partly self-reported and not based on economic games.

If pure altruism actually exists, the follow-up question is what makes people act purely altruistic. In the literature, the most common motivators for altruistic behavior are empathy and fairness (Klimecki et al. 2016, 1). These underlying motives will be discussed next.

5.1.1. Empathy-Altruism Hypothesis

Empathy or empathetic concern is defined as "an other-oriented emotional response elicited by and congruent with the perceived welfare of someone in need" and encompasses both sympathy and compassion (Batson 2010, 20). It is other-oriented because it includes "shar[ing] the feelings of others" (Artinger et al. 2014, 2). Many studies directly look at the connection between empathetic concern and prosocial behavior. Their findings are inconsistent. While some find a positive correlation between empathic concern and giving (e.g., Andreoni, Koessler, and Serra-Garcia 2018, 50; Klimecki et al. 2016, 3; Edele, Dziobek, and Keller 2013, 99), others don't (e.g., Artinger et al. 2014, 5). Still, finding a connection between empathy and prosocial behavior alone is not sufficient proof for an altruistic motive. Instead the underlying ultimate goal has to be in line with pure altruism. To make sure of this, the connection of empathy and pure altruism is studied with the so called empathy-altruism (EA) hypothesis, most extensively by C. Daniel Batson (e.g., Batson and Shaw 1991; Batson and Powell 2003; Batson 2010; 1987). According to the EA-hypothesis, taking the perspective of another person leads to empathy for their situation, which causes altruistic motivation to reduce their need and then results in prosocial acts (Batson and Shaw 1991, 112–14), see path 3 in Figure 3.

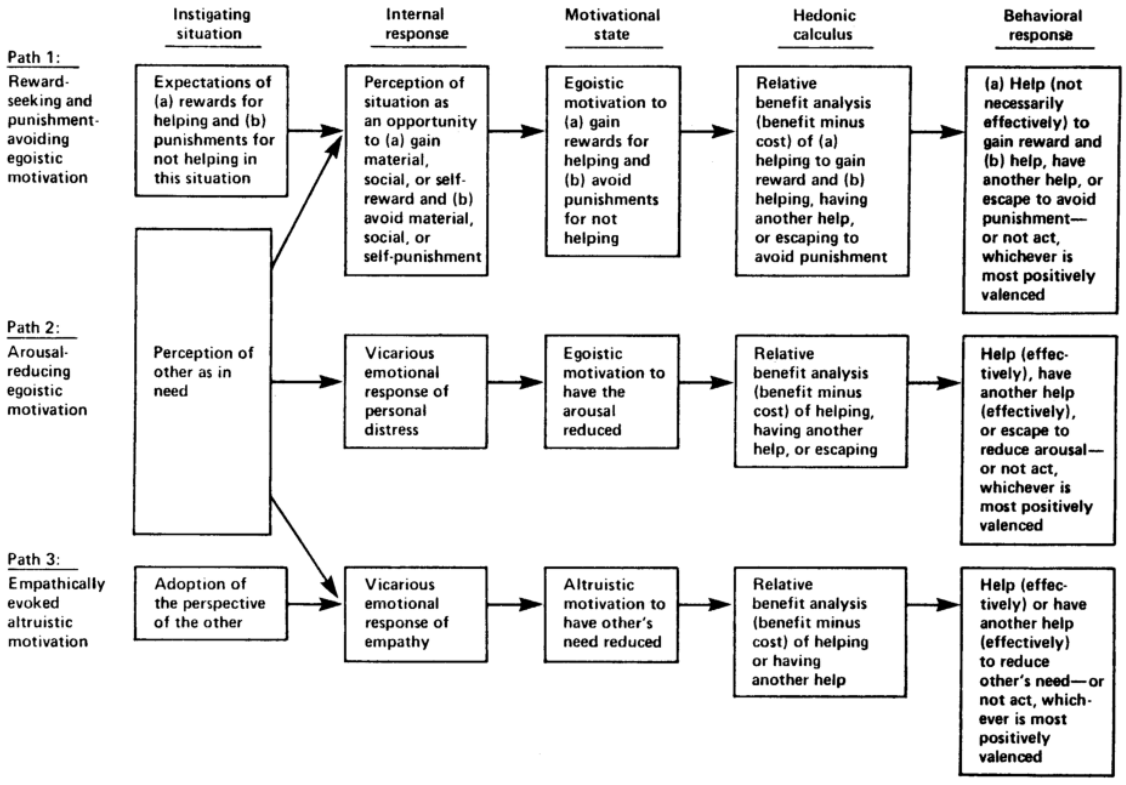

Figure 3: Egoistic and altruistic paths (Batson 1987, 84)

For empathetic concern to actually trigger pure altruistic behavior, it is of most importance that the ultimate goal is to increase the welfare of another person (Batson and Powell 2003, 474), even if there are unintended benefits for the self. Maner and Gailliot (2007, 348) find two difficulties: (1) negative affect and (2) oneness. Firstly, people might not only feel empathy when taking others' perspective, but other "self-focused emotional states" such as personal distress and sadness possibly arise (Maner and Gailliot 2007, 348). This state of negative affect can lead to prosocial actions that take place to relieve the self rather than to help others. It is therefore important that the developed empathy is "associated with an affective focus on the person who is suffering (rather than one self)" (Maner and Gailliot 2007, 348). Secondly, a "sense of shared self", called oneness, might develop through empathy, so that helping another is then also helping oneself, which questions a purely altruistic motive (Maner and Gailliot 2007, 348). To address these concerns, Batson's (1987, 84) model in Figure 3 is used. In addition to the EA path, in which purely altruistic motivation is evoked by empathy, there are two paths for egoistic motives. The first egoistic path includes all motives related to "gaining rewards and avoiding punishments" (Batson and Shaw 1991, 110), e.g., image concerns discussed later. The second egoistic path is more closely related to the altruistic path, as it is concerned with "reducing aversive arousal" (Batson and Shaw 1991, 110). As Figure 3 shows, this arousal stems from the fact that someone else is perceived to be in need and personal distress arises. The main difference between path 2 and the altruistic path is that while a person affected by personal distress acts egoistic to ultimately relieve itself from these feelings, one motivated by altruism feels empathy with the person and is ultimately not motivated to be relieved personally, but to help the other (Batson 1987, 84). The first concern "negative affect" relates exactly to this distinction and these paths can be disentangled experimentally to detect a purely altruistic motive. The idea behind the experiment is that "because empathic arousal is a result of witnessing the victim's suffering, either terminating this suffering by helping or terminating exposure to it by escaping can serve to reduce the arousal" (Batson and Shaw 1991, 115). While escaping is the egoistic alternative, a purely altruistic person has to help to reduce empathy (Batson and Shaw 1991, 115). Therefore, the experiment varies in empathy level and in how easy it is to escape. Many experiments with this setup were conducted, (e.g., Batson et al. 1981), and all led to results in line with the EA-hypothesis (Batson and Shaw 1991, 115). The authors conclude that there is a pure altruism motive, but acknowledge the presence of egoistic motives as well. In further publications (e.g., Batson et al. 1988), different egoistic alternatives to the EA-hypothesis are experimentally investi-

gated and discarded. Summaries of such experiments exist and find that egoistic alternatives are rarely supported (e.g., by Batson and Shaw 1991, 114–19; Batson and Powell 2003, 474–75). Still, Cialdini et al. (1987, 754) find proof for the Negative State Relief (NSR) model, an egoistic alternative to the EA-hypothesis discussed in chapter 7.4.

Cialdini and colleagues additionally find counter arguments to the EA-hypothesis when considering oneness. By definition, people take the perspective of others to feel empathetic concern for them. Cialdini et al. (1997, 483) argue that through perspective taking a feeling of "oneness" with the other person arises, in which the identity of oneself and the other are perceived as one. Helping the other is then no longer altruistic as it is regarded as helping oneself. Experimental evidence shows that empathy is only relevant, if oneness is not accounted for, because when controlling for oneness, empathetic concern is no longer a predictor of "willingness to help" (Cialdini et al. 1997, 486), strengthening doubts regarding the EA-hypothesis. If both oneness and negative affect are controlled for, Maner et al. (2002, 1601) find that empathic concern no longer predicts helping, discarding a purely altruistic motive. Figure A6 shows a structural equation model developed with the results. The fit of the model doesn't improve with a direct path from empathic concern to helping, while the paths from oneness and negative affect improve the models' fit, rejecting the EA-hypothesis.

These inconsistent findings show that there must be more to it than just looking at the direct connection of empathy, altruism and prosocial acts. An example is that purely altruistic prosocial behavior caused by empathy is more likely when helping someone closely related to (Maner and Gailliot 2007, 355). Maner and Gailliot (2007, 355) find that oneness, but not empathy, predicts the willingness to help strangers. They argue that while pure altruism exists, it is unlikely for strangers, instead egoism plays a role. Furthermore, an EA link is strongly dependent on the situation, e.g., the type of prosocial behavior (Einolf 2008, 1267).

6. Mixed Motives

The second motive often associated with pure altruism is fairness. Still, fairness can't unambiguously be categorized as self- or other-serving, which is why it is described in this section on mixed motives.

6.1. Fairness/Inequity Aversion

Fairness is defined as "self-centered inequity aversion" (Fehr and Schmidt 1999, 819), which is a "conditional form of altruism and/or envy" and if a person is motivated by inequity aversion, its utility increases if outcomes become more equitable (Fehr and Schmidt 2006, 620). This means that an individual will act either generous or spiteful towards others, depending on the payoff difference to them. Therefore, to be motivated for prosocial behaviors by inequity aversion, the beneficent has to be worse off. A utility function for inequity aversion $U_i(x) = x_i - \frac{\alpha_i}{N-1} \sum_{j \neq i} \max\{x_j - x_i, 0\} - \frac{\beta_i}{N-1} \sum_{j \neq i} \max\{x_i - x_j, 0\}$, with $0 \leq \beta_i \leq \alpha_i$ and $\beta_i \leq 1$ (Fehr and Schmidt 1999, 822), models envy and compassion for others. Such concerns for fairness can explain why people act prosocial (Fehr and Schmidt 1999, 819). The more altruistic people are and the more they care about others, the higher is β_i and subsequently their utility suffers more, the higher the payoff difference $(x_i - x_j)$ gets, which in turn leads them to act generous. In this case, the compassion part of the utility function is of importance and as compassion is a part of empathy (Batson 2010, 20), fairness can be considered an other-serving motive. Therefore, pure altruism can be explained by fairness. Still, the categorization as other-serving is not unambiguous. Brosnan and de Waal (2014, 1) find that fairness "aims not at equality for its own sake but for the sake of continued cooperation" which categorizes the fairness motive as self-serving. People are, e.g., motivated by fairness concerns because they feel obligated (E. Hoffman et al. 1994, 347–48), e.g., by future benefits, morals or norms. Fairness is the motivation underlying reciprocity (Seinen and Schram 2006, 582). If a person helped in the past, helping this person can be an obligation because of fairness concerns (Rabin 1993, 1281). As "fairness dictates" being prosocial to this individual (Rabin 1993, 1281), fairness and the thereby caused reciprocity is in this case self-serving, as the person acts due to the obligation to adhere to social norms and not because of purely altruistic reasons. Reciprocity is looked at in chapter 7.3. Furthermore, acting fair and thereby prosocial to adhere to norms and to be perceived as fair can be motivated diversely, e.g. by self- or social image concerns (e.g., Andreoni and Bernheim 2009). Overall, fairness is therefore considered a mixed motive, as paths for both altruistically as well as egoistically motivated behavior exist.

In the literature, fairness as a motive receives both, support and rejection. Hoffman et al. (1994, 362–63) observe significantly less giving in double-blinded DG, which, compared to traditional DGs, maximize anonymity also in front of the experimenter. This is consid-

ered as doubt for a fairness concern motive and at the same time a sign for social concerns. These results are criticized by Eckel and Grossman (1996, 181, 183–84) who state that even dictators motivated by altruism and fairness need some information on how deserving recipients are. Changing the recipient from another subject to a charity, they observe significantly higher donations, showing that altruism through fairness considerations motivates dictators to give. Contrarily, Andreoni and Bernheim (2009, 1608) find that audience has a strong influence on giving that can't be explained by fairness. Comparing public and private treatments, they show that subjects only want to be perceived as fair, so they are motivated by social image concerns and not by fairness in an altruistic sense, but by compliance to fairness norms. Similarly, Dana et al. (2006, 199; 2007, 78) disagree with an altruistic fairness motive, as selfish behavior is observed once decisions are private or self-deception is possible. More detail on these studies is provided in chapters 7.2.1 and 7.2.2. Overall, the literature raises doubt on an altruistic fairness motive. In particular, if it is tested against other motivations. Findings rather support adherence to fairness norms that play an important role in prosocial behavior. Still, individuals don't adhere to their own normative standards of fairness but act significantly more selfishly, so "intrinsic motives for compliance with an individual normative standard of fairness are not sufficiently strong" (Mekvabishvili et al. 2023, 219).

7. Self-Serving Motives

Opposite other-serving are self-serving motives. If a motive is categorized as self-serving, the prosocial act is primarily done to increase the benefactor's own utility and welfare. This can, e.g., happen through avoidance of guilt, positive feelings when giving or by receiving recognition for giving. Batson et al. (2002, 433, 435) summarize all of these motives under the term egoism. The following subchapters differentiate the egoistic motives.

7.1. Impure Altruism, Warm Glow and Joy of Giving

The term altruism already appeared in the chapter on other-serving motives, but as explained in chapter 5.1 different forms of altruism exist that largely differ in their ultimate goal. The form of altruism that is discussed in this chapter is impure altruism. In the literature, impure altruism is often used in combination with the terms "joy of giving" and "warm glow". This chapter gives an overview of these concepts and their differentiation.

Individuals are motivated to give by a so called "warm glow", if they give to evoke positive feelings in themselves (Andreoni 1989, 1448–49). Since people act to achieve some private gain, this motive is distinct from pure altruism and instead considered an egoistic motive (Andreoni 1989, 1449). An alternative term often used is joy of giving (e.g., by Ribar and Wilhelm 2002, 426). Contrarily, a person motivated by impure altruism is not purely egoistic but cares about both, the private gift (warm glow) and the public wellbeing, which differentiates impure altruism from warm glow (Andreoni 1990, 465; Konow 2010, 284). Konow (2010, 279) describes impure altruism as "a combination of pure altruism and warm glow". Figure A7 shows the connection of these motives which can also be seen in the utility functions by Andreoni (1990, 465). As described in chapter 5.1, he is looking at a public good with a total amount of $G = \sum_{i=1}^{n} g_i$, with g_i being the "gift to the public good" of individual i (Andreoni 1990, 465). An impurely altruistic motivated individual has the utility function $U_i = U_i(x_i, G, g_i)$ which includes both G and g_i, because the person cares for the total amount of the public good as well as the individually contributed amount. The following utility function arises for someone motivated solely by the warm glow: $U_i = U_i(x_i, g_i)$. The overall amount provided to the public good G is not important for an egoistic individual as only the personally contributed amount rewards the donor with a warm glow. Figure 4 shows the connection of all three motives including their utility functions. Strictly speaking, impure altruism can therefore be considered a mixed and not a purely self-serving motive. But as experiments and approaches mostly discuss both motives or don't differentiate clearly, impure altruism will still be discussed in this chapter.

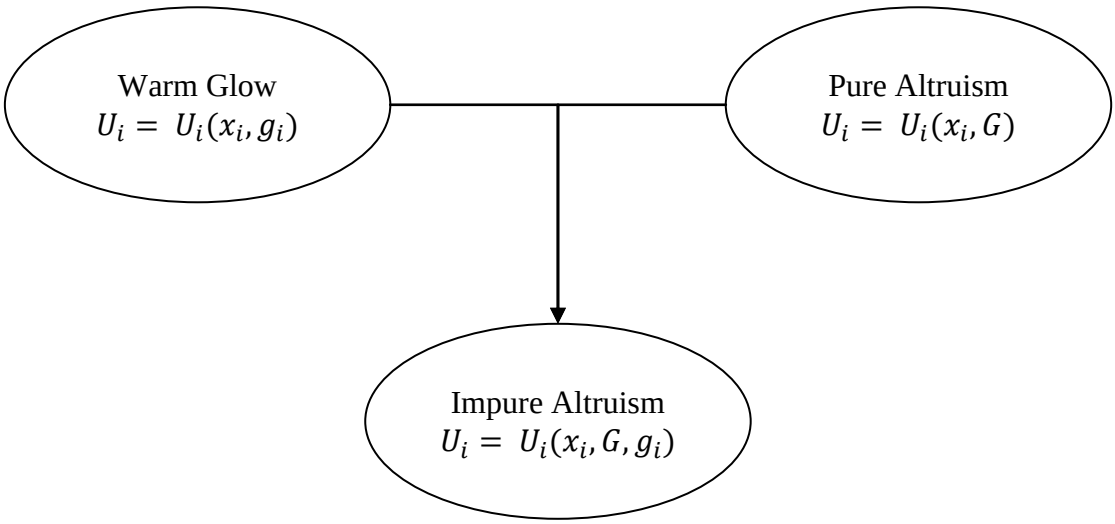

Figure 4: Connection of (im)pure altruism and warm glow and the corresponding utility functions (own depiction)

How can warm glow be experimentally tested for? There are several studies that test for warm glow or impure altruism, mainly using approaches with crowding out opportunities. Crumpler and Grossman (2008, 1012) use the utility functions by Andreoni (1990, 465) to explain expected crowding out behavior for the different motives. A pure altruist's utility doesn't depend on the individual's contribution g_i, but only the total amount G. Others' contributions are therefore crowding out individual contributions completely, holding G constant and allowing the person to increase its utility by being able to invest more in the private good x_i. For individuals motivated by warm glow as well as impure altruism, it is important that they are the ones giving, as their utility is directly dependent on the individual contribution g_i, so crowding out will be incomplete. Table 1 summarizes expectations.

motivation for giving	**crowding out behavior**
pure altruism	full crowding out
impure altruism	incomplete crowding out
warm glow	incomplete to zero crowding out

Table 1: Motivations for giving and corresponding crowding out behavior (adapted from Eckel, Grossman and Johnston 2005, 1547)

To test for warm glow and altruism motives, (modified) DGs and public goods games (PGG) are used in the laboratory and the field. Two main approaches are applied: crowding out and matching. Overall, most results are considered evidence for warm glow, but there are also researchers that instead show effects that speak for a motive of altruism. Table A1 provides an overview of several studies on (im)pure altruism and warm glow motives, approaches used and results. They are explained in more detail below.

Crumpler and Grossman (2008) directly test for the warm glow motive using the crowding out approach in reverse. A charity receives a fixed amount of money, independent from subjects' decisions. Participants can personally donate to the charity, thereby decreasing the amount given by the experimenter, which 56.9 % of subjects do. On average, they donate 20.8 % of their endowment (see Figure A8). Subjects therefore incompletely crowd out experimenters donations because they seem to care for being the benefactors, showing significant warm glow motivation (Crumpler and Grossman 2008, 1018). Andreoni (1993, 1319–22) uses PGGs with the crowding out approach. There is a no tax treatment where contributions to the public good start from zero, while the tax treatment has a minimum contribution of two tokens. For a pure altruist, this mandatory donation (tax) should lead to a crowding out of the voluntary contribution by 2 tokens, so that the total amount given

doesn't differ between treatments. While Andreoni (1993, 1326) doesn't test for a motive directly, the incomplete crowding out that is observed, is in line with a warm glow motive. To directly disentangle pure and impure altruism, Bolton and Katok (1998, 320) use a similar approach, but implement a DG with different initial allocations for dictator and recipient (($15,$5) or ($18,$2)). If the dictator is a pure altruist and therefore only considers the final split, these differences should lead to a complete crowding out of $3 in the first treatment. Subjects in the first treatment give significantly less, but crowding out remains incomplete which is interpreted as evidence for impure altruism (Bolton and Katok 1998, 325). Very similarly, Konow (2010) uses crowding out in several versions of a DG. The subsidy experiment directly tests for warm glow and differentiates it from altruism with warm-glow as the point prediction (Konow 2010, 282). The dictator receives an endowment of $10, while the recipient receives a fixed amount of $4 in the subsidiary and $0 in the standard treatment. Crowding out in the subsidy treatment is a sign for altruism, as the recipient has a higher fixed endowment and dictators motivated by altruism (both pure and impure) care about the recipients outcome (at least partly) (Konow 2010, 284). In contrast, a dictator motivated by warm glow doesn't care about the subsidy, but only about giving and will decide the same in both treatments. The results show significant differences across treatments, but not in all tests conducted. Crowding out exists, but is described as "partial" and as expected for altruism (Konow 2010, 288). Konow (2010, 282) next uses a different approach called matching. Subjects can decide to donate to one of two charities. Differences are measured between the baseline and the treatment condition in which experimenters triple donations to one specific charity. No change in the donation percentage for the matched charity is considered a sign for warm glow as only the own contribution matters, while an altruistic motive leads to a shift towards the matched charity, with larger effects for pure altruism (Konow 2010, 284–85). As there are 24% more donors to the matched charity in the treatment condition, the warm glow motive is discarded and an altruistic motive is expected (Konow 2010, 288–89). In addition, this study reports feelings of subjects, to determine, if a warm glow feeling is present. More generous donations don't always lead to positive feelings, which is another counterargument for the warm glow motive (Konow 2010, 290) and in line with further studies on mood changes of donors (e.g., Bekkers et al. 2019, 13).

Next to the laboratory experiments discussed, field studies are available as well. Tonin and Vlassopoulos (2010) separate warm glow from pure altruism using a real effort task. In a

baseline treatment subjects' effort only affects their own payoff, while effort in treatment B in addition determines their donation to charity, activating both warm glow and altruism motives. Additionally, a third treatment (A) has a fixed donation to charity by the experimenter which is crowded out through the subjects' charitable contributions. As the donation to charity is fixed, A only activates the warm glow motive (Tonin and Vlassopoulos 2010, 1088). Subjects are significantly more productive in A than in baseline, which is considered evidence for a warm glow motive and as there is no significant difference between A and B, pure altruism is not relevant (Tonin and Vlassopoulos 2010, 1088). Lastly, Null (2011) uses the matching approach in the field. Subjects divide an endowment between three charities. First, matching rates are the same for all charities, in later treatments, lower and higher matching rates are randomly assigned to one charity each. Charities with a lower matching rate can produce less public good as they receives less, which is why a person motivated by pure altruism should only donate to the charity with the highest matching rate to be socially efficient (Null 2011, 457). For a person motivated by warm glow "the marginal utility of a gift to any single charity is decreasing in the size of the gift" (Null 2011, 457) which leads to many smaller donations to different charities and no substitution in donations once matching rates change. As perfect substitution rarely occurs and people choose to forgo information on matching rates if it is costly, warm glow is considered the motive for giving (Null 2011, 460–61, 464).

The overview in Table A1 shows that incomplete crowding out is considered evidence for both impure altruism and warm glow, even though these motives are not the same and the utility function of warm-glow points to zero crowding out. Zero crowding out is not observed at all and apart from Konow (2010) and Eckel et al. (2005) there is no differentiation made between impure altruism and warm glow. Crumpler and Grossman (2008, 1012) argue that "[a]ny test can only confirm the existence of warm glow", as impure altruism has the warm glow component, so in both cases the warm glow leads to giving. Contrarily, Konow (2010, 282) uses warm glow as the point prediction and tests for any signs of altruism, thereby being able to differentiate. The studies above show both, proof and doubt of warm glow, pure and impure altruism motives, but they look at one type of prosocial behavior, namely monetary donations. For other types, the motives have to be examined separately. Brown et al. (2019, 1455, 1462) look at "differential warm glow depending on the form of the donation" and show that volunteering "produce[s] greater warm glow than gifts of money". For blood donation proof for a warm-glow motive is found as well (Ferguson

and Lawrence 2016, 151). Altruistically (pure and impure) motivated volunteering is found by Carpenter and Myers (2010, 917) when comparing DG donations of volunteers with non-volunteers. Significant differences lead to the conclusion that altruism motivates volunteering and spending time on activities that are not visible to the public.

7.2. Image Motivation

Image motivation, also known as signaling motivation is another important self-serving motive for prosocial behavior (Ariely, Bracha, and Meier 2009, 544). Acting prosocially is commonly perceived positively, people are considered generous or simply "good" and the desire to signal to others or the self that one is good motivates people to behave prosocially with the goal of gaining social or self-approval (Ariely, Bracha, and Meier 2009, 544). As not the welfare of others, but personal benefits are the ultimate goal, these are egoistic motivations. In the following both self- and social image motivation are discussed.

7.2.1. Social Image

In this chapter, the goal of acting prosocial is to gain social approval by being perceived positively by others. As people with this motive are concerned by receiving a negative social image, it is called social image (concern). In addition to social image, the closely related motives prestige, status, recognition and reputation are discussed and disentangled.

Social image or reputational motivation is described as "an individual's tendency to be motivated partly by others' perceptions" (Ariely, Bracha, and Meier 2009, 544). By observing the behavior of an individual, observers build an opinion on this individual, which leads to a social image of the observed, can bring costs or benefits to the observed, and thereby directly influences this individual's utility (Bénabou and Tirole 2006, 1652–53; Ariely, Bracha, and Meier 2009, 544). People therefore act prosocially due to "social pressure and norms" (Bénabou and Tirole 2006, 1653) because, if they don't, their image suffers. By acting prosocial and in line with social norms in public, people signal to observers that they are good and build a positive social image. It follows that one has to compare peoples' behavior in public and in private to show social image motivation (Ariely, Bracha, and Meier 2009, 546). One can expect increased prosocial behavior in a public setting if social image is the motive. Bénabou and Tirole (2006, 1654) additionally find that "extrinsic incentives spoil[…] the reputational value of good deeds, creating doubt about the extent to which they were performed for the incentives rather than for them-

selves". That's why crowding out of reputational motivation is expected, once extrinsic rewards are present (Bénabou and Tirole 2006, 1654).

The overview in Table A2 shows that the most commonly used approach to test for a social image concern motive, is to compare behavior in public and private. Ariely et al. (2009, 547–52) use a real-effort task linked to a charitable donation in a public and private treatment. In addition, a monetary incentive is introduced in some treatments to test for crowding out of image motivation. To rule out that people just want to show more effort in public, independent of the image it conveys, two different charities (perceived as "good" or "bad") are beneficiaries. Figure 5 displays the effort exerted in all treatments.

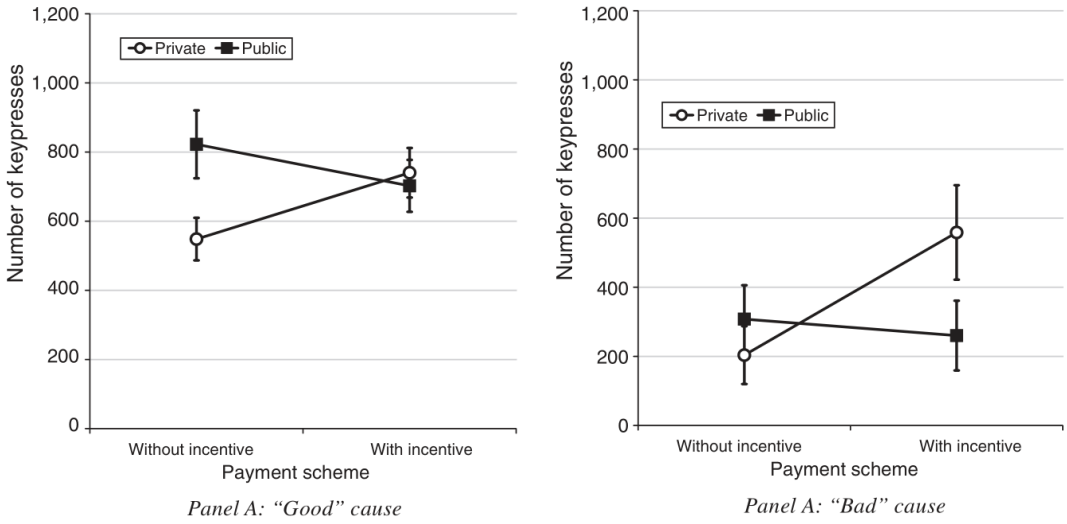

Figure 5: Effect of public vs. private, incentive and good vs. bad cause (Ariely, Bracha and Meier 2009, 549-50)

Looking at the "good" charity, people show significantly more effort in public, as long as there are no monetary incentives. Once monetary incentives are introduced, participants' effort only increases in private, showing crowding out of social image motivation. Ariely et al. (2009, 546–47) reason that personal benefits make others belief that the prosocial action was undertaken for this benefit only, which makes their signal less positive. Therefore, people step back from increasing their effort in public, while they appreciate the monetary benefit in private. Contrary, when looking at the "bad" cause, there is no significant change in effort between public and private without incentives. Results show that social image concerns are indeed the reason for increased effort and thereby prosocial behavior (Ariely, Bracha, and Meier 2009, 554). Further research finds that increased prosocial behavior in a public setting is only observed if the recipient is a charity and not a public good (Soetevent 2005, 2318). Private and public conditions with an exit option are used in

an approach by Dana et al. (2006) in which social image concerns arise through judgment of the recipient. Subjects decide on an allocation in a DG and are then presented with an exit option. When exiting, recipients never learn about the DG. If subjects don't exit, recipients receive payoff but only learn about the game in the standard, not the private condition. Exiting is only a plausible strategy if the dictator cares about the recipient's judgment, as the exit outcome is dominated (Dana, Cain, and Dawes 2006, 195). As recipients don't know about the game, they can't blame the dictator for a low outcome in the private condition, leading to fewer exits, as dictators' social image is unaffected. Exit rates significantly differ (43% vs. 4%) which speaks for social image concerns driven by recipients expectations that are caused by fairness norms (Dana, Cain, and Dawes 2006, 193, 199). Fairness norms are also the base for building a social image in Andreoni and Bernheim (2009, 1608). The approach uses varying transparency in a non-anonymous DG. If probability $p > 0$, recipients don't know whether the dictator or nature made the allocation. Nature gives a fixed amount x_o and dictators are asked to allocate \$20 for several p. Results in Figure 6 show that the majority of subjects chooses a fair outcome when they can be made responsible for the allocation ($p = 0$), thereby adhering to fairness norms. The decrease in equal splits and the significant increase of splits using $x = x_0$ for increasing p, speaks for social image concerns, as people can hide selfish actions behind the decision of nature by choosing $x = x_0$ (Andreoni and Bernheim 2009, 1616, 1622). Dictators' social images are not affected, as decisions can't be traced back directly. Further evidence for social-signaling is found in a similar experiment by Grossman (2015, 26). Social image concerns are also found for volunteering. Subjects are significant more likely to continue volunteering if other subjects are present, but their unobservable productivity is not affected by audience (Linardi and McConnell 2011, 452). Similarly, social image concerns are associated with observable volunteer behavior and extrinsic motivation crowds out image motivation for real-world volunteers (Carpenter and Myers 2010, 919).

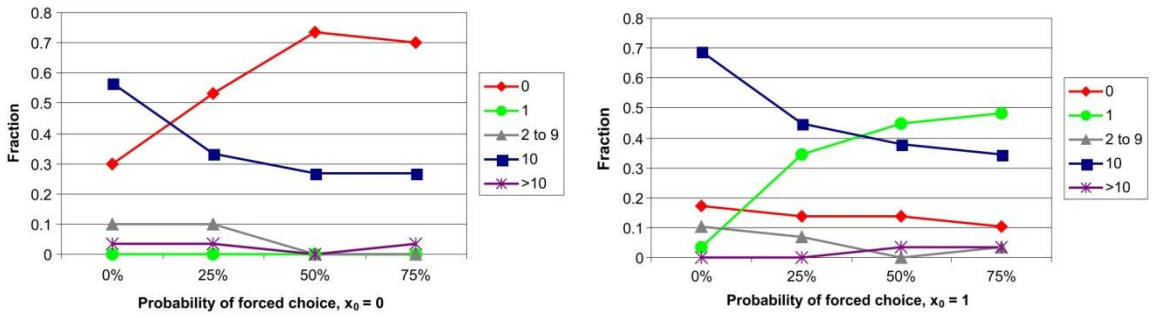

Figure 6: Distribution of outcomes for $x_0 = 0$ and $x_0 = 1$ (Andreoni and Bernheim 2009, 1622)

Other studies look at motives of recognition, status, prestige and reputation. Can these motives be differentiated from social image and each other? Some researchers use different definitions or terms interchangeably, e.g., Karlan and McConnell (2014), making it difficult to truly distinguish, but most often the following definitions are used. Recognition is defined as "a public expression of appreciation given by a group to individuals who undertake desired behaviors" (Fisher and Ackerman 1998, 264). Therefore, for a prosocial act to be recognized, it doesn't only have to be executed publically but some awarding has to take place. Fisher and Ackerman (1998, 264) further explain that "recognition publicly communicates the group's respect for those who support the group, and thereby raises the recipient's status and prestige". Prestige and status thereby both develop through being recognized. Prestige is defined as the "respect and admiration given to someone or something, usually because of a reputation for high quality, success, or social influence" (Cambridge Dictionary 2023b). These two definitions show that prestige can stem from recognition or reputation. Status and prestige are closely related, but in contrast to prestige, status is often associated with a position or rank in society or a group (Heffetz and Frank 2011, 72; Zahavi 1995, 2). Status can be achieved by comparison to others and their behavior and brings advantages (Kataria and Regner 2015, 494–95). Reputation is always based on the opinion that others have of someone (Cambridge Dictionary 2023c) as well as on past behavior and can be seen as a prediction of future behavior (Jensen and Lee 2019). Jensen and Lee (2019) describe reputation and status as interdependent concepts that both influence each other. As all concepts are very closely related, but not completely the same, they will be looked at separately, to see if observations and study methods differ.

Tests for the recognition motive include a recognition treatment in which prosocial behavior is recognized, e.g., by announcing volunteers publically or by giving out gifts, and a control condition in which it is not (e.g., Winterich et al. 2013, 765; Fisher and Ackerman 1998, 264–65). Recognition increases giving probability (Karlan and McConnell 2014, 405) and, if need is high and contributions are more socially desirable, also volunteering hours, which is in line with a social norm reasoning (Fisher and Ackerman 1998, 262).

Prestige is a consequence from public recognition (Harbaugh 1998a, 277). The "prestige benefit" of giving is described as a benefit "the donor only gets when other people know how much he has given" (Harbaugh 1998a, 277). The utility function $U = U(x, p, d)$, includes prestige motivation p as well as warm glow d, with x being "the private good" (Harbaugh 1998b, 273). Doing some rearrangements and considering that for the prestige

motive to set in, the prosocial act has to be awarded, Harbaugh's (1998b, 274) utility function changes to $U = U(w, p(r), d)$, with income w and $p(r)$ being the function used to report individual donations. Donations can be reported with exact amounts or in categories. Awards can, but don't need to have economic value, common examples are listings of donors names and plaques or gifts for generous donors (Andreoni and Petrie 2004, 1608; Bénabou and Tirole 2006, 1653; Fisher and Ackerman 1998, 264). Harbaugh (1998a; 1998b) uses data from actual donations, with recognition being awarded by listing the name in an alumni magazine. When using reporting categories, donations increase about 15 % compared to exact reporting and donations accumulate at the lower category bound (Harbaugh 1998b, 270, 279) which speaks for a prestige motive, see Figure 7. Donation differences between linear and category reporting are also used to test for a prestige motive experimentally. As a higher category leads to more prestige, those motivated by prestige should donate amounts at or closely above category borders (Harbaugh 1998a, 278).

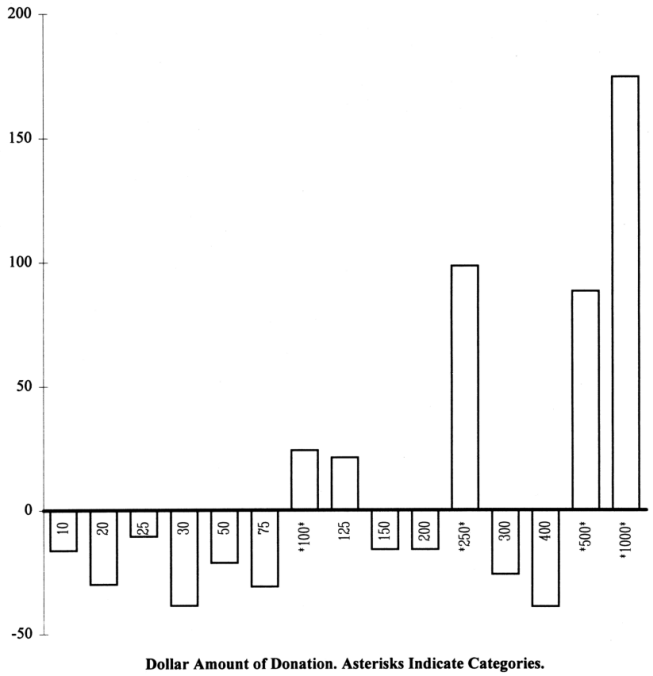

Figure 7: "Percentage changes in proportion of donors bunching, after introduction of category reporting" (Harbaugh 1998b, 270)

Andreoni and Petrie (2004, 1618) conduct a lab study using a PGG and find that while the donation amount in total is barely affected by the category system, the distribution of donations changes (see Figure A9). Contributions do shift "to the lower end of […] the two categories", even significantly so for the higher category and more subjects make donations in the higher category, compared to exact reporting (Andreoni and Petrie 2004, 1618–

19). Still, as not all contributions lie at the lower end of a category, prestige can't be the motive for everyone (Andreoni and Petrie 2004, 1619). In addition, Figure A10 shows that including both, identification and information, significantly increases giving. Identification is essential for donors that are motivated by prestige (Andreoni and Petrie 2004, 1608). Similar observations are made when incentivizing frequent blood donations with awards. If people approach a threshold for an award, they increase their donation frequency significantly, but only if the award is given publically, providing evidence for prestige and not the award itself being the motive for donations (Lacetera and Macis 2010, 226–27). Furthermore, the frequency is additionally increased in the month before the award ceremony. Contrarily, Karlan and McConnell (2014, 406) only find evidence for a recognition motive, as more people donate money in the recognition treatment, but they don't strategically increase their donations to get to a higher giving category. Prestige is therefore not always a motive in the field.

While Lacetera and Macis (2010) use prestige and social image interchangeably, in other studies one can disentangle recognition and prestige motives from social image. For a positive social image, official recognition is not necessary. Experiments discussing social image mainly look at private versus public treatments, in which the prosocial act is observable but not manifested through an official statement as it is done for prestige and recognition. Having a prosocial act officially recognized can also lead to a negative social image, because one might be seen as egoistic, therefore recognition in many cases has to be subtle. Fittingly, Hoffman et al. (2018) look at signal-burying, explaining why donors choose to remain anonymous, in order to not appear as recognition seekers.

Similarly to Harbaugh (1998a; 1998b), Glazer and Konrad (1996, 1021) look at donations to universities and observe that most donations are at or shortly above category borders that lead to recognition. While Harbaugh (1998a; 1998b) calls the corresponding motive "prestige", Glazer and Konrad (1996) name it "status". Even though the same approach is used, Glazer and Konrad (1996, 1021) determine status as others' beliefs of a person's net income after donations which is a different motive. Status here is not directly about being considered prosocial, but by donating people want to signal to others that they are wealthy.

Status is not tradable and therefore has to be earned through actions visible to others (Heffetz and Frank 2011, 74), which is why Kataria and Regner (2015, 498) use the public versus private approach to test for status. They find that people put in significantly more

effort for charity, when observed by others. People try to appear more generous to gain higher status, which "yield[s] a positive social image" (Kataria and Regner 2015, 496, 503). Similar results are also found in Choi and Seo (2017, 28–29), where activated status motives only lead to increased prosocial intention if recognition is public, see Figure A11. In Griskevicius et al. (2010, 393–94) social status is build through prosocial reputation and prestige, but also through signaling of one's wealth. Griskevicius et al. (2010, 396–97) conduct a study with a status treatment, in which status motives are activated using a short story and private or public treatments to observe when people choose to send a "costly signal" to increase their status. Figure 8 shows that as expected by signaling theory, most people choose the prosocial (green) alternative in a public setting with activated status motives. Additionally, by varying the relative price of the green product, Griskevicius et al. (2010, 398) test for the status motive through signaling of wealth. In the control condition, green products are most attractive, if they are less expensive than the alternative, but if status motives are activated, people prefer green products if they are more expensive to signal their wealth, which is in line with a status motive (Griskevicius, Tybur, and Van den Bergh 2010, 398–99). Reputation and status are also directly correlated, as people that can gain a reputation behave more prosocial and those behaving more prosocially "receive[…] a higher status rating" (Hardy and Van Vugt 2006, 1407) (see Figure A12). The effects are even stronger, if prosocial behavior becomes more costly (Hardy and Van Vugt 2006, 1410). The main difference for status motive approaches is that showing one's wealth or ability to provide is included. Most often relative price differences are used and more prosocial behavior is expected if it is more expensive and exerted in a public setting with activated status motives.

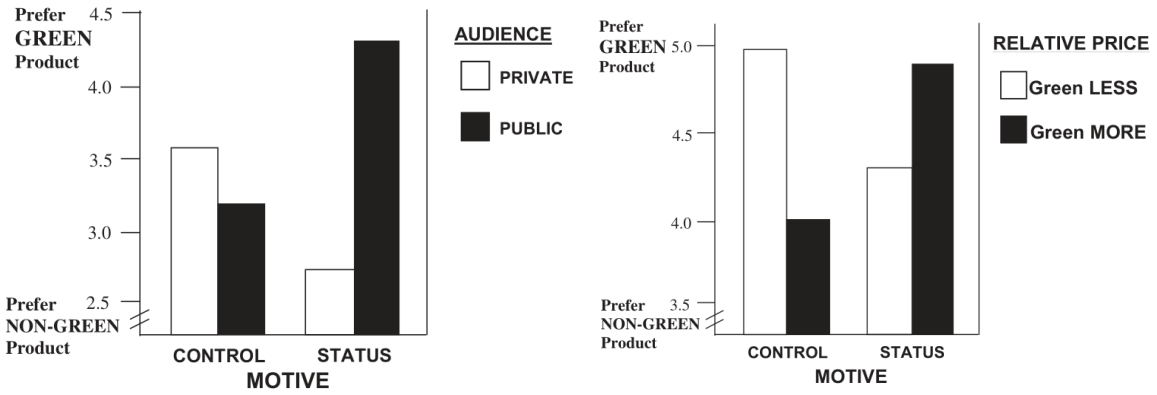

Figure 8: Preference for green products in status and control condition, with varying audience or relative price (Griskevicius et al. 2010, 397, 399)

As reputation building can be done via a public display of donation (Ferguson and Lawrence 2016, 149), reputation is also tested for with public and private treatments. An example is the field experiment by Ekström (2012) who uses pictures of watching eyes on recycling machines for the public setting. Results show no change in recyclers behavior, which is blamed on an unfitting cue and not on a lack of reputation as a motive. For a motive of reputation "norm compliant actions should increase when actors believe they are likely to be in repeated interactions" (Krupka and Croson 2016, 155) which is why repeated interactions are used to test for a reputation motive. In a field experiment, Krupka and Croson (2016) investigate whether subjects that are at a library repeatedly are more affected by normative cues in the libraries donation request. If eyespots are used to make people feel observed, those using the library repeatedly donate more, but the effect is only small (Krupka and Croson 2016, 156). Another way to look at repeated interaction, is to include a second game, e.g., trust game, after an initial PGG and test whether contributions in the last round of the PGG are maintained to retain a better reputation (Barclay 2004, 211). This approach uses the fact that reputation is based on past behavior and predicts future behavior (Jensen and Lee 2019). Subjects in Barclay (2004, 212) beforehand either don't know about the trust game (no reputation condition), know about a trust game with three other (reputation) or one self-selected player (competitive condition, status). Results show that PGG contributions increase over rounds in the reputation conditions, while contributions decrease in the no reputation condition, which provides evidence for reputation being a motive for prosocial acts (Barclay 2004, 214, 217). Additionally, there is evidence for a status motive. People are significantly more prosocial in the last round of the PGG if they compete to be ranked highest, to be chosen for the trust game (competitive condition) (Barclay 2004, 214–15). Similarly, it is possible to test for a reputation motive with a series of games by either letting a person play every PGG with different or with the same subjects (stranger vs. partner treatment) (Palfrey and Prisbrey 1996, 412). Reputation can only be built in the partner treatment, which should lead to increased giving in these PGGs, but Palfrey and Prisbrey (1996, 417–18) don't find such an effect, having to discard reputation as a motive for giving. A possible reason is, that only donations to charity positively influence reputation, donations to other subjects don't (Milinski, Semmann, and Krambeck 2002b, 882).

Looking at Table A2, there is no completely clear distinction of approaches between the motives. For the social image motive in general, a comparison of behavior in public and

private is mostly used, as no awarding is necessary. For a prestige motive, comparisons of linear and category reporting schemes are most common. As prestige emerges from recognition, the only difference in some of the literature is, that for recognition alone a category reporting system is not necessary, as comparison to a no-recognition treatment is sufficient. The approaches for status motives are not that clear. Some researchers resort to simple private versus private comparisons, sometimes paired with a condition with activated status motives. Considering the definition of status, by which a person wants to both, show willingness and ability to act prosocial, relative price differences to show signals of wealth are a relevant addition. Ultimately, for reputation specifically, most researchers focus on behavior in repeated interaction settings, which is in line with its definition. Most commonly used approaches for each of the motives can be found in Table 2.

motive	most common approach
social image	public vs. private
recognition	recognition yes/no
prestige	linear vs. category reporting
status	public vs. private, activate status motive, relative price
reputation	repeated interaction

Table 2: Summary of most commonly used approaches for social image motives (own depiction)

Motives of social and self-image are intertwined. Even though a positive social image emerges through prosocial acts in public, this can lead to a negative self-image: people don't see themselves as prosocial by behaving this way (Kataria and Regner 2015, 497). Participants underestimate their public performance, which is interpreted as self-deception used to maintain a positive self-image and "justify status-seeking behavior" (Kataria and Regner 2015, 509). Next, these self-image concerns will be investigated more closely.

7.2.2. Self Image

Instead of looking at how others consider one's behavior, self-image is concerned with how the person perceives itself. Acting prosocially can lead to a positive self-image, while foregoing an opportunity to help does the opposite. Bénabou and Tirole (2006, 1652–53, 1657) include concerns for self-respect in their theory on prosocial behavior, as people can, by being prosocial, signal to themselves that they care about others and then define themselves through their choices. Self-image concerns again underlie the social norm of giving, which is why dissonance occurs, if people choose not to comply (Bekkers and Wiepking

2011, 939). Additionally, giving can be used as moral balancing to reestablish a positive self-image after negative past behavior (Ploner and Regner 2013, 382).

Several approaches to experimentally test for self-image concerns exist and are discussed below. Most common are exit opportunities, crowding out through extrinsic motivation and inclusion of self-deception options, see Table A3 for an overview of studies. To disentangle self- from social-image concerns, it is important, that decisions are not observed by others, e.g., by using double blind DGs. Tonin and Vlassopoulos (2013) use an exit approach in a DG. The idea is related to the concept of "moral licensing": self-image concerns are satisfied by signaling in the allocation process that one is generous and has good intentions towards others, so when faced with the option to exit afterwards, subjects can do so without affecting their self-image too badly (Tonin and Vlassopoulos 2013, 20). Dictators make three allocation decisions with either the experimenters (T1) or a charity (T2, T3) as recipient. T2 and T3 differ, as the charity receives a fixed amount in T2 with the experimenters paying the remainder. After one of the decisions is selected for implementation, subjects are given an exit option. The game is very similar to the private condition of the DG by Dana et al. (2006, 198), but differs in the recipient and through increased anonymity (Tonin and Vlassopoulos 2013, 21). The fact that 24% of subjects choose the exit option speaks for audience effects, but due to anonymity and charities' unawareness of the game, "the only candidate audience [is] the person herself" (Tonin and Vlassopoulos 2013, 20, 22). Social image concerns can be discarded. Exiting is significantly more prevalent when the experimenter receives the money because of lower moral costs than when denying charitable donations which would affect the self-image more negatively (Tonin and Vlassopoulos 2013, 23). Moreover, exiting is also observed for those who give zero, in particular in T3. Self-deception plays a role, as people try to "restore some of the lost self-image associated with having donated zero" (Tonin and Vlassopoulos 2013, 23). As donating zero in T3 affects the charity directly, it is most crucial for the self-image, which is why exiting for self-deception is most beneficial for the dictator in T3 (Tonin and Vlassopoulos 2013, 23–24). Gneezy, Gneezy, et al. (2012, 7236–38) also use an exit opportunity to study self-image concerns. They implement a pay-what-you-want opportunity for a photo. The results again show signs of self-image concerns. People choose to forego the purchase including the donation to avoid "appear[ing] cheap by paying too little", if they feel like the price should be high but are unwilling to pay that much (Gneezy, Gneezy, et al. 2012, 7236). The authors attribute this to a concern for a positive self-image. It has to

be considered that as it is not specified whether a cashier is present at purchase, social image concerns could play a role as well, even if social image concerns towards other customers are ruled out. The self-deception approach by Dana et al. (2007, 71–72, 74–75) uses reduced transparency in a DG. Figure 9 shows a modified payoff matrix for this hidden information treatment (HIT). While 74% of dictators act fair when Y's payoffs are visible, only 47% of HIT participants decide to reveal payoffs and then act generous. This is proof for self-image concern, as dictators use strategic ignorance to "disregard the fact that they are not helping the recipient, while simultaneously acting selfish" (Grossman 2014, 2664; Bénabou and Tirole 2006, 1653–54). Contrarily, when aware of payoffs, the self-image suffers, when making the selfish choice.

Player X's choices		
	A	Y:? X:6
	B	Y:? X:5

Figure 9: Payoff matrix in hidden information treatment (Dana et al. 2007, 72)

In another DG approach by Dana et al. (2007, 73–74, 76–77), dictators have to decide quickly to maximize their own payoff, otherwise they can wait and let nature decide. 24% of participants are cut off by nature with evidence that decisions are willingly delegated. People might prefer the selfish choice, but don't want to choose it themselves, so they use self-deception to maintain a positive self-image (Dana, Weber, and Kuang 2007, 74, 77). As the recipient doesn't know who made the decision, social image concerns can be disregarded. Self-deception in both cases helps people to stay ignorant to be able to act selfish without a suffering self-image. Similarly, Murnighan et al. (2001, 392, 397) show self-image concerns by use of self-deception in a DG with restricted allocation possibilities. They observe that dictators act more prosocial in unrestricted games because they can only blame themselves for the allocation and being selfish negatively affects their self-image. If choices are restricted, selfish behavior can be attributed to the restriction and not the decision alone (Murnighan, Oesch, and Pillutla 2001, 392). Self-deception is also observed in the field. If subjects can skip a donation request without actively declining, donation rates and amounts are lower than if people have to actively decline (Adena and Huck 2020, 722–23). In the active choice scenario people can't use self-deception to get out of the donation so they donate due to self-image concerns (Adena and Huck 2020, 723). Additionally,

people use prosocial behavior to enhance their self-image after dishonest behavior (Ploner and Regner 2013, 374). If people are given a chance to cheat, many of them do, but in a following DG more giving is observed. Moral balancing is used to "wash their conscience" from cheating (Ploner and Regner 2013, 382). The need to ameliorate their self-image motivates people to act prosocially.

Using the findings by Bénabou and Tirole (2006, 1654) that extrinsic motivation crowds out intrinsic motivation, as it casts doubt on the actual reason for prosocial behavior and kindness, Dubé et al. (2017, 161) conduct a field experiment that finds evidence for self-image concerns. If a higher donation is combined with a higher discount on a product, demand decreases due to self-signaling. Even though consumption utility is higher for discounted products, people choose not to buy the product and thereby forego the donation because high discounts negatively influence self-image, as an ulterior motive for the donation arises which questions perceiving the self as fair (Dubé, Luo, and Fang 2017, 161). People might even derive more utility from the "self-perception of valuing charity […] than from the actual act of charitable giving" (Dubé, Luo, and Fang 2017, 181). Closely related is the lab experiment by Gneezy, Imas, et al. (2012, 179–80), who observe that costly prosocial behavior signals adherence to morals and thereby positively affects the self-image. Extrinsic motivations don't have to be monetary to crowd out intrinsic motivations. While many studies have observed increased donation rates in a public setting, Savary and Goldsmith (2020, 538) find decreased donation rates and concern for donors own self-image in the public setting. Results are in line with the results of Ariely et al. (2009), that public recognition "undermine[s] the self-signal of altruism, which in turn decreases donation rates" (Savary and Goldsmith 2020, 538). The self-image motive can also be elicited with framing. Experimental evidence finds that including hedonic and not utilitarian reference products in a donation request leads to more donors and volunteers (Savary, Goldsmith, and Dhar 2015, 27). In addition, non-donors assess themselves more negatively, if a hedonic product is used, as it "affects the self-signal associated with the decision to donate" (Savary, Goldsmith, and Dhar 2015, 28). Donations are more common to avoid a negative self-image (e.g., suggestion of a selfish motive).

Contradicting the previous studies, Grossman (2015, 32) doesn't support self-signaling as a motive for giving. To find evidence for self-signaling in a probabilistic DG, giving rates should be higher, if the probability that dictators' choice counts is low, as it lowers their

outcome-utility cost (Grossman 2015, 30–31). For most conditions, giving rates decrease with decreasing probability, which is why a self-signaling motive is discarded.

The results of several studies show, that self-image concerns do have an important influence on monetary donation decisions and a multitude of approaches exists to test for the motives. For blood (plasma) donation experimental evidence for self-image exists as well (e.g., Godin and Germain 2014, 4). Still, most studies look at monetary donations, other types of prosocial behavior are rarely considered in economics.

7.3. Reciprocity

Reciprocity or reciprocal altruism is an evolutionary concept that is divided in direct and indirect reciprocity. In a situation of direct reciprocity, a human will help if the costs occurring are lower than the benefits for the other person, and if it is unlikely that the beneficiary will cheat and not reciprocate in the future (Trivers 1971, 36). For direct reciprocity the beneficiary helps its' benefactor, while for indirect reciprocity help is expected to be returned by any other person (Nowak and Sigmund 1998b, 561–62). This is why an individual helps those, who are "likely to help others" (Nowak and Sigmund 1998b, 562) or "have helped others" (Milinski, Semmann, and Krambeck 2002b, 881), an example being kidney donation chains. Therefore, indirect reciprocity is directly linked to reputation and status, used to determine who to help (Alexander 1987, 95). Indirect reciprocity can be further distinguished in downstream reciprocity, if a person helps someone who has helped others in the past, and upstream reciprocity, which describes helping someone because of having personally received help before (van Apeldoorn and Schram 2016, 2; Mujcic and Leibbrandt 2018, 1683). Hence, the motivation to engage in reciprocal behavior can be either returning of benefits or expected benefits in the future, but also compliance with the reciprocity norm (Gouldner 1960, 161), leading to a categorization as self-serving.

How does reciprocity work as a motive for giving? Table A4 summarizes corresponding studies. Direct reciprocity is shown in two-part DGs (Ben-Ner et al. 2004, 333). The dictator of the first DG doesn't know about a second game with reversed roles. The second game pairs either the same two participants (SR treatment) or pairs the new dictator with another person (GR). Figure A13 displays differences between the amounts given in round two to the amount received in the first game. Results show "statistically significant and economically substantial reciprocation of amounts received by senders in the SR, but not those in the GR treatment" (Ben-Ner et al. 2004, 342), speaking for direct reciprocity only.

In the field, a direct reciprocity motive is observed for charitable giving. Gift exchange considerations influence donors significantly, they feel obligated to reciprocate gifts that they receive from a charity (Falk 2007, 1501). Significant increases in the number of donors are observed: 17 % for a small and 75 % for a large gift, compared to the no gift condition, which is in line with a motive of reciprocity (Falk 2007, 1501). However, results from the field study differ from experimental findings insofar, that donations in the large gift condition are more often relatively low, compared to those in the no gift condition (Falk 2007, 1507). Peoples' donation amount doesn't seem to be guided by the amount they received themselves, but gifts just lead to a higher feeling of obligation and crowd in low donations. Another approach to test for reciprocity in the field is to include reciprocity cues. By including a message evoking reciprocity norms in a donation request, Krupka and Croson (2016, 157) observe increased donation amounts and donation likelihood. Direct reciprocity in all of these cases is found after an initial act of giving. So the reciprocity motive is not studied as a "starting mechanism" (Gouldner 1960, 176–77) in which a person acts prosocial without previously having been a direct beneficiary.

In a close group of people, being prosocial might be remembered and later reciprocated, but donations to charity or helping strangers cannot be explained by motives of direct reciprocity. Instead, indirect reciprocity might motivate people to act prosocially. Indirect reciprocity is very closely related to social image and "downstream reciprocity operates via reputation building" (Ferguson and Lawrence 2016, 149). If image scores are used to display how often a person has helped or denied help in the past, cooperation works long-term as it helps develop a high image score, which in turn helps to receive support in the future (Nowak and Sigmund 1998a, 576). The degree, to which image scores can be observed, determines how well reciprocity works (Nowak and Sigmund 1998a, 575). Following simulations, Wedekind and Milinski (2000, 851) experimentally find evidence that "cooperation through indirect reciprocity takes place and is controlled by image scoring". Beneficiaries have a significantly higher image score, meaning that they had previously been more generous than subjects the donors choose not to give to (Wedekind and Milinski 2000, 851) (see Figure 10). A drawback of the considerations until now is that researchers always looked at a specific social group in which cooperation occurs. Milinski et al. (2002b, 882) add to this research by including public out-group donations to a charity and show that generousness to charities "pa[ys] off through indirect reciprocity" for the donor. Additionally, charitable donations are positively related to political reputation (Milinski,

Semmann, and Krambeck 2002b, 882). Similarly, to uphold a good reputation, contributions to a public good stay high, if indirect reciprocity is expected (Milinski, Semmann, and Krambeck 2002a, 425). All these findings are in line with initial results on indirect reciprocity and status by Alexander (1987, 95) and present evidence for indirect downstream reciprocity.

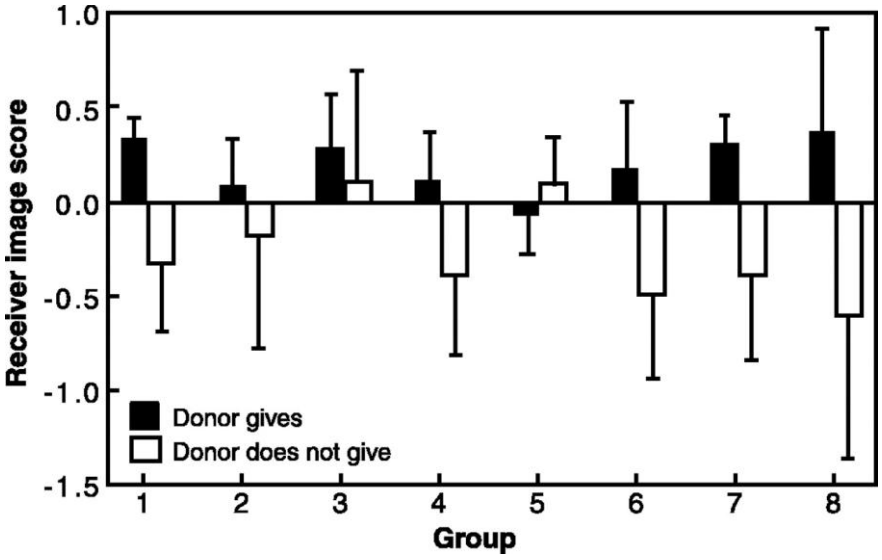

Figure 10: Image scores of receivers and donors decisions (Wedekind and Milinski 2000, 851)

Furthermore, van Apeldoorn and Schram (2016, 1) observe indirect downstream reciprocity in the field by using an online service environment, in which those, having a history of providing service to others, are more likely to receive a (positive) response to a service request. Contrarily, as the authors don't find a correlation between accepted requests and the extent of services previously used by the requested provider, upstream reciprocity is not present. Contrarily, in a traffic field study, indirect upstream reciprocity is found as "subjects are more than twice as likely to act generously and stop [for someone] after someone else has stopped for them" (Mujcic and Leibbrandt 2018, 1684), which simultaneously provides proof for informal prosocial behavior. As results are robust to reputation concerns (see Figure A14), indirect reciprocity can also stem, e.g., from feelings of debt (Mujcic and Leibbrandt 2018, 1693, 1696). For volunteering specifically, Manatschal and Freitag (2014, 209–10) look at "altruistic reciprocity", which is their term for upstream reciprocity and is considered more selfless than strategic (downstream) reciprocity. They find that altruistic reciprocity and informal helping are positively correlated, while strategic reciprocity is mostly observed for formal helping (Manatschal and Freitag 2014, 226). As

altruistic reciprocity is based on obligations or indebtedness caused by having received help in the past (Manatschal and Freitag 2014, 212), it still has to be considered a self-serving and not an altruistic motivation, contrarily to the authors categorization. The obligation to contribute when others are or have been contributing as well, preferential at a similar level, leads to a positive correlation between one's own contribution and those of others and is based on the morality of cooperation by Sudgen (1984, 774). This idea is used to show signs for indirect reciprocity, e.g., by Clark (2002) and Croson (2007) in PGGs. Revealing maximum contributions has a positive effect on average contributions (Clark 2002, 42), which is a sign for reciprocity. The reasoning is that "subjects might want to reciprocate the behavior of previous strangers to subsequent ones" (Clark 2002, 36). Clark (2002, 36) calls this "'daisy chain' reciprocity based on the maximum contribution of others". Similarly, contributions of subjects are positively correlated to others' contributions for 71% of participants after excluding a reputation motive by random group assignment, speaking for a reciprocity motive (Croson 2007, 210–11). Subjects seem to use others' average contribution as an orientation for their own contributions (Croson 2007, 213). Additionally, data on charitable donations and volunteering show that those expecting to be recipients of prosocial behavior in the future are more charitable themselves, which is in line with an indirect reciprocity motive (HO 2013, 801) and shows that reciprocity can also be based on future benefits .

Table A4 shows a multitude of possible approaches, used to test for reciprocity motives in the field or the lab. Indirect reciprocity is often used alongside social image, but there is also evidence without (e.g., Mujcic and Leibbrandt 2018, 1693, 1696; Greiner and Levati 2005, 714; Croson 2007, 210–11), then usually related to expected benefits, obligation or indebtedness. Additional to the types of prosocial behavior discussed, usage of the reciprocity motive to increase donation behavior has already been proposed in organ donation (Nadel and Nadel 2005, 312–17).

7.4. Negative State Relief

As shown in chapter 5.1.1 and Figure 3, prosocial motivation can stem from negative affect. The Negative State Relief motive was first introduced by Cialdini et al. (1973, 505) as an explanation for why people act charitable if they feel bad and stands in direct competition with the EA-hypothesis. The ultimate goal of such acts is not to help others but for the self to feel better (Cialdini, Darby, and Vincent 1973, 513). Here, the NSR model "posits the egoistic desire to manage personal sadness as a primary cause of helping" (Cialdini et

al. 1987, 754). The Negative State Relief motive, as well as the EA-hypothesis, is mostly discussed in psychology. Experiments, e.g., by Cialdini often don't adhere to important rules for economic experiments (e.g., no deception of subjects) or rely on self-reported feelings. Experimental procedures are therefore not discussed in detail in this thesis. Cialdini et al. (1987, 754) find experimental support for a NSR reasoning, as increased helping is only predicted by peoples' sadness and not their empathetic concern. Contrarily, others find results in line with the EA-hypothesis, with sadness "not account[ing] for the effect of empathic concern" (Dovidio, Allen, and Schroeder 1990, 249). As a response to the findings by Cialdini et al. (1987), Batson et al. (1989, 931–32) conducted further studies to refute the NSR motive, their results being in line with the EA-hypothesis. Still, Batson et al. (1989, 932) stress that NSR can very much be seen as a motive, in particular, if empathy is not present, nevertheless, "the empathy-helping relation is not simply the product of an egoistic desire for negative-state relief". Negative affect is shown to be a motivator for monetary donations in particular in younger generations (Bjälkebring et al. 2016, 3). Donations motivated to avoid feelings of guilt can also be categorized as negative affect. Anticipatory guilt stemming from empathy proved to be an important predictor of donation intention (Basil, Ridgway, and Basil 2008, 17). Further research on guilt aversion and empathy acknowledges a multitude of motives as people act both out of pure altruism caused by empathy and to avoid negative feelings of guilt (Andreoni and Rao 2011, 519).

8. Motives for Volunteering Specifically

Contrarily to blood or monetary donations, volunteering often is a longer process with actual interaction with the beneficiaries, so there are further motives that are specific to this type. Clary et al. (1998, 1517–18) formulate six different motivations and confirm them in the lab and the field using functionalist theory. The motives are generic, so they are valid for any kind of volunteering (Clary et al. 1998, 1528). Some of their motives are already part of the general discussion, such as pure altruism (values in Clary et al. (1998, 1517–18)), social image (social), self-image (protective, enhancement) and negative affect (protective). Clary et al.'s (1998, 1518) further volunteering motives are named understanding and career. Moreover, the social and enhancement motive have an extended explanation. Being motivated by the social motive not only describes social image concerns, but volunteers are additionally motivated by being able to spend time with or make new friends. Similarly, the motive named enhancement encompasses self-image concerns as well as

building and developing of an identity. The understanding motive represents being motivated by learning, gaining knowledge or experience. Furthermore, volunteers are motivated by benefits for their career. Apart from the pure altruism motive values, all motives are categorized as self-serving.

9. Summary and Conclusion

Overall, there is a very broad literature on the topic in several research fields, most notably in economics and psychology. Prosocial behavior is initiated by a multitude of motives that are closely connected and can occur at the same time or crowd each other out. This makes it challenging to narrow down and find evidence for a specific motive, as many confounding variables have to be accounted for. People act both, to serve others and the self, but by far more evidence is found for the diverse self-serving motives. Figure A4 is an attempt to show relationships, interdependencies and origins of the different motives based on the main findings from literature. Still, it is important to notice that there is not one single correct depiction. Depending on the studies and definitions considered, other interdependencies or connections are also plausible. In addition, researchers have very different opinions on the existence of specific motives and for several of them, e.g., pure altruism, it is not conclusively clarified, whether these motives actually exist. Table A5 shows that motives are not studied for all types of prosocial behavior to the same extend. Monetary donations are most extensively studied. In many cases, these are charitable contributions, but there are also studies that use monetary giving in DGs or PGGs without charity involvement. In these cases, categorization of lab experiments in either formal or informal is difficult to accomplish. Therefore, these studies are considered separately in Table A5 and could be extended, e.g., with field studies using a specific type of behavior. Informal prosocial behaviors and blood donations are studied, but less often. Due to the special circumstances of volunteering, additional motives exist, but have not been economically confirmed. Overall, the literature read and analyzed shows that informal prosocial behavior, blood donations and, for some motives, volunteering could receive more attention in further studies. Another focus of this literature review is to show approaches that can be used to test for the specific motives. Table 3 shows an overview of motives and corresponding approaches. While some motives are investigated in detail and can quite unambiguously be tested for, e.g., altruism and social image in general, others, e.g., status, have not yet reached a common ground in terms of approaches and might be interesting for further research. For motives

primarily discussed in psychology (EA and NSR) experiments largely don't align with rules for economic experiments, leaving room for future study possibilities. A "yes" in the evidence column of Table 3 shows that these motives are conformed in multiple studies and for several types. This is the case for many of the motives. Contrarily, pure altruism (also EA) and NSR are not discussed for several types or evidence is contradicting. The impure altruism motive additionally leaves further research possibilities, as an actual differentiation from warm glow and simultaneously pure altruism is very rarely done and finds no proof for impure altruism. A further important consideration is that definitions and strategies differ largely between disciplines as well as researchers. Reaching a common ground could be another future goal.

	motive		**approach**	**evidence**
other-serving	pure altruism		crowding out, matching	rare
			empathy-altruism: isolate from egoistic alternatives (negative affect, oneness): escape easy vs. difficult	partly
mixed	fairness		dictator games, differentiating from other motives	partly, mostly self- and rarely other-serving
self-serving	impure altruism		crowding out, matching	partly
	warm glow		crowding out, matching	yes
	social image		private vs. public	yes
	social image	recognition	recognition yes/no	yes
		prestige	linear vs. category reporting	yes
		status	public vs. private, activate status motive, relative price	yes
		reputation	repeated interaction	yes
	self-image		exit, self-deception, moral balancing, crowding out	yes
	reciprocity	direct	two-part games, gift-giving, normative cues	yes
		indirect	history of giving and/or receiving	yes
	Negative State Relief		isolate from altruistic alternatives (empathy-induction, mood change (not) possible), use of self-reported feelings	partly

Table 3: Motives and corresponding approaches (own depiction)

10.Appendix

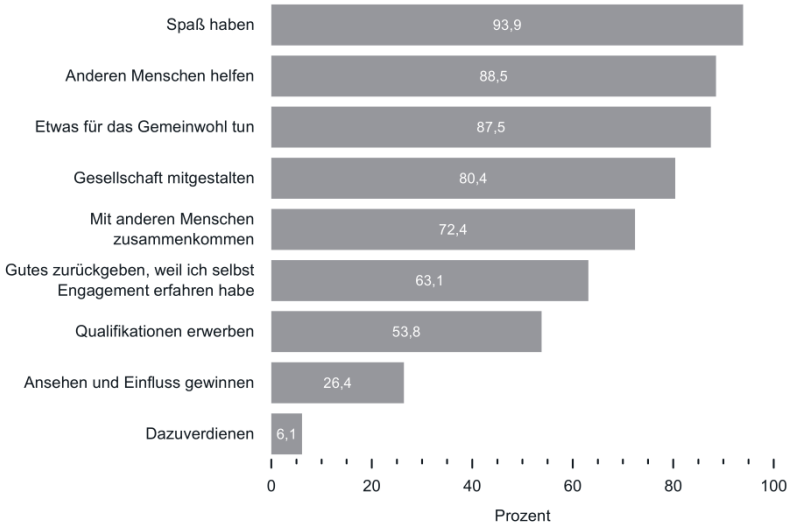

Figure A1: Motives for volunteering in Germany (Simpson et al. 2021, 133)

Paper \ Motive	Social-image	Self-image	Altruism	Pure Altruism	Impure Altruism	Warm-glow	Reciprocity	Reputation	Recognition	Other
Andreoni (1990)			x		x	x				
Andreoni (1989)			x		x	x				
Dana et al. (2006)	x									
Dana et al. (2007)		x								
Tonin & Vlassopoulos (2013)		x								
Crumpler & Grossman (2008)			x	x	x	x				
Harbaugh (1998)	(x)								x	prestige
Glazer & Konrad (1996)	(x)					x				status
Ariely et al. (2009)	x									

Figure A2: Concept Matrix (own depiction)

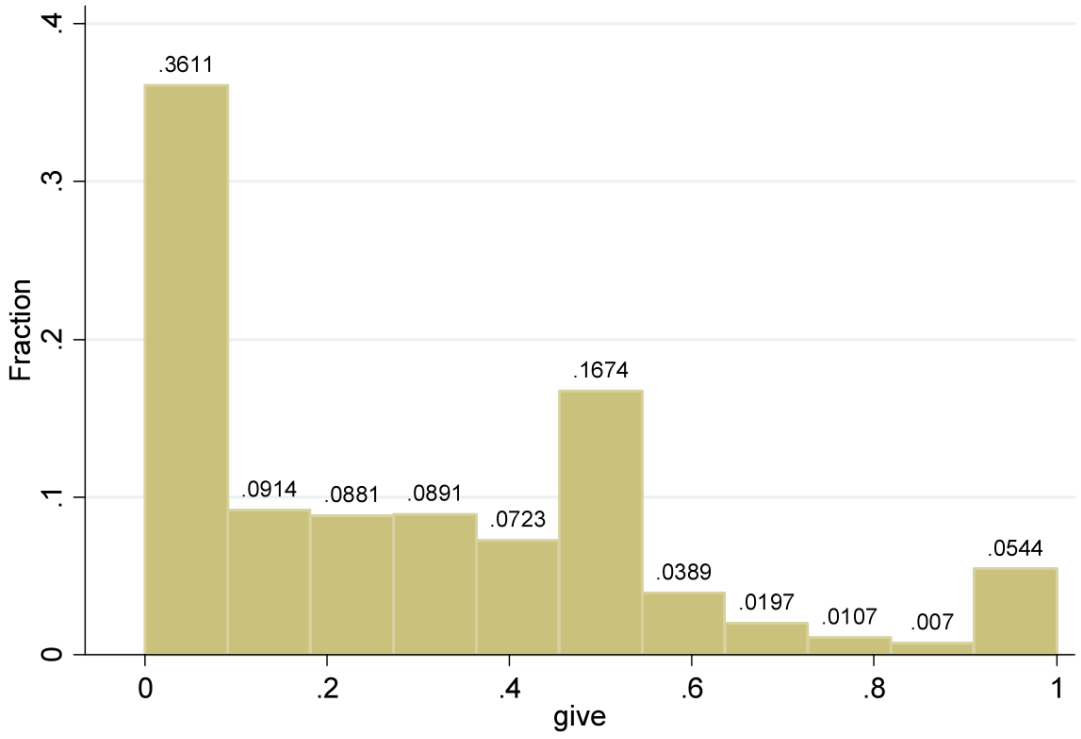

Figure A3: "Distribution of individual give rates" (Engel 2011, 589)

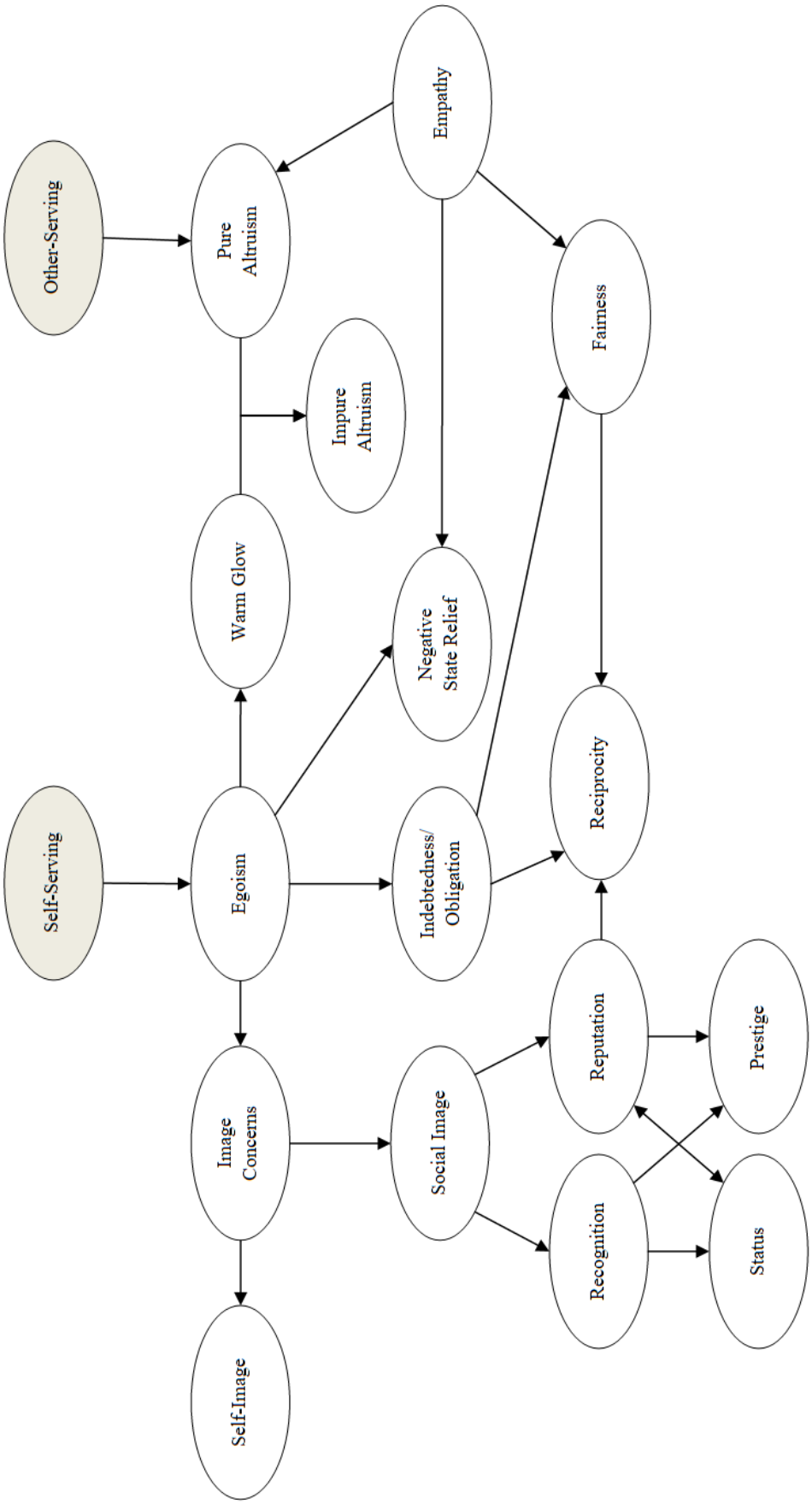

Figure A4: Overview of motives (own depiction)

Explanation of Why We Help	Outcome of Helping: We Relieve the Other's Sufering	Outcome of Helping: And, as a Result, We Receive Self-Benefits
Altruistic Account	Ultimate goal	Unintended consequences
Egoistic Account	Instrumental goal	Ultimate goal

Figure A5: Explanations of prosocial behavior and corresponding goals (Batson and Shaw 1991, 109; Batson 1990, 340)

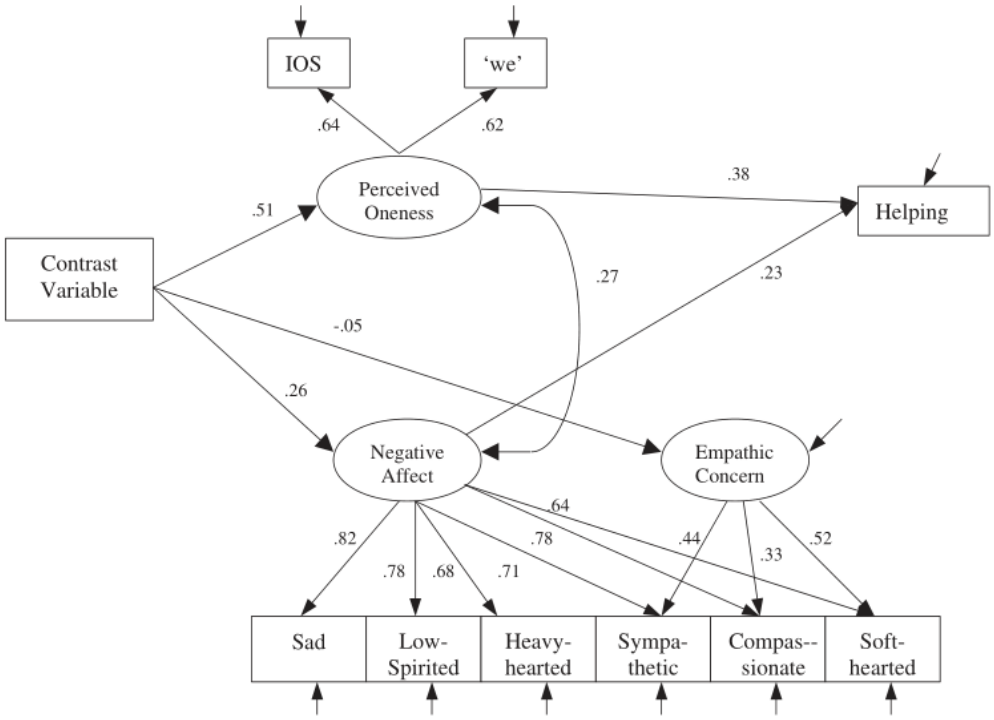

Figure A6: Structural Equation Model; Effects of oneness and negative affect on helping behavior (Maner et al. 2002, 1608)

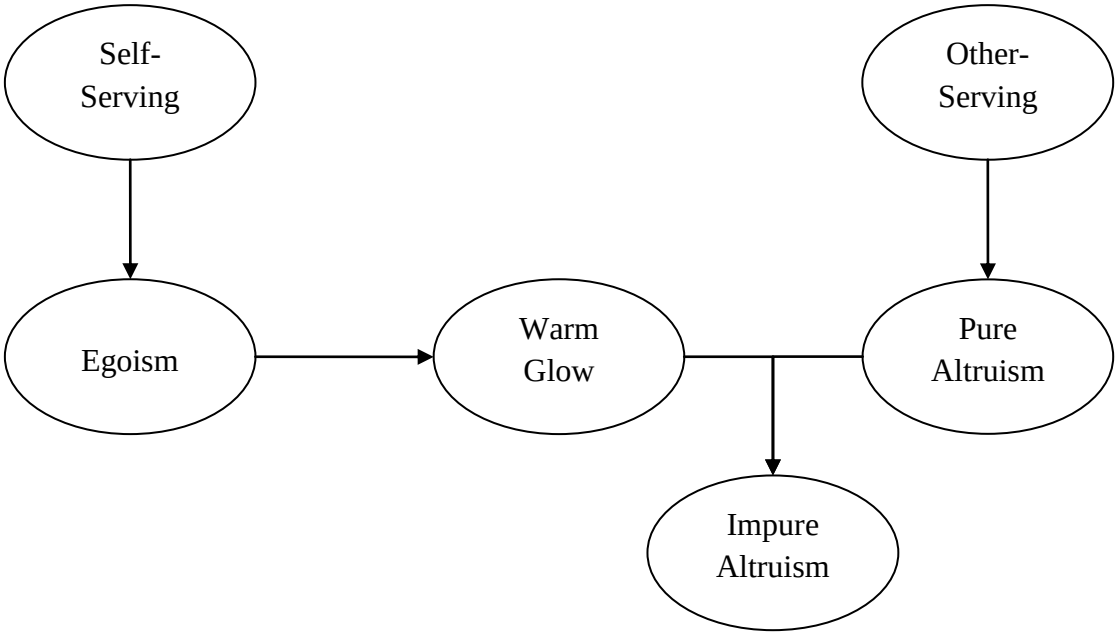

Figure A7: Classification of warm glow (own depiction)

Study	Approach	Key Information	Result
Crumpler and Grossman (2008)	crowding out (reverse)	**warm-glow vs. pure altruism**, DG, lab, recipient: charity, gets a fixed amount, subjects can crowd out experimenter's donation	incomplete crowding out for ~57 % → warm glow
Andreoni (1993)	crowding out	PGG, lab, crowding out of voluntary by mandatory contributions	incomplete crowding out → possibly warm glow
Bolton and Katok (1998)	crowding out	**impure vs. pure altruism**, DG, lab, initial allocation differs	incomplete crowding out → impure altruism
Eckel et al. (2005)	crowding out	**warm glow vs. pure vs. impure altruism,** DG, lab, recipient: charity, third-party support for charity	crowding out close to zero → warm glow
Konow (2010)	crowding out	**warm glow vs. (pure vs. impure) altruism**, DG, lab, higher initial endowment for recipient in subsidy treatment	partial crowding out → altruism
	matching	**warm glow vs. (pure vs. impure) altruism**, DG, lab, recipient: charity, donation	fraction increases → altruism

		to one of the charities is matched by experimenters; do more people donate to this charity?	
Tonin and Vlassopoulos (2010)	crowding out	**warm glow vs. pure altruism**, real effort task, field, fixed vs. variable amount to charity (determined through effort)	warm glow, no pure altruism
Null (2011)	matching	**warm glow vs. pure altruism**, DG, field, divide between charities, matching rates change	substitution rare → warm glow

Table A1: Overview warm glow and (im)pure altruism studies, approaches and results (own depiction)

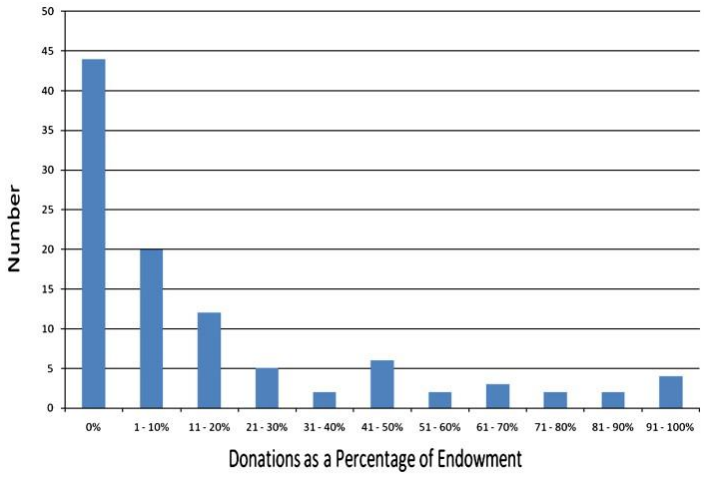

Figure A8: Donations as a percentage of endowment (Crumpler and Grossman 2008, 1018)

	Study	Approach	Key Information	Result
social image	Ariely et al. (2009)	public vs. private	real-effort task, with/without monetary incentive, recipient: "good" and "bad" charity	good & public: more effort without incentive, crowding out with incentive, good & private: increased effort with incentive, bad: no sign. difference between private & public without incentive → social image concerns

	Soetevent (2005)	public vs. private	field experiment in church, baskets or bags to collect service, recipient: parish or charity	offering for charity increases 10% with baskets, no increase for parish → social image concerns only if recipient charity, not for public good
	Dana et al. (2006)	public vs. private, exit	dictator game, exit option with ($9,$0) payoff offered after allocation, standard: recipient learns about game if no exit, private: recipient doesn't learn about the game	standard: 43% exit private: 4% exit → concerned by judgment of recipient → social image concerns
	Andreoni and Bernheim (2009)	transparency	dictator game, public roles & outcomes, nature decides with prob. p and gives $x_0=0$ or $x_0=1$	most split fair for p=0, for increased p: $x= x_0$ most common → social image concerns
	Linardi and McConnell (2011)	public vs. private (vary social environment)	volunteering, lab, real-effort task, observation of subjects volunteering time and productivity	more volunteering if peers are present, but unobservable productivity unaffected → social image concerns
recognition	Fisher and Ackerman (1998)	with/without recognition	lab and field experiment, recognition: plaque depending on volunteering hours, group-need: high/low	recognition increases volunteering only if group-need is high/ if more socially desirable → recognition motive
rec. + prestige	Karlan and McConnell (2014)	with/without recognition, category reporting	field experiment, donations, recognition: listing in newsletter, different giving circle depending on amount	recognition leads to higher giving probability, but no influence of circle thresholds → recognition, no prestige
prestige	Andreoni and Petrie (2004)	category reporting	public goods game with/without category reporting	partial shift of contributions to lower end of category, more contributions in higher category → prestige as one but not the only motive

	Lacetera and Macis (2010)	category reporting, public vs. private awards	field experiment, blood donation frequency, awards for certain donation thresholds, awards given in private or in public	sign. higher donation frequency closer to thresholds with public recognition, even more closer to ceremony → prestige, social image
status	Kataria and Regner (2015)	public vs. private	real effort task for charitable donation, performance feedback public or private	average effort significantly higher in public → status → social image
	Griskevicius et al. (2010)	public vs. private, relative price	condition with/without status motive, public and private condition, green product more or less expensive than alternative	status condition: more green decisions in public → status motive status condition: green product more attractive if more expensive
reputation	Ekström (2012)	public vs. private	field experiment, watching eyes as cue for public treatment, recycling	no change in behavior → no reputation effect observed → unfitting cue?
	Krupka and Croson (2016)	repeated interaction, normative cues (public vs. private)	field experiment, library asks for donation with/without eyespot cue	if eyespots are used, people repeatedly interacting with the library donate more → small reputation effect
	Palfrey and Prisbrey (1996)	repeated interaction, stranger vs. partner	several rounds of a PGG, either with the same subjects (partner) or others (stranger)	giving not increased in partner treatments → no reputation effect
reputation + status	Barclay (2004)	repeated interaction, second game	trust game after PGG, conditions: (1) subjects in PGG don't know about trust game (no reputation), (2) know about trust game (reputation), (3) know about trust game and can choose a game partner (competitive)	(2) & (3): contributions in PGG increase over rounds, (1): contributions decrease → reputation motive (2): decrease in last round (3): increase in last round → status

Table A2: Overview social image studies, approaches and results (own depiction)

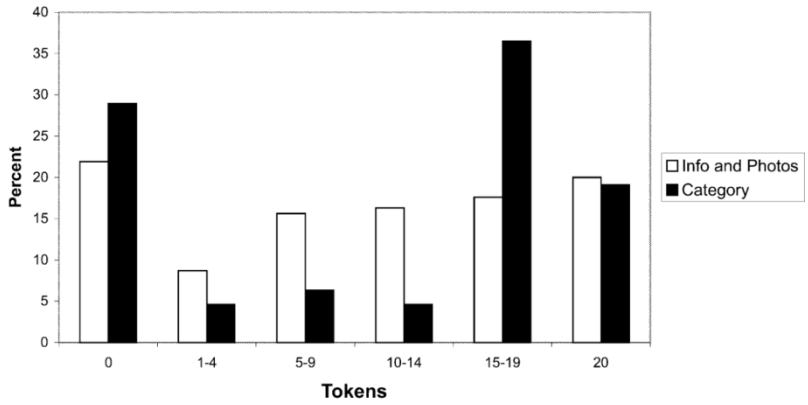

Figure A9: "Distribution of contributions to the public good, exact reporting and category reporting, categories 0–14 or 15–20." (Andreoni and Petrie 2004, 1619)

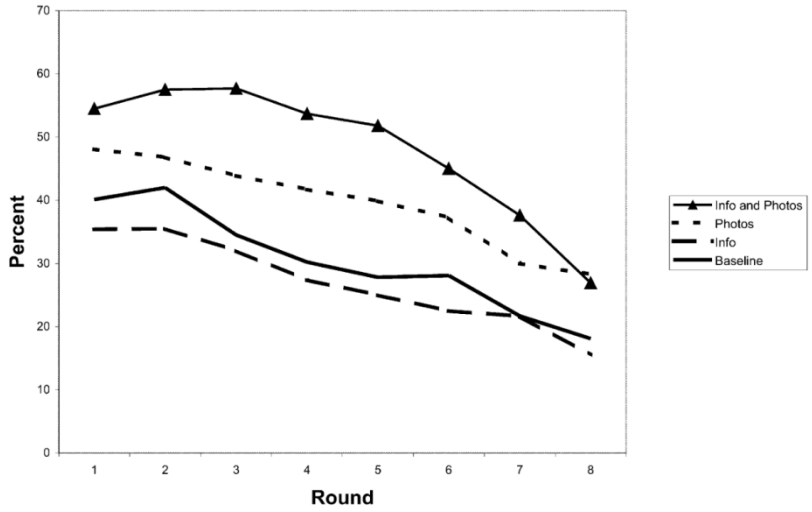

Figure A10: "Average percent of endowment contributed" (Andreoni and Petrie 2004, 1612)

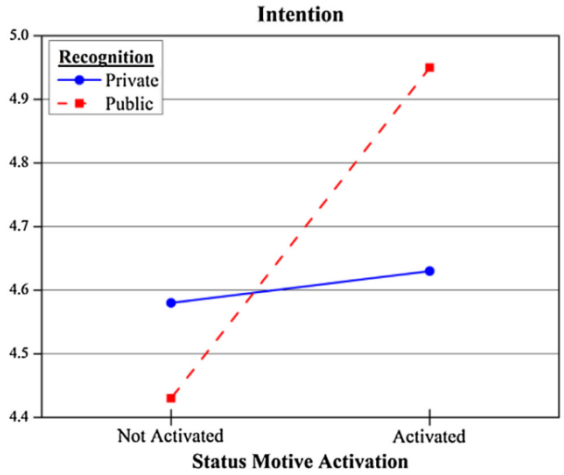

Figure A11: Participation intention, status motive activation and recognition (Choi and Seo 2017, 29)

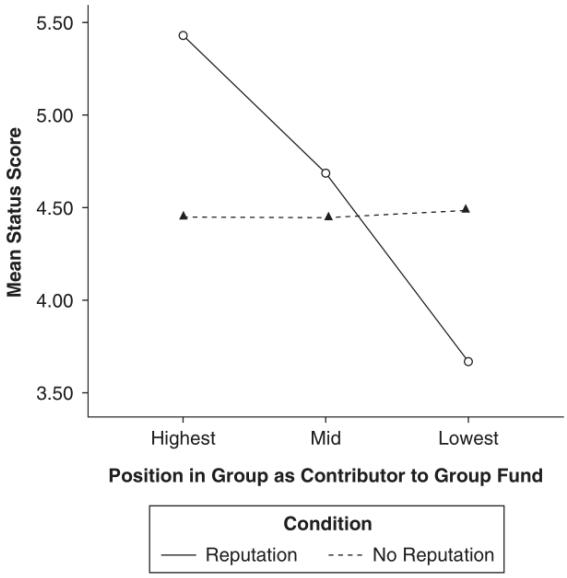

Figure A12: "Relationship between contribution to the group fund and mean status score" (Hardy and Van Vugt 2006, 1407)

Study	Approach	Key Information	Result
Tonin and Vlassopoulos (2013)	exit	dictator game, lab, recipient: experimenter (T1) or charity (fixed (T2) or dependent (T3) amount), exit option after allocation decision	24 % exit, T1: lower moral costs of exiting → most exiting T3: exiting often observed for zero allocations → self-image
Gneezy (2012)	exit	field experiment, pay-what you-want purchase with or without donation to charity	purchase rate: 8.39% without and 4.49% with donation, price paid sig. higher with donation → self-image
Dana et al. (2007)	self-deception (reduced transparen-cy, strategic igno-rance)	modified dictator games, recipient: other subject, (1) HIT: recipients payoff has to be actively revealed; (2) nature can cut in to decide, act quickly to defi-nitely get max payoff	(1) HIT: 47% chose to reveal and then act fair, vs. 74% in transparent game (TG) (2): 24% cut off, decision delayed, → self-deception → self-image concern in TG
Murnighan et al. (2001)	choice restriction, self-deception	dictator game, full choice vs. restricted choice set for allocation	if choices are more restricted subjects give less, blame restrictions → self-deception → self-image

Adena and Huck (2020)	self-deception	field experiment, online donation request after purchase, decline options: "I have donated already", "No thanks", T2: proceed button → no answer, T3: forced answer	T3: more donations and higher donation amounts → self-deception in T2 → self-image concerns
Ploner and Regner (2013)	moral balancing	dictator game, recipient: other subject, manipulation of self-image through cheating possible	those who cheated donate more to wash conscience → self-image
Dubé et al. (2017)	crowding out	field experiment, combines purchase (with/without discount) and donation	less purchases if high discount even for high donation, crowding out due to extrinsic motivation → self-image
Savary and Goldsmith (2020)	crowding out	online, private vs. public donations with recognition	public donations raise doubt of own altruistic motive, weakened self-signaling utility, lower donation rates in public → self-image
Savary et al. (2015)	framing	online, donation request with hedonic or utilitarian reference product (similar price as donation amount asked for)	hedonic product: more neg. self-assessment of non-donors, more donations to avoid neg. assessment → self-image
Grossman (2015)	Bayesian signaling	probabilistic DG, for self-image concerns: giving rates higher if probability that dictator's choice counts low	no sign. decrease from high to low probability, partly even opposite change → no self-image concern

Table A3: Overview self-image studies, approaches and results (own depiction)

Study	Approach	Key Information	Result
Ben-Ner et al. (2004)	two-part dictator game, role reversal	dictators of 1st DG don't know about 2nd game with reversed roles, SR: same pairs in both games, GR: new pairs	sign. reciprocation of amounts received only in SR → direct reciprocity

Falk (2007)	gift-giving	field experiment, charity gives no/small/large gift with donation request	sign. more donors in gift conditions → direct reciprocity but: donations in large gift condition often relatively low compared to no gift
Krupka and Croson (2016)	reciprocity cues	field experiment, library includes message that evokes reciprocity norms with donation request	increased donation amounts and likelihood → direct reciprocity
Wedekind and Milinski (2000)	donation history/ image scores	lab experiment, groups, subjects give/receive money to/from other group member, several interactions but never with the same person, player's donation history shown via an image score	sign. more donations to previously generous donors → indirect reciprocity (downstream)
Milinski et al. (2002b)	donation history	lab experiment, game with multiple rounds, subjects in each round donor and receiver, donations to charity or other subjects, donation history public	generousness to charities is rewarded with increased generosity of others → indirect reciprocity (downstream)
van Apeldoorn and Schram (2016)	service provision history, service usage history	field experiment in online service environment, experimenters set up several profiles with different service provision history and send service requests to other providers	more provided services in past lead to more (positive) responses to service requests → indirect downstream reciprocity no correlation between accepted requests and service usage of requested provider → no indirect upstream reciprocity
Mujcic and Leibbrandt (2018)	history of generousness received	field experiment in car park, baseline: observation if subject stops for experimenter car 2, treatment: first experimenter car 1 stops for subject then observation	treatment: generousness "more than twice as likely" → indirect upstream reciprocity
Clark (2002)	revelation of max.	PGG, reveal total vs. total	"small, marginally

	contribution	and maximum contributions after each round	significant positive effect on average contributions" → reciprocity
Croson (2007)	estimation of others contributions	PGG, estimate others contributions, then contribute; exclude reputation motive through random group assignment after each round	positive correlation between estimates and own contribution and between own and contributions of others → reciprocity

Table A4: Overview reciprocity studies, approaches and results (own depiction)

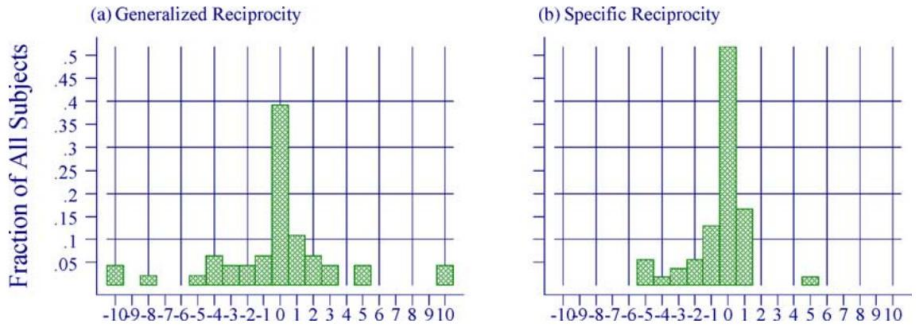

Figure A13: "Difference between amount sent and amount received" (Ben-Ner et al. 2004, 341)

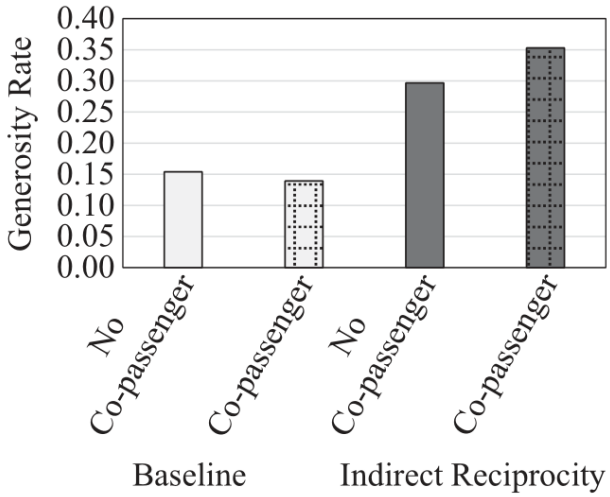

Figure A14: Generosity rate in baseline and indirect reciprocity treatment split in drivers with and without co-passenger (Mujcic and Leibbrandt 2018, 1694)

informal

empathy-altruism (pure altruism) Batson et al. (1981)
status Griskevicius et al. (2010)
reciprocity (indirect upstream) Mujcic & Leibbrandt (2018)
Negative State Relief Cialdini et al. (1987)
empathy-altruism (pure altruism) Cialdini et al. (1987)

formal – charitable donations / donations to organizations

fairness (pure altruism) Eckel & Grossman (1996)
warm glow Crumpler & Grossman (2008), Eckel et al. (2005), Tonin & Vlassopoulos (2010), Null (2011)
altruism Konow (2010)
social image, recognition, prestige, status, reputation Ariely, Bracha & Meier (2009), Soetevent (2005), Karlan & McConnell (2014), Harbaugh (1998b), Glazer & Konrad (1996), Kataria & Regner (2015), Choi & Seo (2017), Krupka & Croson (2016)
self-image Tonin & Vlassopoulos (2013), Gneezy, Gneezy, et al. (2012), Dubé et al. (2017), Adena & Huck (2020), Savary & Goldsmith (2020), Savary, Goldsmith & Dhar (2015)
reciprocity Falk (2007) (direct), Knupka & Croson (2016) (direct), Milinski et al. (2002b) (indirect downstream), HO (2013) (indirect)
Negative State Relief Basil, Ridgway & Basil (2008), Bjälkebring (2016)
pure altruism Tonin & Vlassopoulos (2010)
prestige Karlan & McConnell (2014)

formal- volunteering / planned helping

altruism Carpenter & Myers (2010)
warm glow Brown et al. (2019)
social image, recognition Linardi & McConnell (2011), Carpenter & Myers (2010), Fisher & Ackerman (1998)
indirect reciprocity HO (2013), van Apeldoorn & Schram (2016) (downstream)
value, understanding, social, career, protective, enhancement Clary et al. (1998)
indirect reciprocity (upstream) van Apeldoorn & Schram (2016)

formal – blood donations

warm glow Ferguson & Lawrence (2016)
social image, prestige Lacetera & Macis (2010)
self-image Godin & Germain (2014)
pure altruism Ferguson & Lawrence (2016), Tscheulin & Lindenmeier (2005)

monetary giving – type unclear

warm glow Andreoni (1993)
altruism Konow (2010), Bolton & Katok (1998) (impure)
social image, prestige, status, reputation

Dana et al. (2006), Andreoni & Bernheim (2009), Grossman (2015), Andreoni & Petrie (2004), Barclay (2004)
self-image Dana et al. (2007), Murnighan et al. (2001), Ploner & Regner (2013)
reciprocity Ben-Ner et al. (2004) (direct), Wedekind & Milinski (2000) (indirect downstream), Milinski, Semmann & Krambeck (2002a) (indirect downstream), Croson (2007) (indirect), Clark (2002) (indirect)
fairness (pure altruism) Hoffman et al. (1994), Dana et al. (2006; 2007), Andreoni & Bernheim (2009)
reputation Palfrey & Prisbrey (1996)
self-image Grossman (2015)

Table A5: Types of prosocial behavior and respective motives discussed; green: evidence found, red: motive objected (own depiction)

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Erklärung

Ich versichere wahrheitsgemäß, die Arbeit selbstständig verfasst, alle benutzten Quellen und Hilfsmittel vollständig und genau angegeben und alles kenntlich gemacht zu haben, was aus Arbeiten anderer unverändert oder mit Abänderungen entnommen wurde sowie die Satzung des KIT zur Sicherung guter wissenschaftlicher Praxis in der jeweils gültigen Fassung beachtet zu haben.

Karlsruhe, den 09.06.2023 _____

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