

**On Situated and Embodied Knowledge  
Regarding Moral Issues**

Ron Broeders

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# **On Situated and Embodied Knowledge Regarding Moral Issues**

Over Situationele en Belichaamde Kennis Betreffende Morele  
Vraagstukken  
(met een samenvatting in het Nederlands)

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# **Chapter 1**

## **Introduction**



**E**ver since ancient times people are intrigued by morality. The current thesis therefore stands in a long tradition of thinking about human responses towards moral issues. In this thesis I take the point of view that responses regarding moral issues can be malleable. This viewpoint is based on the observation that the nature of many moral situations is ambiguous and therefore can be influenced by temporarily salient cognitive information. Thus, I propose that people's moral compass shifts frequently as a result of the ambiguity that goes with situated judgments on, decisions about, and behavior towards what is right and wrong. Furthermore, in the current thesis I will argue that, as a result of this ambiguity, moral judgments, decisions, and behavior can be influenced by information that is temporarily available to an individual within the situation. This information can be activated by conceptually meaningful situational and contextual cues. Moreover, I will also put forward an embodied perspective on morality such that people's body postures may affect whether they intervene in morally dilemmatic situations, such as moral and bystander dilemmas. In the introduction of this thesis, I will introduce the relation between malleability, ambiguity, available knowledge, and embodiment, as well as the three empirical chapters that will study the effect of available knowledge on responses to moral issues. Before I will do this, however, I will discuss the importance of morality for society over and above the theoretical background of the morality concept in thinking about human conduct.

### **Morality: Society's Fundamental Building Block**

“No more baneful opinions crept in human life, than those of separating the fair from the useful. Why after all the contracts, which are closed in bad faith, the false witnesses, the illegal usury, the payment of debt with borrowed money (...)? All this only occurs because when we are doing business we only consider the benefits, and we do not see all that is dirty, unjust and false. (...) The main rule for doing business wisely therefore is: that what is useful may not be unfair, and what is unfair, may not be

useful.”<sup>1.1</sup> When reading the above statement you may have thought these words were spoken by a political leader challenging the severe global economic and financial crisis that hit the world at the beginning of the 21<sup>st</sup> century. In order to solve this economic and financial crisis many world leaders, like Britain’s Prime Minister Gordon Brown (2009), stated that: “markets need morals”. Nonetheless, the aforementioned quote was already provided by Caspar Barlaeus in January 1632 when he delivered his oration during the inauguration of the “Illustere School” of Amsterdam, the precursor of the University of Amsterdam.<sup>1.2</sup>

Taking a glance at some major human crises making the headlines at the start of the 21<sup>st</sup> century, a common denominator mentioned by policy makers and opinion leaders to solve these crises is a concept that has intrigued humanity ever since the days the human species developed intellectual capabilities: morality (Haidt, 2008; Haidt & Kesebir, in press). When sketching how to win the War on Terror and make the world a safer place, President Barrack Obama of the United States (2008) talked about the country’s “moral compass” and “America’s moral stature in the world”. In his movie “The Inconvenient Truth” the former vice-president of the United States Al Gore (2006), declared the current crises regarding climate change not so much as being a political issue, but rather a moral issue. By labeling the environmental crises as a moral issue, Al Gore implicitly said that humanity cannot afford not to take action and remain a bystander. The same goes for ethnopolitical crises. Labeling the conflicts in Rwanda, Sudan or the former Yugoslavia (e.g., Srebrenica, Kosovo) as genocide makes it much harder for administrations to step away from the problem (Kessler & Lynch, 2004). Labeling these crises as genocides basically implies it is immoral not to intervene.

The importance of morality for everyday life is illustrated by the fact that the concept already appeared on the scenery since the dawn of human history. In fact, morality and humans go together even before human beings entered the evolutionary stage, because most of the building blocks of human morality also exist in primates (De Waal, 1996, 2005; Wright, 1994). For instance, brown capuchin monkeys and chimpanzees

respond negatively to unequal reward distributions in exchanges with a human experimenter, thus rejecting unequal pay (Brosnan & De Waal, 2003; Brosnan, Talbot, Ahlgren, Lambeth, & Schapiro, in press). At the cradle of civilization, merchants in Mesopotamia already administered people's credits and debts in clay (Haidt, 2008). Hence these Mesopotamian merchants can be seen as the founding fathers of what we now call distributive justice.<sup>1,3</sup>

Throughout history tales and prescriptions told people how to live a moral life. For example, the Code of Hammurabi, the Hindu Vedas, the Egyptian Instructions of Amenemope (Haidt, 2006, 2008), and all holy textbooks of the great monolithic religions of the world, that is Judaism, Christianity and Islam, basically are text explaining to people what is right or wrong. In addition, various societies were taught about right and wrong and how to act morally by means of narratives, such as Homer's classic poem *Iliad*, the Indian epic poem *Mahabharata*, and the Persian *Shahnameh*, but also with the help of parables about moral persons, such as the Christian *Gospels* and the Islamic *Sunna* (Haidt, 2008; Haidt & Kesebir, in press). Contemplation about morality by means of narratives and tales continued into the modern age. Contemporary versions of parables stimulating thought about morality are movies (Pizarro, Detweiler-Bedell, & Bloom, 2006), such as *Mississippi Burning*, *In Name of The Father*, *Platoon*, *Cry Freedom*, *Cidade de Deus*, *Bloody Sunday*, and songs like for example *The Hurricane*, *Masters of War*, *Sunday Bloody Sunday*, *Miss Sarajevo*, *My City in Ruins*, *Biko*, just to name a few. These examples show the pervasiveness of morality in human life.

Modern moral scholars acknowledge the importance of morality, by stating that morality can be seen as a code of conduct put forward by any specific group or society, to make people cooperate and relate to each other, hence making social live possible (e.g., De Waal, 2006; Haidt, 2007; 2008; Haidt & Kesebir, in press; Hauser, 2006; Krebs, 2008; Narvaez, 2009; Turiel, 1983, 2006). In accordance with this line of reasoning, the former president of the Republic of South Africa, Nelson Mandela addressed this point of view in several speeches after his country had transformed

from the highly immoral Apartheid regime to a democracy based on the principle of one man, one vote, by referring to the concept of justice, a concept closely related to morality. As Mandela noted: “Considerations of justice and respect for international law should guide the relations between nations” (Mandela, 1994a). “We speak as fellow citizens to heal the wounds of the past with the intent of constructing a new order based on justice for all” (Mandela, 1994b). “Our daily deeds as ordinary South Africans must produce an actual South African reality that will reinforce humanity’s belief in justice, strengthen its confidence in the nobility of the human soul and sustain all our hopes for a glorious life for all” (Mandela, 1994c).

Thus, in his speeches Nelson Mandela relates to what is at the core of morality: to make people cooperate and relate to each other, hence making social life possible. These cooperative behaviors are not only necessary to make social life possible, but moral outlooks also are part of solving the great problems of our time, for example the current environmental crises, ethnopolitical conflict, genocide, terrorism, overpopulation, migration, refugees, and nuclear proliferation (Greene, 2002; Narvaez, 2009). People’s judgments of, decisions about and behavior towards these problems diverge because people have different conceptions of what is right and wrong (Greene, 2002; Griffin & Ross, 1991; Narvaez, 2009).

In addition, morality satisfies a basic human need, the need to belong (Baumeister & Leary, 1995), by holding groups together (Haidt, 2007; Haidt & Kesebir, 2007), but also gives people a sense of purpose and meaning in life (Baumeister, 1991; Haidt & Kesebir, 2007). Therefore, because solving the great societal problems of our time have at its heart issues of morality (Greene, 2002; Narvaez, 2009) and because morality has existential implications (Haidt & Kesebir, 2007), investigating how people form judgments on, make decisions about, and act towards what is right or wrong signals the importance of research into morality (Haidt, 2008; Narvaez, 2009).

## **Morality: Theorizing About Society's Fundamental Building Block**

Not only were people taught about morality since ancient times, scholars also contemplated about the concept. Ever since the days of antique classical Western philosophy people such as Aristotle and Aristippus, have been intrigued by what the right course of action is when confronted with moral issues and started thinking about morality (e.g., Beauchamp, 2001; Greene, Sommerville, Nystrom, Darley, & Cohen, 2001). Shortly after the birth of social psychology, morality even appeared in one of the earliest textbooks of social psychology as an important concept shaping human behavior and society (McDougall, 1908/1998). From this ancient debate of what is right or wrong two perspectives emerged dominating perspectives on morality into the 21<sup>st</sup> century.

On the one hand, one party of moral philosophers conceive of morality as predominantly a principle that can be defined by reference to objective standards of right and wrong (e.g., Hare, 1981; Rawls, 1971). Common knowledge holds that people should think carefully about the pros and cons of their decisions when responding to difficult issues (e.g., Descartes, 1644/1983; Locke, 1689/1997; Simon, 1955), especially regarding moral issues (e.g., Kant, 1785/1959). These rationalists perspectives argue that people should engage in reasoning processes, preferably rational reasoning processes, to determine what is the right thing to do (e.g., Kant, 1785/1959). On the other hand, there are moral philosophers who argue that morality is derived from feelings, not from reasoning (e.g., Hume, 1739/1951). Intuitionists like Hume favored the position that moral judgments and decisions are a result of moral sentiments.

Similarly, the debate between rationalists and intuitionists continued in the literature on moral psychology. Rationalists state that morality is caused primarily by processes of cognitive reasoning (e.g., Kohlberg, 1969; Piaget, 1932/1975; Turiel, 1983). Rationalists assert that individuals rely on moral deliberation and the weighing of options, considering consequences and potential outcomes when reflecting on

moral issues (Kant, 1785/1959; Narvaez, 2008, 2009; Nichols & Mallon, 2006; Pizarro & Bloom, 2003). When making judgments and decisions, individuals rely on moral reasoning involving conscious, language-based thinking (Kohlberg, Levine, & Hower, 1983). On the other hand, intuitionists argue that people's gut feelings about what is right or wrong cause thoughts about morality. In their view moral reasoning usually is a post-hoc construction, generated after moral judgments have been reached (e.g., Haidt, 2001; Kagan, 1984; Wilson, 1993). According to intuitionists, (affective-laden) intuitions determine moral judgments (e.g., Damasio, 1994; Haidt, 2001, 2007, 2008; Haidt & Björklund, 2008a).

So broadly speaking, two lines of thought can be distinguished regarding morality: One line states that morality should be conceived of thoughts that are the result of moral reasoning, a rationalist-cognitive process. The other line argues for the role of intuitive-affective elements in the process of reflecting on moral issues. It can be noted though that hard data resolving the controversy between rationalist and intuitionist perspectives are scarce (Haidt, 2001; Van den Bos, 2003). This lack of hard data applies to both social intuitionist models (Pizarro & Bloom, 2003) and rationalist models (Haidt, 2001, 2003).

Rather than continuing the ancient and ongoing impasse of believing in either rationalist or intuitionist conceptions of morality (Haidt, 2003; Pizarro & Bloom, 2003) in the current thesis I take a different perspective. Instead of a top-down perspective instigated by the one or the other theoretical perspective, I take a bottom-up approach to moral judgments, decisions, and behaviors. That is, adopting a situated perspective I will carefully analyze in my studies with what situations people are confronted when responding to moral issues studied in earlier research endeavors on this topic (e.g., Greene et al., 2001; Greene, Nystrom, Engell, Darley, & Cohen, 2004; Haidt, 2001; Thomson, 1976, 1986; Van den Bos, Müller, & Van Bussel, 2009). This careful analysis is needed, because the variation in used situations when doing research into morality may need attention when developing studies, as well as when interpreting the research findings following this variation in used

situations (Monin, Pizarro, & Beer, 2007).

More generally, when analyzing moral situations it can be noticed that moral judgments, decisions, and behaviors often are malleable, because it is not quite clear what the right course of action is. That is, the direction of the moral compass depends on the specific situation individuals are in, whereby people sometimes are not very consistent regarding their responses to moral issues. Following this, in the current thesis I argue that because in moral situations it is not always clear what the right course of action is, these situations frequently can be perceived as being ambiguous. As a result of this ambiguity, moral judgments, decisions, and behavior can be influenced by information that is temporarily available to an individual, activated by different kinds of situational and contextual cues. So, instead of taking a top-down perspective starting from either a rationalist or an intuitionist theoretical perspective, I take a bottom-up approach by analyzing what kind of situations individuals face when confronted with moral issues. This situational perspective also contrasts with most psychological theories of morality sharing the assumption that morality lives within the individual (Darley, 1993). Furthermore, the current thesis introduces the human body as a novel bottom-up approach which can influence responses towards moral issues. In morally dilemmatic situations, such as moral and bystander dilemmas, body postures could change the way moral issues are represented. Specifically, I will propose that the willingness to intervene in morally dilemmatic situations even depends on which specific body posture people adopt. Thus, I will argue, for example, that a constricted posture representing embodied powerlessness or an expanded body posture representing embodied power will affect responses to moral dilemmas and actual behavior in bystander situations, supporting the notion that responses towards important moral and societal issues are malleable.

In the following sections I will discuss the relation between malleability, ambiguity, and available knowledge. Following this, I will introduce my three empirical chapters that all will examine the general notion of the influence of temporarily available knowledge on moral

and societal issues. My empirical examination of these issues will start with assimilation and contrast effects pertaining to moral judgments (Chapter 2). This will be followed by a goal theory perspective on the difference in salience of conflicting moral principles in moral decision-making situations (Chapter 3). And finally I will examine the influence of embodied cognition on the willingness to intervene and actual helping behavior in morally dilemmatic situations, such as moral and bystander dilemmas (Chapter 4).

### **Morality and Malleability**

In general, moral judgments, decisions, and behavior of individuals seem to be malleable. It does not seem to be an unreasonable notion, therefore, to propose that what people think is right or wrong depends on the specific situations people are in. Furthermore, people's responses to moral issues can change over time, whereby people are not very consistent regarding their responses to moral issues. Moreover, issues can enter and leave the moral domain, by processes of positive, negative, and neutral moralization influencing what people think is right or wrong (Rozin, 1999).

Illustrations from everyday life show the malleability of moral responses. For example, research in the United States has demonstrated that when people get older their sociopolitical attitudes regarding social economic and racial equality, crime, civil rights, the environment, and marital status shift towards increased tolerance, as opposed to increased conservatism (Danigelis, Hardy, & Cutler, 2007).<sup>1,4</sup> In other words, how people think about moral issues in sociopolitical terms changes with aging. In a contradictory vein, it can be argued that in the earlier stages of radicalization (e.g., leftwing, rightwing and Muslim extremism) people find some responses (e.g., violence or terrorism) immoral, but in later phases accept more violent tactics, thus judging these extreme responses as less immoral (Hogg, 2004; Van den Bos, Loseman, & Doosje, 2009). Furthermore, some people oppose gay marriage, homosexuality, and abortion, but are comfortable with and even support a (according to

the standards of international law) highly controversial war, or cutting taxes for the rich and simultaneously cutting benefits for the poor, and do not seem to care much about mother nature (Haidt & Graham, 2007). Additionally, people in some situations violate moral principles that they hold dearly back home, as evidenced, for example, by past behavior from the prison guards in Abu Ghraib (Fiske, Harris, & Cuddy, 2004). And finally, historically speaking, the bombing of London, Coventry, and other cities such as Rotterdam during World War II are seen as crimes of war by many in the allied world (Mak, 2004). On the other hand, the bombings of Dresden and other German cities by the allies at the end of the WWII killing and severely wounding hundreds of thousands German civilians not being close to any strategic target, were marked by the same allied world as a means to end the war and bring peace (Friedrich, 2006; Mak, 2004).

Many empirical studies support the malleability of moral judgments, decisions, and behavior. Research has shown that people are very well capable of abandoning moral principles in one situation to act on them with determination in another (Aquino, Freeman, Reed II, Lim, & Felps, 2009; Graham, Haidt, & Nosek, 2009; Haidt & Graham, 2007). In other words, moral principles can be seen as strong opinions weakly held (Baron, 2002; Baron & Leshner, 2000; Baron & Spranca, 1997; Ritov & Baron, 1999). Furthermore, even virtuous persons sometimes violate treasured moral standards (Bandura, 1999; Fiske et al., 2004; Milgram, 1974). For instance, Darley and Batson (1973) showed that seminary students were less likely to help an individual in need when participants were asked to hurry up by an experimenter. In other words, small time pressures present in a situation can severely constrain pro-social behavior. At the same time even the meanest of people display pro-social behaviors (Aquino et al., 2009).

What we think is right or wrong also seems to depend on self-centered considerations and personal involvement (Epley & Caruso, 2004; Epley & Dunning, 2000; Messick, Bloom, Boldizar, & Samuelson, 1985; Messick & Sentis, 1983; Wijn & Van den Bos, 2010). For example, previous

research by Ham and Van den Bos (2008) demonstrated the influence of personal relevance of a situation on spontaneous justice inferences, and less so, albeit not significantly, on explicit justice judgments. The results indicated that people draw stronger spontaneous justice inferences (indicated by greater interference effects in a probe recognition paradigm) when confronted with descriptions of justice-implying events happening to themselves than to somebody else and to a friend than to a stranger (Ham & Van den Bos, 2008). The results constitute empirical evidence that personal relevance of justice-related events leads to the strongest spontaneous justice inferences.

Furthermore, negotiators are less likely to deceive their partners when the organization's ethical norms are emphasized but this behavior is not shown by negotiators when the ethical norms are not made salient (Aquino, 1998). In addition, research has shown that when harmful behavior can be rationalized people are especially likely to act in ways that are harmful to others, behaviors they do not show otherwise (e.g., Batson, Kobryniewicz, Dinnerstein, Kampf, & Wilson, 1997; Detert, Treviño, & Sweitzer, 2008; Mazar, Amir, & Ariely, 2008). Moreover, people rated moral violations that were processed with discrepant fluency as less morally wrong than those processed with discrepant disfluency (Laham, Alter, & Goodwin, 2009). Besides, research by Van den Bos (2003) shows that justice judgments can be influenced by the temporarily affective state people were in prior to forming these judgments, especially in information uncertain situations, but not in situations in which they were provided with unambiguous information and solid reference points.

In summary, this review suggests that judgments, decisions, and actions regarding morality can be malleable, thereby differing from situation to situation as a function of contextual cues. This malleability could result from incompatibilities between cognitions (e.g., "I have to hurry" versus "I have to help this person"), between cognitions and (conscious or unconscious) experiences (e.g., "I think this action is wrong" or "I experience fluency when reading about this behavior), or between cognitions and behavior, differences in personal relevance (e.g.,

“Not fair for me!” versus “Not fair for you”), as well as lack of information to confidently act regarding moral issues (Van den Bos & Lind, 2002; Van den Bos, in press), thereby contributing to the ambiguous nature of many moral situations.

### **Morality and Ambiguity**

When forming justice judgments or making decisions about morality people often are faced with informational uncertainty (Van den Bos, 2001, in press; Van den Bos & Lind, 2002). This observation is in line with work on human decision making revealing that human judgments are often formed under conditions of incomplete information (e.g., Kahneman, Slovic, & Tversky, 1982; Phelps, 1970; Tversky & Kahneman, 1974). This occurs either when a person confronts an inability to predict the future or when a person confronts incompatibilities between different cognitions, between cognitions and experiences, or between cognitions and behavior (Van den Bos & Lind, 2002). Furthermore, informational uncertainty involves having less information available than one ideally would like to have in order to be able to confidently form a given judgment (Van den Bos, 2001, 2009a; Van den Bos & Lind, 2002).

It is not uncommon that people typically lack information about moral issues leading to information uncertainty and ambiguity (Van den Bos, 1999, 2001; Van den Bos & Lind, 2002, 2009; Van den Bos, Lind, Vermunt, & Wilke, 1997; Van den Bos, Wilke, & Lind, 1998; Van den Bos, Wilke, Lind, & Vermunt, 1998). In addition, in many moral situations it is not quite clear what the right course of action is (Beauchamp, 2001; Greene et al., 2001; Van den Bos, 2003). The literature on morality tells us that many moral situations involve difficult decisions about what to do, because people have to choose between alternative actions with good reasons for each of the actions involved (e.g., Greene et al., 2001; Hauser, 2006; Killgore, Killgore, Day, Li, Kamimori, & Balkin, 2007). In other words, people have to choose between incompatible cognitions and options leading to feelings of uncertainty and ambiguity (Van den Bos, 2009a;

Van den Bos & Lind, 2002). Furthermore, recent research demonstrates that people often are in doubt what to do or how to judge moral situations (Greene et al., 2001; Hauser, 2006; Van den Bos, 2009a, in press; Van den Bos, Müller, Beudeker, Cramwinckel, Kumagai, Ruben, et al., 2010). For example, research on moral dilemmas shows that participants react slower when they approve of intervening in a specific moral dilemma that may involve informational uncertainty: the footbridge dilemma (Greene et al., 2001; Hauser, 2006; Koenigs, Young, Adolphs, Tranel, Cushman, Hauser, et al., 2008; Killgore et al., 2007). To the extent that these reaction times indicate that participants find it difficult to decide what to do, this suggests that moral situations are ambiguous. Put differently, these situations do not allow participants to give a definite answer because alternative and discrepant interpretations are possible, leading to incompatibilities and therefore to the ambiguous nature of moral issues (Van den Bos, 2009a, in press; Van den Bos & Lind, 2002; Van Hiel & Mervielde, 2002).

Thus, it can be argued that some ambiguity regarding how to respond in moral situations and what the right course of action is exists in many situations. In the current thesis I propose that, because of the ambiguous nature of many moral issues, many judgments, decisions, and behaviors towards these issues may be susceptible to the influence of temporarily available knowledge.

### **Morality and Accessible Knowledge**

In daily life people encounter many situations in which they have to make moral judgments, decisions or have to act upon moral issues. Often the information people have to rely on when responding is ambiguous and incomplete (Griffin & Ross, 1991). For example, moral dilemmas are conflicts between moral principles where people have to decide which rule is more applicable (Kurtines, 1986). In Milgram's (1974) classical study people have to decide whether they obey to an authority or follow their own moral compass. In other words, they have to decide whether the principle of obedience or the principle of do no harm is more suitable

for the current situation. Put differently, moral dilemmas may activate different moral principles. Related to this observation, which principle people use when solving a moral dilemma is unclear. Modern social psychology can help in answering this question.

Judgments and decisions with a high degree of uncertainty and ambiguity partly are a product of knowledge representations accessible to the perceiver at the time of responding (Epley, Waytz, & Cacioppo, 2007; Higgins, 1996; Kahneman, 2003). The proposition that ambiguity and the influence of accessible knowledge go together is supported by previous work suggesting that when situations are ambiguous knowledge that is cognitively most accessible in the situation at hand will guide how people react to and resolve such ambiguous situations (e.g., Bruner, 1957; Epley et al., 2007; Higgins & Bargh, 1987; Kay, Wheeler, Bargh, & Ross, 2004; Kruglanski & Freund, 1983; Kruglanski & Webster, 1991, 1996; Latané & Darley, 1968, 1970; Srull & Wyer, 1986; Stapel, Koomen, & Van der Pligt, 1997; Stapel & Marx, 2007; Van den Bos, 2003). This temporarily cognitively accessible information can range from, for example, trait concepts (e.g., friendly or hostile), social categories (e.g., professors or students), scripts (e.g., what to do when cooking a Christmas dinner for friends or skiing downhill a steep slope) to specific event memories (e.g., trips through Egypt, Morocco, South Africa, and Memphis), specific person exemplars (e.g., Nelson Mandela or Martin Luther King), norms (e.g., being silent in a library or etiquettes for a dinner in Karel V), physical objects (e.g., business materials like a business suit versus neutral materials such as a kite) and activated goals (e.g., looking for pleasure, getting your PhD) (Aarts & Dijksterhuis, 2003; Bargh, 2006; Kay et al., 2004; Martin, Strack, & Stapel, 2001; Stapel & Koomen, 2001). Furthermore, these concepts can be activated by various kinds of meaningful situational cues. In addition, in recent years a burgeoning literature has documented the influence of activated knowledge on all manner of responses (Bargh, 1997; Bargh & Chartrand, 1999) from basic functions such as walking speed (Bargh, Chen, & Burrows, 1996; Dijksterhuis et al., 1998) to seemingly higher level functions such as performance on general-knowledge tests (Dijksterhuis,

Spears, Postmes, Stapel, Koomen, Van Knippenberg, et al., 1998) and the ability to learn new information (Haddock, Macrae, & Fleck, 2002).

Thus, I argue that when responding to moral issues information often is incomplete, can be interpreted in alternative ways, cognitions are incompatible, and therefore it is not quite clear what the right course of action is. Furthermore, I propose that people refer to knowledge that is temporally available when confronted with ambiguous moral issues. People use this temporarily available knowledge to disambiguate the ambiguity, enabling them to make judgments, decisions, or act upon these issues. In other words, certain knowledge accessible prior to judgments, decisions, and behavior influences even these responses towards moral issues. In the present thesis, three chapters will be presented demonstrating that as a result of ambiguity, moral judgments, decisions, and behavior can be influenced by information that is temporarily available to an individual, activated by conceptually meaningful situational and contextual cues (Kay et al., 2004). In this way, the current thesis focuses on temporal available information consisting of abstract category or concrete exemplar information subsequently activating interpretation or comparison frames (Stapel et al., 1997), salient principles being part of a goal conflict (Kurtines, 1986), and embodied knowledge (Caporael, 1996; Glenberg, 1997; Glenberg & Robertson, 2000; Wilson, 2002) activated by body postures.

### **The Current Thesis**

Classical research on the activation of knowledge structures shows that when judging or evaluating ambiguous situations, this may result in assimilation (judgments and evaluations shift toward the activated knowledge) as well as contrast (judgments and evaluations shift away from the activated knowledge). The information people have to rely on when making evaluations often is ambiguous and incomplete (Griffin & Ross, 1991). Following this, in Chapter 2 I therefore argue that moral judgments are susceptible to the influence of available knowledge. According to the

social judgment literature, when an event that has to be judged is ambiguous and therefore requires interpretation, the information that is cognitively most accessible will influence the judgment (e.g., Higgins, 1989; Higgins, Rholes, & Jones, 1977; Sedikides & Skowronski, 1991; Stapel et al., 1997; Stapel & Marx, 2007; Wyer & Srull, 1989). Building and extending on the social judgment literature, as well as on recent insights into justice and morality, I propose that moral judgments may be influenced by this *knowledge accessibility effect* (Higgins, 1996; Sedikides & Skowronski, 1991; Stapel & Marx, 2007), thereby changing the evaluation of the same moral event depending on which knowledge is accessible. In Chapter 2, two studies are presented finding evidence for accessible knowledge activating interpretation and comparison frames affecting responses to moral issues.

Besides measuring the influence of available knowledge on moral judgments, in the current thesis I also show that temporarily activated knowledge can influence decisions with respect to how people try to solve moral dilemmas. Chapter 3 measures the influence of accessible knowledge to decisions within moral dilemmas and therefore to moral decision making. By demonstrating that the willingness to intervene in moral dilemmas is susceptible to the impact of available knowledge, my line of reasoning presented in this thesis is extended beyond the findings in Chapter 2 regarding moral judgments, to moral decision making. By doing so, Chapter 3 goes further than current models on morality that only capture the phenomenology and causal processes of moral judgment, but not of moral decision making (Haidt & Björklund, 2008b; Narvaez, 2008), thereby being an important supplement for our understanding of morality.

The literature on how people solve moral dilemmas often contrasts two philosophical frameworks: utilitarianism and deontology. Although some researchers have suggested that during decisions about moral dilemmas, both utilitarian as well as deontological principles are activated (Greene et al., 2004), there is little empirical research actually demonstrating this. However, what little empirical data there is regarding

the influence of these moral frameworks on how people solve moral dilemmas is not very strong (e.g., is based on correlational fMRI data; Greene et al., 2001). By operationalizing and manipulating the salience of utilitarian and deontological principles, Chapter 3 examines how people solve moral dilemmas in which utilitarian principles (more specifically the principle “Thou shalt save”) or deontological principles (more specifically the principle “Thou shalt not kill”) are in conflict. I propose that making a decision within certain moral dilemmas gives rise to the activation of both these conflicting principles. In Chapter 3, based on the idea that the conflict between utilitarian and deontological principles essentially is a goal conflict (Bargh & Gollwitzer, 1994; Kurtines, 1986), I argue that the most salient principle during the decision making process will influence how people solve moral dilemmas. Specifically, I will try to show that principles and goals within moral dilemmas can be made salient by presenting associated symbols as subtle situational cues, and that this subsequently can affect the willingness to intervene in moral dilemmas.

Most of today’s theorizing in social psychology builds on the notion of semantic networks comprised of cognitive representations of a certain concept (Bargh, et al., 1996; Carlston, 1994; Dijksterhuis & Bargh, 2001; Dijksterhuis, Spears, & Lépinasse, 2001; Smith, 1998). In other words, according to these amodal theories, the meaning of one concept is defined only by other associated concepts (Barsalou, 1999; Harnad, 1990; Schubert, Waldus, & Giessner, 2009; Searle, 1980). This results in cognitively elaborate representations of how people activate knowledge and represent concepts (Schubert, 2005). Little theorizing seems to adhere to the idea that representations are made up of concepts stripped of their perceptual qualities, or, in other words, result from embodied cognition (Schubert & Semin, 2009). According to theories on embodied cognition human functioning is not based on elaborate cognitive representations or semantic networks in which knowledge activation is a result of quasi-verbal nodes associated by links through which activation spreads (Schubert, 2005; Winkielman, Oberman, & Ramachandran,

2006). Theories on embodied cognition propose the possibility there is a simpler and more parsimonious path to knowledge activation based on simpler representations, namely the body's somatosensory system (Barsalou, 1999; Schubert et al., 2009; Winkielman et al., 2006). Chapter 4 focuses on the influence of accessible knowledge activated by embodied states, such as embodied power, on decisions within morally dilemmatic situations, more specifically moral and bystander dilemmas. A perspective in contrast with the idea that individuals rely on elaborate cognitive representations, or the rationalist weighing of options, consequences, and potential outcomes when reflecting on moral issues (Greene, 2005; Kohlberg, 1969; Winkielman et al., 2006; Van den Bos, 2008), but also in contrast to more classical theories on knowledge accessibility (Bargh, et al., 1996; Carlston, 1994; Dijksterhuis & Bargh, 2001; Dijksterhuis et al., 2001; Smith, 1998).

In Chapter 4, I propose that when confronted with situations in which it is difficult to decide what to do, such as moral and bystander dilemmas, people often feel inhibited to intervene. Weakening behavioral inhibition, therefore, should positively affect the willingness to intervene in these morally dilemmatic situations. Developing an embodied power perspective on interventions within moral and bystander dilemmas, and building on earlier research linking power to decreased behavioral inhibition, in Chapter 4 I hypothesize that body postures associated with power lead people to intervene more in these dilemmas without people noticing the influence of their postures on their behavior.

Following the three empirical chapters, in Chapter 5 I will discuss the findings of the current thesis and suggest ideas for future research regarding moral judgments, decisions, and behavior.

## Footnotes

<sup>1.1</sup>Barlaeus, C. (1967). *Mercator Sapiens*, Amsterdam: Universiteitsbibliotheek. (Original work published in 1632.)

<sup>1.2</sup>By the way, another “Illustere School”, the “Illustere School” of Utrecht, the precursor of Utrecht University, founded in 1632, chose as its motto: Sol justitiae illustra nos. This still is the motto of Utrecht University, thereby reflecting that since 1632 scholars at Utrecht found it important to express the idea that justice and morality is significant for an university, inter alia to educate young people (e.g., students) to become sincere, frank, honest, just, righteous, honorable, true-hearted, and incorruptible citizens.

<sup>1.3</sup>According to Haidt and Kesebir (in press) concerns about fairness, inequality and justice are one of the psychological foundations used by cultures to create moral systems. The concepts of justice and morality are closely connected, whereby justice can be seen as part of the overarching concept of morality (Cohen, 1986; DeScioli & Kurzban, 2009; Graham, Haidt, & Nosek, 2009; Haidt, 2007; Haidt & Graham, 2007; Haidt, Graham, & Joseph, 2009; Haidt & Joseph, 2004).

<sup>1.4</sup>The data mentioned are counterintuitive to a famous – anonymous – expression (wrongly assigned to Sir Winston Churchill), stating that: “If you’re not a liberal (or socialist) when you’re 25, you have no heart. If you’re not a conservative by the time you’re 35, you have no brain.” To the best of my knowledge I could not find empirical data supporting this statement.

# Chapter 2

## Assimilation and Contrast Effects in Moral Judgments: Why Lady Justice and Mother Teresa Have Different Effects on What You Think Is Right or Wrong

*What makes people judge ambiguous moral issues as more moral: looking at Lady Justice or Mother Teresa? Building and extending on the social judgment literature, as well as recent insights into morality, two studies examine the influence of temporarily accessible knowledge on moral judgments. Study 1 shows that exposing individuals to an abstract symbol of morality (e.g., Lady Justice) results in interpreting an ambiguous situation in more moral terms, thereby leading to the assimilation of judgments towards the meaning of the symbol. Study 2 replicates these assimilation effects but also demonstrates contrasting judgments. After exposure to concrete moral exemplars (e.g., Mother Teresa), participants compared an ambiguous stimulus person with these moral exemplars and hence the stimulus person was considered to be less moral, as opposed to presenting immoral exemplars (e.g., Bin Laden). Taken together, our findings suggest that a difference in contextual information changes how people judge the world in morally-related terms.*

This chapter is based on Broeders, R., Van den Bos, K., & Ham, J. (2010). *Assimilation and contrast effects in moral judgments: Why Lady Justice and Mother Teresa have different effects on what you think is right or wrong*. Manuscript submitted for publication.



In daily life people encounter many situations in which they have to make moral evaluations, for instance of a person or an organization. The information people have to rely on when making these evaluations often is ambiguous and incomplete (Griffin & Ross, 1991). For example, what to think of an organization like Shell that persisted in doing business during the Apartheid regime in South Africa? Is this an immoral organization because it did business in a highly discriminatory society or a moral organization because it offered jobs, chances, and income to a discriminated part of the South African population? Or how to judge fishermen highly dependent on catching fish to take care of their families whilst fish species are becoming extinct thereby threatening the earth's natural resources and employment for future generations of fishermen? Are these fishermen immoral because they threaten the earth's natural resources and the welfare of future generations, or do they act morally because they take care of their families? The focus of the present research is on how people form moral judgments when relying on information that can be interpreted in alternative ways. According to the social judgment literature, when an event that has to be judged is ambiguous and therefore requires interpretation, the information that is cognitively most accessible will influence the judgment (Higgins, 1996; Sedikides & Skowronski, 1991; Stapel & Marx, 2007). In line with this literature, we propose that moral judgments may be influenced by this knowledge accessibility effect, thereby changing the evaluation of the same moral event depending on which knowledge is accessible.

Research into how people form their moral judgments is important because morality can be seen as a code of conduct put forward by any specific group or society, to make people cooperate and relate to each other, hence making social life possible (Haidt, 2007, 2008; Haidt & Kesebir, in press; Narvaez, 2009; Turiel, 1983, 2006). Cooperative behaviors such as these are not only necessary to make social life possible, but also to solve the great problems of our time, like for example the current environmental crises, ethno-political conflict, genocide, terrorism, overpopulation, migration, refugees, and nuclear proliferation (Greene, 2002; Narvaez,

2009). People's judgments and evaluations of these problems differ because people have different conceptions of what is right and wrong (Greene, 2002; Narvaez, 2009). Illustrating this, how people make sense of the ethical necessity of war could influence their actions and opinions and thus could have severe consequences for instance on their support for the war. Research already has hinted on this possibility by showing the subtle influence of temporarily cognitive accessible information on ratings of a general type of strategy, appeasement or intervention, that should be followed to end an international crisis (Gilovich, 1981), and the outcome and legitimacy of intervention during the Iraq War (Stapel & Marx, 2007). However, although this research has a strong ethical component, the dependent variables used were not specific moral judgments. Because solving the great problems of our time involves judgments on morality (Greene, 2002; Narvaez, 2009), investigating how people form judgments on what is right or wrong is a first step towards solving humanity's current problems and signals the importance of research into moral judgments (Haidt, 2008; Narvaez, 2009).

### **The Knowledge Accessibility Effect**

Building on and extending the social judgment literature (e.g., Stapel et al., 1997), the current paper argues that the moral judgment process may be influenced by knowledge accessibility effects. When people have to judge ambiguous situations or events that can be interpreted in alternative ways, information that is cognitively most accessible will influence their judgment (Higgins, 1989; Higgins et al., 1977; Sedikides & Skowronski, 1991; Stapel et al., 1997; Stapel & Marx, 2007; Wyer & Srull, 1989). This temporarily cognitively accessible information can change the direction of social judgments leading to either assimilation or contrast effects (Stapel et al., 1997). That is, temporarily activated information can either be used as an interpretation frame when abstract concept information is accessible, or as a comparison standard when concrete exemplar information is available (Stapel et al., 1997). Explaining this, Stapel and colleagues (1997)

proposed that when abstract concepts (e.g., the traits friendly or hostile) are temporarily cognitively available, these concepts have no clear object boundaries and therefore lack distinctness. Because abstract information (e.g., the abstract trait concept “friendly” or “hostile”) lacks distinctness this information is used for interpretation, resulting in the *assimilation* of judgments towards the accessible concept (Stapel, 2007). For example, assimilation can result in evaluating the ambiguous behavior of another person as more friendly (in case of priming with the concept friendly) or more hostile (in case of priming with the concept hostile). In other words, assimilation means a positive relation between the implications of some piece of information and the judgment to be made (Bless, Schwartz, & Wänke, 2003). Likewise, assimilation can be described as a situation in which judgments are “pulled” like a magnet towards the meaning of the abstract context information (Suls & Wheeler, 2007). So, abstract category information leads to assimilation effects.

The opposite is true for concrete person exemplar information. Concrete person exemplar information that is temporarily accessible will be used as a comparison standard leading to contrasting judgments (Stapel et al., 1997; Stapel, 2007; Stapel & Marx, 2007). Person exemplars (e.g., the friendly Aladdin or hostile Mike Tyson) constitute a distinct and separate entity with relatively clear object boundaries and therefore are used as a comparison standard (Stapel et al., 1997; Stapel, 2007; Stapel & Marx, 2007). Comparing the ambiguous behavior of a person with concrete person exemplar information results in contrasting judgments and evaluations, especially when the activated person exemplar information is extreme (Stapel et al., 1997; Stapel, 2007; Stapel & Marx, 2007). As a result, ambiguous behavior of people will be judged to be less friendly following the Aladdin exemplar and less hostile following the presentation of the Mike Tyson exemplar. After all, people are easily less friendly than Aladdin and less hostile than Mike Tyson. In other words, contrast effects indicate a negative relation between the implications of some piece of information and the judgments to be made (Bless et al., 2003). Contrast refers to situations in which judgments are repelled

and “pushed” away from a contextual information or standard (Suls & Wheeler, 2007).

### **Moral Judgment and Decision Making**

In many moral situations it is not quite clear what the right course of action is (Beauchamp, 2001; Greene et al., 2001). Recent research shows that people often are in doubt what to do or how to judge these dilemmas (Greene et al., 2001; Hauser, 2006; Van den Bos, in press; Van den Bos et al., 2010). For example, research on moral dilemmas shows that participants react slower when they approve of intervening in a specific moral dilemma: the footbridge dilemma (Greene et al., 2001; Hauser, 2006; Koenigs et al., 2008). To the extent that in this particular research these reaction times indicate that participants find it difficult to decide what to do, this suggests that moral situations are ambiguous. In other words, at least in some moral dilemmas there is at least some ambiguity regarding how to respond and what the right course of action is in the dilemma at hand. If this is true, then it should be the case that knowledge accessibility effects (both assimilation and contrast effects) should be found on moral judgments, dependent on conditions reliably identified in the social judgment literature (Stapel et al., 1997). When abstract information is accessible moral judgments will assimilate towards the meaning of the information. On the other hand, when concrete person exemplar information is accessible, moral judgments will contrast away from the activated moral standard.

Thus far, the debate regarding moral judgments has largely been dominated by the intuition against reason controversy (Cushman, Young, & Hauser, 2006; Greene et al., 2001; Greene et al., 2004; Haidt, 2001; see also Ham & Van den Bos, 2010; Monin et al., 2007; Moore, Clark, & Kane, 2008; Nichols & Mallon, 2006; Pizarro & Bloom, 2003). Basically, one perspective states that (affective-laden) intuitions determine moral judgments (e.g., Haidt, 2001, 2007, 2008; Haidt & Björklund, 2008a), while the other perspective argues that higher-order reasoning plays the

primary causal role of moral judgment (e.g., Pizarro & Bloom, 2003). Although the two sides in this debate have different opinions about what has the decisive effect on moral judgments (intuition or reasoning processes), both more or less agree on where these processes reside: within the individual.

Haidt (2001, 2008) describes moral intuition as sudden appearances in consciousness of an evaluative feeling (good-bad, like-dislike) about the character or actions of a person, without any conscious awareness of having gone through the steps of conscious deliberation. According to Haidt (2001, 2008) people do not search for and weigh evidence. People do not infer a conclusion based on this evidence. Haidt and colleagues refer to moral intuitions as corresponding with what Hume (1960/1777) called the “finer internal sense” of morals. In their opinion evolution has prepared the human brain to learn a culture’s moral foundations in childhood, resulting in finely tuned intuitive reactions to moral issues (Haidt & Björklund, 2008b).

Rationalists state that when reflecting on moral issues individuals rely on moral deliberation and the weighing of options, the consideration of consequences and potential outcomes (Kant, 1785/1959; Narvaez, 2009; Pizarro & Bloom, 2003). Individuals base their judgments on moral reasoning involving conscious, language-based thinking (Kohlberg et al., 1983). Among rationalists, the consensus is that morality lives in the *individual* mind as a set of knowledge structures about moral standards created from childhood onwards in the course of everyday reasoning (Darley, 1993). Even the social intuitionist model speaks of “an inner dialogue with oneself” regarding the private reflection link of this model (Haidt & Björklund, 2008). Therefore, it has been suggested that reasoning on moral issues resembles an internalized process (Beauchamp & Childress, 1994; Gert, 2005). Summarizing, both intuitionist and rationalist approaches towards moral judgment have different perspectives about what determines moral judgments. More important for the current research, both approaches agree on where these processes take place and come from: within the individual.

Contrasting the intuitionist and rationalist perspective we state that not only processes inside the individual (intuitions, deliberation), but also factors outside the individual (e.g., contextual cues) can influence how people perceive and evaluate the morality of an event. Following the well-founded finding that life is not lived in a social vacuum and therefore few judgments are truly context free (Stapel & Suls, 2007), the current research postulates that moral judgments can be influenced by information that is temporarily cognitively accessible within the ambiguous judgment context. Take for example the famous research by Milgram (1974). Based on the results of Milgram's research findings we do not know whether participants had intuitions or deliberated about their moral stance. What we do know is that even if they had intuitive feelings or deliberated about their moral stance, this was overruled by the presence of an authoritative figure influencing participants in their perception of the situation. Therefore, the current research proposes that different contextual information can change how individuals evaluate the ambiguous world in moral-related terms, subsequently leading to either assimilation or contrast of the moral judgment, thereby changing how individuals evaluate the same situation in morally-related terms.

Research in the realm of justice judgments has shown that assimilation and contrast effects are possible. For example, Markovsky (1988) showed that evaluating the fairness of rewards is affected by presenting unrelated numerical anchors to people just before the evaluation was made, resulting in assimilation to and contrast away from the anchor. Research by Van den Bos (2002) on the fair process effect shows that when receiving an outcome the evaluation of the fairness of this outcome normally assimilates towards the experienced procedural fairness. In addition, Nelson and Norton (2005) showed that priming participants with a helpful category (e.g., superheroes) elicited increased volunteering, whereas priming with a concrete exemplar (e.g., Superman) of the category helping, resulted in less volunteering to donate blood or help tutoring first year students. In other words, context information influenced altruistic behaviors, such as helping others. Furthermore,

Markman, Mizoguchi, and McMullen (2008) have found that downward counterfactuals elicited lower ethical standards regarding how the US should treat prisoners of war in the future (assimilation), whereas affective measures (moral outrage) contrasted after participants thought about “it could have been worse under Saddam Hussein”. Participants subsequently felt better about what happened at Abu Ghraib.

We argue that in all studies reviewed here, certain knowledge was accessible prior to participants forming their judgments. This prior knowledge subsequently influenced the direction of the judgments leading either to assimilation or contrast effects. It is striking that none of the papers reviewed have investigated the influence of the knowledge accessibility effect in a systematic way, neither using the methodology proposed by Stapel and colleagues (1997), but also not regarding moral judgments. The present research tries to fill this void by measuring the knowledge accessibility effect using the methodology of Stapel and colleagues (1997) on moral judgments.

### **The Current Research**

The present research examines the influence of prior activated knowledge on moral judgments. That is, responses to moral issues often are done in impoverished and ambiguous situations. Therefore in many moral situations it is not quite clear what the right course of action is (Beauchamp, 2001; Greene et al., 2001). The literature on knowledge accessibility effects indicates, that when judging ambiguous situations, knowledge that is cognitively most accessible during the decision making process will influence people’s judgments (e.g., Higgins, 1989; Stapel et al., 1997; Stapel, & Marx, 2007; Wyer & Srull, 1989). In line with the literature on social judgment we propose that how a person makes moral judgments is, at least partly, a function of the kind of information accessible during the impression formation process. Two studies are presented examining the influence of the knowledge accessibility effect leading to either assimilation or contrast of moral judgments. In the current research

we propose that a difference in contextual information can change how individuals evaluate the same situation in morally-related terms. More specifically, when an abstract trait concept such as immorality or morality is accessible, the context information is used as an interpretation frame resulting in assimilation of moral judgments. When the accessible information is a concrete immoral or moral exemplar, the information is used as a comparison standard resulting in contrast of moral judgments.

### Study 2.1

According to Haidt (2001) morality involves more complex social stimuli than the simple words and visual objects used in studies on automatic evaluation. Therefore, in the current studies we presented different stimulus materials than normally used in the social judgment literature. In the current set of studies we use stimulus material that represents and summarizes abstract and complex ideas: symbols. Symbols reinforce abstract and complex ideas in an immediate way and make the defining point of an idea immediately salient (Carlston & Mae, 2007; Greenberg, Porteus, Simon, Pyszczynski, & Solomon, 1995; Hassin, Ferguson, Shidlovski, & Gross, 2007; Langer, 1942; Ortner, 1973; Weisbuch-Remington, Mendes, Seery, & Blasovich, 2005). In other words, symbols have the ability to automatically activate abstract conceptions that are associated with the given object by drawing together important, abstract, and complex beliefs in an immediate manner (Carlston & Mae, 2007; Hassin et al., 2007; Langer, 1942; Weisbuch-Remington et al., 2005). Furthermore, symbols play an important function in human conduct (Hassin et al., 2007). By using symbols from everyday life, we extend current methodology regarding social judgment research to real life (Stapel & Marx, 2007).

Research by Karremans and Van Lange (2005) showed that the abstract concept of justice temporarily becomes cognitively accessible after exposure to the abstract symbol of Lady Justice. In their paper an image of Lady Justice was placed as a watermark at the background of

a questionnaire measuring the extent of forgiveness of participants. The results show that when exposed to the watermark of Lady Justice, participants were more willing to forgive another person than participants not exposed to this prime. It is our opinion that the results of Karremans and Van Lange (2005) can be interpreted as an assimilation effect, because Lady Justice is widely known for its abstract symbolism regarding the concept of justice (Karremans & Van Lange, 2005). According to Haidt and Kesebir (in press) concerns about fairness, inequality and justice are one of the psychological foundations used by cultures to create moral systems. The concepts of justice and morality are closely connected, whereby justice can be seen as part of the overarching concept of morality (Cohen, 1986; Graham et al., 2009; Haidt, 2007; Haidt & Graham, 2007; Haidt, Graham, & Joseph, 2009; Haidt & Joseph, 2004). In other words, Lady Justice can also be seen as an abstract symbol of morality.

Building on this research, in Study 2.1, we tested whether individuals who were exposed to a moral symbol (the prime in our experimental condition) would evaluate the ambiguous behavior of a target person (Michael) as more moral than individuals who were exposed to a prime not related to morality (control condition) or who were not primed with a symbol (neutral condition).

*Participants and design.* One hundred and forty-four students (29 men, 115 women) at Utrecht University participated in the experiment and were either paid or received course credits for participation. Mean age of the participants was 20 years and 6 months ( $SD = 3$  years and 9 months). They were randomly assigned to one of three conditions (background: Lady Justice prime vs. control prime vs. no prime).

*Experimental procedure.* On arrival at the laboratory, participants were led to separate cubicles and were told that they would participate in several studies. Identically to Karremans and Van Lange (2005) in the experimental condition we used the image of Lady Justice as a watermark on the background of the sheets of paper utilized for data collection. For participants in the experimental condition this watermark was placed behind the text describing the scenario and the questions they had to

answer. For participants in the control condition a comparable watermark was visible on each sheet of paper. The prime in the control condition was an altered version of the original image of Lady Justice. We removed the sword, the balance and the blindfold of the original image of Lady Justice. Furthermore, we altered the body posture of the original image by changing the position of the arm of the Lady. Instead of a lifted arm, which in the original image is used to carry the balance, we changed the position in such a way that it looked like the arm was hanging parallel to the body. For participants in the neutral condition, only sheets of paper were used that did not contain a watermark in the background.

The dilemma we used was an adaptation of a moral dilemma used by Greene et al. (2004). This description was placed between information taken from scenarios used by Bargh, Bond, Lombardi, and Tota (1986) as well as Stapel and Schwartz (1998). Participants read the following:

*Michael was talking to his friends, including his friend Rick. The conversation was very lively. Michael told his friends about a dating adventure. He and a friend went to a party recently. Because it was very crowded at the party they lost sight of each other. When Michael finally caught up with his friend, his friend was trying to decide whether to introduce himself to a beautiful girl. Michael explained that his friend had asked him what he should say to introduce himself successfully to the girl. However, by this time, there were so many other men around the beautiful girl that his friend just gave up. The conversation between the friends babbled on. Michael told about the business he owned and how he was trying to make ends meet. Chances were that his business had to file for bankruptcy. Also, Michael expressed that he was not qualified for social security because he had been working for less than three years. Financially he would drop to a level which was under supplementary benefit level when he would go bankrupt. Michael could avoid this situation*

*by cheating on his taxes and pretending that personal expenses were business expenses. Michael decided among other things to claim the acquisition of his expensive private music center and dinners with girlfriends in very expensive restaurants as business expenses. The tax authorities accepted this and Michael's business survived, although it did cost the government a lot of tax money which could have been invested in health care, effective measures on a more sustainable environment or education. The conversation changed to girls again, and various members of the group told about their more exciting dates. Michael's friend Rick listened for a while and then chimed in with a made-up story about a "fantastic evening" of his own. When Rick was finished one fellow turned to Michael and asked him, "Did this really happen, or is your friend dreaming?" Michael knew the story was phony, but he covered his friend: "Yes, it's true; I remember that night well ...." Rick clearly appreciated Michael's lying to save him from embarrassment.*

After reading the scenario, participants were asked to indicate their evaluation of the main character in the scenario (Michael) on ten traits. Two of these traits were related to morality. With these items, participants were asked to evaluate how just (1 = *unjust*, 9 = *just*) and moral (1 = *immoral*, 9 = *moral*) they thought Michael to be. Participants answers to these two items were averaged to form a reliable moral judgment scale ( $r = .62$ ,  $p < .001$ ). The other eight items were unrelated to morality and were used as filler items. These items asked participants to evaluate how adventurous (1 = *reckless*, 9 = *adventurous*), self-assured (1 = *conceited*, 9 = *self-assured*), persistent (1 = *stubborn*, 9 = *persistent*), educated (1 = *superficial*, 9 = *educated*), funny (1 = *sarcastic*, 9 = *funny*), interested (1 = *interested*, 9 = *lazy*), conscious (1 = *negligent*, 9 = *conscious*) and friendly (1 = *unfriendly*, 9 = *friendly*) they thought Michael to be. Furthermore, participants completed a funneled debriefing task in order to check if they

had consciously perceived the watermark of Lady Justice (cf. Chartrand & Bargh, 1996). Participants were asked if they had any suspicion about the real purpose of this study, if they had noticed something out of the ordinary throughout reading the scenario and answering the questions, and if they thought their answers had been influenced by something else than their own opinion. None of the participants indicated having noticed the watermark in the background of the questionnaire, nor did they indicate any suspicion regarding the purpose of the experiment. Finally, participants were debriefed, paid, and thanked for their participation.

*Results.* An analysis of variance, in which we controlled for gender, with the morality scale as dependent variable and prime (Lady Justice prime, control prime, and no prime) as independent variable revealed an effect of our prime manipulation,  $F(2, 143) = 3.63, p < .03, \eta^2 = .05$ . Planned comparisons revealed that in the Lady Justice prime condition participants judged the stimulus person's behavior as more moral ( $M = 4.03, SD = 1.10$ ) than when they were exposed to a prime not related to morality in the control condition ( $M = 3.59, SD = 1.23$ ),  $F(1, 143) = 4.06, p < .05, \eta^2 = .03$ . Furthermore, participants in the Lady Justice prime condition judged the stimulus person's behavior as more moral ( $M = 4.03, SD = 1.10$ ) than participants who were not exposed to any prime in the background of the questionnaire ( $M = 3.42, SD = 1.12$ ),  $F(1, 143) = 6.59, p < .02, \eta^2 = .05$ . Moral judgments did not differ between the control condition and the neutral condition,  $F < 1$ . No significant effects were found on any of the filler items, all  $F$ s  $< 1$ . Thus, participants in the Lady Justice prime condition judged Michael as being more moral than those without the watermark of Lady Justice in the background, both the alternative watermark (control condition) as no watermark at all (neutral condition).

The results of Study 2.1 are promising in the sense that they support our hypothesis that different contextual information results in perceiving the same event different in moral terms. Before we drew strong conclusions, however, we wanted to replicate the results in a second experiment. Furthermore, because contextual information does not only

lead to assimilation of judgments, but also to contrasts, another goal of Study 2.2 was to find evidence for reliable and conceptually relevant contrast effects.

## Study 2.2

The results of Study 2.1 can be seen in terms of an assimilation effect, such that the evaluations of the stimulus person's behavior by participants confronted with the prime related to morality (Lady Justice) were pulled towards the context of the abstract meaning of the prime. Participants confronted with the prime related to morality judged the target person's behavior as more moral than in the other two conditions. In Study 2.2 we wanted to replicate this assimilation effect and, in addition, wanted to examine possible contrast effects regarding moral judgments. Therefore in Study 2.2 we tested whether an image of a moral or an immoral exemplar would alter moral judgments in the direction opposing the prime, and thus, whether it would cause a contrast effect (Stapel et al., 1997). In the current experiment, participants were first exposed either to concrete exemplars or abstract symbols of immorality or morality. After being exposed to the primes participants again had to judge a stimulus person's behavior on various traits, among which the critical ones were morally-related traits.

*Participants and design.* One hundred and twenty students (34 men, 86 women) at Utrecht University participated in the study and were paid or received course credits for participation. Mean age of the participants was 21 years and 5 months ( $SD = 2$  years and 8 months). Participants were randomly assigned to one of the conditions of a 2 (morality of prime: immoral vs. moral) x 2 (prime type: abstract symbols vs. concrete exemplars) factorial design.

*Stimulus material.* Before conducting Study 2.2, we pre-tested a large set of pictures on how they were perceived by 339 participants using 9-point scales on morally related dimensions, such as morality (1 = *immoral*, 9 = *moral*), fairness, (1 = *unfair*, 9 = *fair*), justice (1 = *unjust*,

9 = *just*), justified (1 = *unjustified*, 9 = *justified*), and evilness (1 = *evil*, 9 = *good*). In total, we tested 41 moral-concrete exemplars, 41 immoral-concrete exemplars, 54 moral-abstract symbols, and 56 immoral-abstract symbols. Of each subset, 15 images scoring either very low for both the immoral concrete exemplar and abstract symbol subset, or very high for both the moral concrete exemplar and abstract symbol subset, were selected as stimulus material to be used in Study 2. The analyses showed that participants had a different perception regarding the morality of immoral exemplars ( $M = 2.57, SD = 1.24$ ) than moral exemplars ( $M = 7.65, SD = 1.07$ ),  $F(1, 121) = 588.16, p < .001, \eta^2 = .83$ . Regarding the abstract symbols, we also found a difference in perception between immoral abstract symbols ( $M = 2.20, SD = 1.02$ ) and moral abstract symbols ( $M = 7.64, SD = 1.08$ ),  $F(1, 213) = 1446.11, p < .001, \eta^2 = .87$ . This means that for both the abstract symbols as well as the concrete exemplars the immoral pictures were seen as significantly more immoral than the moral pictures, whereas the moral pictures were seen as more moral than the immoral pictures.<sup>2,1</sup>

*Experimental procedure.* On arrival at the laboratory, participants were led to separate cubicles and were told that they would participate in several studies on the computer. When seated, the instructions informed participants that one of the studies was a media psychology task containing an image recognition task. The research on media psychology was used as a cover story. To make the cover story more credible participants had to answer 15 questions which checked their daily use of the media before they continued with the image recognition task, for example: “How often do you: use internet (1 = *daily*, 7 = *almost never*), read a newspaper (1 = *daily*, 7 = *almost never*), watch television (1 = *daily*, 7 = *almost never*), read books (1 = *less than a year*, 7 = *more than 25 a year*)?” We also checked for which book genres, Internet sites, television programs and newspapers were the participant’s favorite.

Next, participants were asked to participate in the image recognition task. The image recognition task was used to present the 15 images of either immoral or moral abstract symbols or concrete exemplars.

Participants were told that the images used in the image recognition task were images of persons or symbols which they could encounter in their daily use of different media. Participants were asked, to use photo terminology, to match the original photo with the corresponding negative version. The negatives were black and white grey scaled versions of the original pictures. The computer screen was divided in two halves. The bottom half of the screen presented the original pictures of either immoral or moral exemplars or symbols, while the upper half presented the corresponding negatives. The order of the original pictures at the bottom half of the screen differed from the order of the corresponding negatives at the upper half. By using the left mouse-button while moving the picture to its correct position at the upper half of the screen, participants could match the original pictures with the corresponding negatives. When there was a match the image in question was marked with a green frame indicating that the trial was correct. When participants made a mistake an error message appeared. Participants were allowed another trial. When participants had made 15 matches the experiment continued with an ostensible unrelated task. In this task they had to judge the scenario of Wouter.

The scenario we used was taken from Haidt, Koller, and Dia (1993) and adapted in such a way that Wouter was the main character of the scenario. Participants read:

*In front of his house the dog of Wouter and his family was killed by a car. Because Wouter had heard that dog meat was delicious, he decided to cut up the dog's body, to cook it and to eat it for dinner.*

After reading the scenario, participants were asked to evaluate the main character of the scenario, Wouter, on various traits using 9-point rating scales. Two of these traits were related to morality and were the same ones as used in Study 1. On these items, participants were asked to evaluate how just (1 = *unjust*, 9 = *just*) and moral (1 = *immoral*, 9 = *moral*) they thought

Wouter to be. Participants answers to these two items were averaged to form a reliable scale of moral judgments ( $r = .58, p < .001$ ). The other items were the same items as used in Study 1 and were used as filler items to cover the real purpose of the study. Furthermore, participants completed a funneled debriefing task in order to check if they had any suspicion about the real the study (cf. Chartrand & Bargh, 1996). None of the participants indicated any suspicion regarding the purpose of the experiment, nor did they relate the image recognition task to judging the scenario. Finally, participants were debriefed, paid, and thanked for their participation.

*Results.* A 2 x 2 ANOVA on the morality judgment scale in which we controlled for gender yielded a significant interaction effect,  $F(1, 119) = 5.78, p < .01, \eta^2 = .07$ . Neither main effects of morality of the prime,  $F < 1$ , nor prime type,  $F(1, 119) = 2.56, p > .11$ , were significant. To further investigate the significant interaction effect, we examined the appropriate simple main effects. This revealed that in the abstract symbol condition participants judged the stimulus person's behavior as more moral when they had been confronted with abstract moral symbols ( $M = 4.14, SD = 1.65$ ) than when they had been confronted with abstract immoral symbols ( $M = 3.50, SD = 1.41$ ),  $F(1, 119) = 4.03, p < .05, \eta^2 = .03$ . These results indicate assimilation, thereby replicating the findings of Study 2.1. In contrast, in the concrete exemplar condition the stimulus person's behavior was judged to be more moral when participants had been confronted with concrete immoral exemplars ( $M = 3.73, SD = 1.44$ ) than when they had been confronted with concrete moral exemplars ( $M = 2.97, SD = 1.20$ ),  $F(1, 119) = 4.27, p < .05, \eta^2 = .043$ . Thus, in addition to again obtaining evidence for assimilation effects, we also found significant contrast effects within the same experiment.

The results of Study 2.2 demonstrate that participant's ratings clearly show both assimilation and contrast effects in judging the stimulus person's behavior. In the abstract symbol condition, participants judged the stimulus person's behavior as more moral when they had been primed with abstract symbols of morality than when they had been primed with

abstract symbols of immorality. These results can be seen as a replication of the findings of Study 2.1. On the other hand, in the concrete exemplar condition the stimulus person's behavior was judged more moral when participants had been primed with concrete immoral exemplars than when they had been primed with concrete moral exemplars. So, in addition to finding an assimilation effect we also found a significant contrast effect in Study 2.2.

### **General Discussion**

Taken together, the present two studies find evidence for knowledge accessibility effects in response to moral issues. That is, following the line of reasoning presented here, Study 2.1 indeed shows that priming participants with a watermark of Lady Justice causes participants to judge an ambiguously described person as more moral than when they are not primed with Lady Justice. In other words, exposing individuals to an abstract symbol of morality lead people to interpret an ambiguous situation in more moral terms leading to the assimilation of moral judgments towards the meaning of the symbol. Extending this insight, Study 2.2 again shows assimilation effects such that presenting abstract moral symbols (e.g., Lady Justice) resulted in more moral judgments of an ambiguously described person than presenting abstract immoral symbols (e.g., a swastika). Furthermore, this study also demonstrated contrast effects: When concrete moral exemplars (e.g., Mother Teresa) were presented to participants, they compared the ambiguous stimulus person with the immoral exemplar and hence the ambiguous stimulus person was considered to be less moral than when participants were exposed to concrete immoral exemplars (e.g., Bin Laden).

The results of the present research give more insight into how individuals form moral judgments thereby extending the literature on how moral judgments are formed. Within research on moral judgments little attention has been paid to the underlying processes of moral judgments (Van den Bos, 2003). The current research shows that judgments of ambiguous

moral situations can be influenced by the knowledge accessibility effect. That is, knowledge that is temporarily most accessible during the decision making process influences how people judge an ambiguous moral issue. This temporarily cognitively accessible information can be made salient by means of contextual cues associated with the accessible knowledge. The accessible context information either is used as an interpretation frame, when abstract trait concepts are accessible, or as a comparison standard, when concrete person exemplar information is accessible. Which frame is used influences the direction of moral judgments and leads either to assimilation or contrast of moral judgments. Our results correspond to the perspective on moral judgments, such as justice judgments, as social psychological phenomena that are influenced by all kinds of subjective factors (Van den Bos, 2003). Altogether, the assimilation and contrast of moral judgments suggests that moral judgments may be influenced by the knowledge accessibility effect, thereby changing the evaluation of the *same* moral event.

The influence of the knowledge accessibility effect resulting from contextual information adds a new perspective to understanding how moral judgments are formed. Moral judgments are not only influenced by internal processes, such as intuitions (Haidt, 2001) and moral reasoning (Beauchamp & Childress, 1994), but could also be influenced by external factors, that is contextual cues. Not being made in a social vacuum, external factors, such as contextual information seem to influence moral judgments, whereby contextual cues that activate abstract information lead to assimilation and contextual cues that activate concrete exemplar information lead to contrast of moral judgments. In addition, the current research shows that sometimes moral judgments are not very stable. Depending on which contextual information is accessible, that is abstract information or concrete exemplar information, can change how individuals evaluate the same moral issue.

In the social judgment literature several theories explain assimilation and contrast effects (Markman & McMullen, 2003; Mussweiler, 2003; Schwarz & Bless, 1992). It was not the goal of the current research to

provide evidence either for or against one of these models. The only aim of the current research was to demonstrate that when moral judgments are not made in a social vacuum, they can be influenced by accessible knowledge subtly activated by the context in which the judgment is made. A perspective that current models on moral judgment do not seriously pay attention to (Haidt, 2001; Haidt & Björklund, 2008a; Pizarro & Bloom, 2003). Current perspectives on morality state that either intuitions (e.g., Haidt, 2001, 2008; Haidt & Björklund, 2008a) or reasoning (e.g., Narvaez, 2009; Pizarro & Bloom, 2003) determine moral judgments, whereby both claim that these processes reside within the individual. The current data show that when a moral event is ambiguous and requires interpretation, contextually activated information influences moral judgments. That is, factors outside the individual can influence moral judgments. So, it may be only conscious deliberation or fast intuitive processes or a combination of both, but also a matter of contextually activated knowledge when people are confronted with ambiguous moral issues.

In the current set of studies we introduced new manipulations of prime type: images of abstract symbols vs. concrete exemplars. Instead of using words as stimulus materials we used pictures of immoral and moral concrete exemplars and abstract symbols. Using pictures of abstract immoral and moral symbols is an extension of the stimulus material normally used in social judgment research. Substituting abstract trait categories with abstract symbols we also found assimilation effects. Playing an important function in human conduct (Hassin et al., 2007) and being able to summarize complex ideas, abstract symbols are suitable to represent the complex idea of morality (Haidt, 2001). By using pictures of concrete exemplars and abstract symbols we add a new dimension to the methodology used in social judgment research, because 'the environment' in social psychological research does not only consist of words (Holland, Hendriks, & Aarts, 2005). By this means we add more ecologically valid stimulus materials to the current methodology of social judgment research.

The results of the present research give more insight into how

individuals form moral judgments, but also can be seen as an extension of the social judgment literature. Morality can be seen as a code of conduct put forward by any specific group or society, to make people cooperate and relate to each other, hence making social life possible (e.g., Haidt, 2007, 2008; Haidt & Kesebir, in press; Narvaez, 2009). Cooperative behaviors such as these are not only necessary to make social life possible, but also to solve the great problems of our time, for example the current environmental crises or ethno-political conflict (Greene, 2002; Narvaez, 2009). However, people's judgments and evaluations of these problems differ because people have a different conception of what is right or wrong (Greene, 2002; Narvaez, 2009). Apparently, judgments that are that important for coordinating social life and solving humanity's current problems are influenced by knowledge accessibility effects. The processes that explain more trivial judgments (e.g., is somebody friendly or hostile), also seem to count for judgments that potentially can have a big impact on human lives and society and that thus far sporadically have been the subject of assimilation or contrast research.

Future research regarding assimilation and contrast effects within moral judgments could focus on the downstream consequences of these effects. For example, do assimilative or contrastive judgments subsequently influence behavior regarding the person being judged? Does an individual treat a person in less moral ways, or is the person being excluded or avoided after having been judged as immoral? What happens after a person has been judged moral? That is, does behavior of an individual, after having made an assimilative or contrastive judgment, also assimilate towards or contrast away from the activated knowledge? Investigating the downstream consequences of assimilative and contrastive moral judgments would fit with recent calls for social judgment research to focus on the motivational and behavioral consequences of context effects (Markman, Ratcliff, Mizoguchi, Elizaga, & McMullen, 2007; Martin & Shirk, 2007).

Taken together, the assimilation and contrast effects on moral judgments reported here suggest that different temporarily accessible

contextual information can change how individuals evaluate the same event in morally-related terms. On a final note it is worth mentioning that Mother Teresa once said that: “If you judge people, you have no time to love them.” Things become even worse though if you judge people after having been faced with Mother Teresa. Besides having no time to love them, you will judge them also as less moral.

## Footnote

<sup>2.1</sup>The specific images chosen for the moral exemplar condition of Study 2 were images of Anne Frank, Nelson Mandela, Zorro, His Royal Highness The Dalai Lama, Gandalf, Santa Claus (Dutch version), Mahatma Gandhi, Robin Hood (Walt Disney version), Bono (the lead singer of U2), the Virgin Mary, Peter Pan (Walt Disney version), Martin Luther King, Jesus, Superman, and Mother Teresa. The images used in the immoral exemplar condition were images of Slobodan Milosevic, Marc Dutroux (notorious Belgian serial rapist and killer), Adolf Hitler, Osama Bin Laden, Captain Hook (Walt Disney version), Mao, Cruella de Vil (Walt Disney version), Joseph Stalin, Scar (Walt Disney version), George W. Bush, Saddam Hussein, Lindsay England, The Joker (comic version), Augusto Pinochet, and Darth Vader. The moral abstract symbol condition contained images of the logo of the United Nations, Max Havelaar (Dutch Fair Trade brand), Superman, the World Wildlife Fund, the Dutch National Cancer Support, Unicef, Amnesty International, the International Red Cross, a symbol of Anti-racism, the international peace-sign, the symbol of Coexist (representing the peaceful coexistence of the three big religions in the world, that is Christianity, Islam, and Judaism), the Aids-ribbon, Lady Justice, a peace dove, and a voting ballot mark and pencil (representing democracy). The immoral abstract symbol condition of Study 2 did hold images of a picture of 9/ 11 (burning Twin Towers), a Nazi-swastika, an electric death penalty chair, a depersonalized prisoner of the Abu-Ghraib prison in Iraq, the sign for Islamic Jihad, the Berlin Wall, the symbol for the Ku Klux Klan (a burning cross), a Star of David (WW II anti-Semitic version), Auschwitz, an atomic bomb, the logo of Hezbollah, a sign that indicated “physically disabled not allowed”, the logo of the Palestinian Islamic Jihad Organization, the five pointed star of Satan, and a sign indicating Apartheid.

# Chapter 3

## Should I Save or Should I Not Kill? How People Solve Moral Dilemmas Depends on Which Framework is Most Salient

*The literature on how people solve moral dilemmas often contrasts two philosophical frameworks: utilitarianism and deontology. However, empirical data regarding the influence of these moral frameworks on how people solve moral dilemmas is lacking. The current paper examines how people solve moral dilemmas in which utilitarian principles (more specifically the principle “Thou shalt save”) or deontological principles (more specifically the principle “Thou shalt not kill”) are in conflict. We propose that making a decision within certain moral dilemmas gives rise to the activation of both these conflicting principles. Here, based on the idea that the conflict between utilitarian and deontological principles essentially is a goal conflict, we argue that the most salient principle during the decision making process will influence how people solve moral dilemmas. In correspondence with our line of reasoning, three studies demonstrate that the most salient principle during the decision making process influences the willingness to intervene within footbridge dilemmas. This effect is found even when the salience of these principles is induced subliminally.*

This chapter is based on Broeders, R., Van den Bos, K., Müller, P. A., & Ham, J. (2010). *Should I save or should I not kill? How people solve moral dilemmas depends on which framework is most salient*. Manuscript submitted for publication.



Rwanda, Srebrenica, Guantanamo Bay, the nuclear bombing of Hiroshima and Nagasaki, the War on Terror, the Milgram experiment, all are examples of situations in which individuals had to make a decision while different moral principles were in conflict. In some of these situations people even had to choose between sacrificing a few in order to save many other people. For example, regarding the massacre in Srebrenica during the Bosnian Serbian conflict in 1995, the United Nations were confronted with the dilemma of sacrificing the life of some (e.g. Serbian soldiers, Dutch military personnel) to save the lives of many Bosnian refugees. The same goes for the War on Terror. Here, decision makers are sometimes confronted with a choice between accepting some “collateral damage” when fighting high-level terrorist leaders, such as several lethal casualties amongst innocent civilians, to prevent terror attacks and hundreds of lethal casualties in the future. Basically, people in these dilemmas are confronted with the choice between saving many at the expense of a few. In other words, people in these dilemmas are faced with deciding between the conflicting principles “Thou shalt save” and “Thou shalt not kill”. How this conflict is solved is the focus of the present research. More specifically, we propose that the principle that is most salient during the decision making process (“Thou shalt save” or “Thou shalt not kill”) will primarily influence how people solve these moral dilemmas.

### **Conflicting Principles: Utilitarian and Deontological Principles**

The conflict between the utilitarian principle “Thou shalt save” and the deontological principle “Thou shalt not kill” is part of a controversy between two philosophical frameworks (Beauchamp, 2001). That is, utilitarianism and deontology are two positions in moral philosophy that judge the moral status of acts using different theoretical perspectives (Bartels, 2008).

Utilitarianism is a moral framework stating that the right act is the one producing the greatest outcome for the greatest number of people.

In this perspective, the appropriateness of an action is determined by the value or disvalue of consequences rather than by the acts that led to them (Mill, 1861/1998). Utilitarian moral judgments are aimed at maximizing benefits and minimizing costs for affected individuals by taking into account everybody's interest. Utilitarian choices are conducive for the greater good. In the moral dilemmas mentioned at the beginning of this paper, this means counting the number of lives saved by each alternative decision and choosing the alternative that produces the best overall outcome (Bartels, 2008). Put differently, the principle "Thou shalt save" (as many people as you can) is characteristic for the utilitarian framework (Bartels, 2008; Boroditsky & Prinz, 2008; Greene, 2007; Hauser, 2006; Ritov & Baron, 1999; Waldmann & Dieterich, 2007).

In contrast, deontology is a moral framework stating that there is a set of moral duties or obligations that people must honor regardless of the consequences. From a deontological perspective people have to examine whether specific features of actions meet certain moral rules that have to be respected. In other words, deontological principles constrain action, which means that some acts are prohibited, even when they result in a better outcome for the greater good (Bartels, 2008). From a deontological perspective these rights and duties are viewed as more important than utilitarian considerations (Kant, 1785/1959). Put differently and with respect to the aforementioned moral dilemmas, the deontological framework is characterized by the principle "Thou shalt not kill" (Bartels, 2008; Boroditsky & Prinz, 2008; Greene, 2007; Hauser, 2006; Ritov & Baron, 1999; Waldmann & Dieterich, 2007).

A moral dilemma that specifically incorporates the conflict between these two opposing moral principles is the footbridge dilemma (Thomson, 1986).<sup>3.1</sup> In this dilemma, people are asked to imagine standing next to another person on a footbridge that spans a railroad track. Furthermore, a runaway trolley is headed for five people who will not be able to leave the railroad track in time to avoid being overrun and killed by the trolley. People can prevent this from happening. The only possibility to save the five persons is to push the one person off the footbridge, onto the track

below. The trolley will crash into this person who as a result will die, but the person's body will slow down and stop the trolley before it reaches the five persons. Thus, in the footbridge dilemma the choice is between saving five persons at the expense of killing one person (Greene et al., 2001; Hauser, 2006). In this case both the utilitarian and deontological perspective are mutually exclusive because they cannot be satisfied at the same time (Tanner, Medin, & Iliev, 2008), resulting in a conflict (Greene et al., 2004; Hauser, 2006). Choosing to act for the greater good means breaking the moral duty to never kill a person, and vice versa.

How do people react in such dilemmatic situations and how do they decide what to do? Although some researchers have suggested that during decisions about moral dilemmas, both utilitarian as well as deontological principles are activated (Greene et al., 2004), there is little empirical research actually demonstrating this. Recent fMRI research by Greene and colleagues (2001, 2004) suggests that when individuals are confronted with footbridge dilemmas, there is a tension between cognitive and social-emotional processes at the neural level. The authors interpret this tension as a conflict between the utilitarian and deontological framework (Greene et al., 2004). However, this assumption is based on correlational fMRI data and cannot demonstrate a causal relationship between the activation of utilitarian and deontological principles and its effect on the solution of the footbridge dilemma. In other words, although this issue has been fiercely debated and the importance of manipulating the salience of utilitarian principles (e.g., "Thou shalt save") and deontological principles (e.g., "Thou shalt not kill") has been acknowledged (Bartels, 2008; Tanner et al., 2008; Waterman, 1988) previous research has not yet examined this systematically.

The present research tries to fill this void by manipulating the salience of the principles "Thou shalt save" and "Thou shalt not kill" when people have to make a decision about a moral dilemma and assesses the influence of utilitarian and deontological principles on the moral decision making process. Specifically, we propose that the principle that is most salient during the decision making process ("Thou shalt save" or "Thou

shalt not kill”) will influence how people solve moral dilemmas.

### **Solving the Conflict: Salience of Different Principles**

Whereas traditional analyses of moral dilemmas have primarily focused on cognitive or affective explanations (Greene & Haidt, 2002; Greene et al., 2001, 2004; Kohlberg, 1969) closer inspection of the matter suggests that footbridge dilemmas can also be seen as goal conflict situations (Bargh & Gollwitzer, 1994). That is, the saliency of a specific goal relative to the other goal (i.e., “Thou shalt not kill” vs. “Thou shalt save”) may influence how people make choices in footbridge dilemmas. Seeing moral principles as knowledge structures or mental representations of appropriate behavior that can guide behavior in certain situations, it can be argued that the environment can automatically direct normative behavior (see e.g., Aarts & Dijksterhuis, 2003).

From the goal literature we know that people will pursue a goal when the goal is associated with positive affect, in other words when the goal is desirable (Bargh, Gollwitzer, Lee-Chai, Barndollar, & Troetschel, 2001; Custers & Aarts, 2005, 2007a). Furthermore, research has shown that for goal pursuit to happen, the goal concept has to be salient (Bargh et al., 2001; see Moskowitz, Li, & Kirk, 2004, for an overview). The goal literature also suggests that rival alternative goals can be activated simultaneously and may compete with each other for mental resources, resulting in a conflict (Bargh & Barndollar, 1996; Kruglanski, et al., 2005). Moreover, goal system theory proposes that these different goal systems are highly flexible and context-dependent as a result of framing effects or relevant situational features activating the goal (Bargh & Gollwitzer, 1994; Frederick, Loewenstein, & O’Donoghue, 2002; Kruglanski, Shah, Fishbach, Friedman, Young Chun, & Sleeth-Keppler, 2005). However, it is very likely that one goal will dominate the conflict (Lindenberg & Steg, 2007). More specifically, when goals are in conflict, the increased salience of one given focal goal results in this most salient focal goal having a stronger impact on behavior than the other less salient goal (Aarts,

Custers, & Holland, 2007; Bargh & Barndollar, 1996; Shah, Friedman, & Kruglanski, 2002). Put differently, when conflicting goals are both perceived as desirable, difference in accessibility determines which goal people are going to pursue.

The morality literature tells us that in moral dilemmas people have to choose between different actions with good reasons for each of the actions involved (e.g., Beauchamp, 2001; Greene et al., 2001; Hauser, 2006). In other words, although people in footbridge dilemmas have to choose between the conflicting principles “Thou shalt not kill” and “Thou shalt save”, both are highly desirable. In addition, according to Greene and colleagues (2004) when solving the footbridge dilemma both utilitarian and deontological principles can be salient. When taking a closer look at the dilemma, we argue that this indeed can be the case. When the trolley comes hurtling down the track and the focus is on the five persons, the principle of “Thou shalt save” will be more salient. But when the focus switches towards the one person and one realizes that the only option to save the five persons is to kill the one person, then the principle “Thou shalt not kill” will be more salient. This line of reasoning finds validation by recent work stating that a different focus of attention can have a profound influence on how people perceive moral dilemmas and subsequently react on it (Bartels, 2008; Bartels & Medin, 2007; Waldmann & Dieterich, 2007). For example, Bartels (2008) states that when moral dilemmas direct people’s attention to violations of moral rules, deontological reactions exert a larger influence on judgments than when people’s attention is directed to consequences of action.

Earlier research has revealed that typically people are inclined not to intervene in a footbridge dilemma (Greene et al., 2001, 2004; Hauser, 2006). This may be explained at least partially by the way in which this dilemma is commonly framed. Because imagining an intervention directs participants’ focus of attention towards having to kill another person, the principle “Thou shalt not kill” becomes highly salient, therefore reducing people’s willingness to intervene (Bartels, 2008; Bartels & Medin, 2007). We tested this line of reasoning in a pilot study, where we examined

which principle is more salient when faced with footbridge dilemmas.<sup>3.2</sup> Summarizing, the results of the pilot study suggest that when individuals are confronted with the footbridge dilemma the principle of “Thou shalt not kill” is relatively more salient to them than the principle “Thou shalt save”. Thus, although both principles are seen as desirable, the principle “Thou shalt not kill” is rendered more salient than the principle “Thou shalt save”, making people less willing to intervene in footbridge dilemmas. In other words, when the context directs people’s attention to one specific feature, for example the deontological or utilitarian aspects of the action in footbridge dilemma (Bartels, 2008; Bartels & Medin, 2007), this affects which goal ultimately influences the willingness to intervene in footbridge dilemmas. Therefore, depending on how a dilemma is framed in goal-related terms, the relevant frame will influence how people pursue a given course of action within a moral dilemma. Following this, in the present research we propose that increasing the salience of one principle by means of situational cues is likely to make another principle less salient, subsequently influencing behavior in moral dilemmas.

### **The Current Research**

Parallel to Kruglanski and colleagues (2005) we state that environmental priming may affect the relative salience of specific principles. The idea of the current research is that which principle is most salient during the decision making process will influence how people solve footbridge dilemmas. If this line of reasoning has merit then it should be the case that priming people with either “Thou shalt not kill” or “Thou shalt save” should have an effect on the willingness to intervene in footbridge dilemmas. More specifically, when individuals are unobtrusively primed with the principle “Thou shalt save” this principle will become more salient than the principle “Thou shalt not kill” and subsequently individuals will be more willing to save five persons at the expense of one. In contrast, when individuals are primed with the principle “Thou shalt not kill” the heightened salience of this principle will result in decisions that show

less willingness to save five persons at the expense of one person. The three studies reported here test what the effects are of a difference in situational accessibility of either principle on the willingness to intervene in footbridge dilemmas. This is done both supraliminally (Studies 3.1 and 3.2) as well as subliminally (Study 3.3). To our knowledge, the situational accessibility of these specific principles has never been manipulated within moral dilemma research.

We tested our hypothesis using two different moral dilemmas: the footbridge dilemma, which has been described above, and the trolley dilemma. In the trolley dilemma, people are standing beside a switch alongside a railroad track. A runaway trolley is headed for five people who will not be able to leave the railroad track in time to avoid being overrun and killed by the trolley. Participants can prevent this from happening. The only possibility to save the five people in this dilemma is pulling the switch. As a result, the trolley changes to an alternate set of tracks where it will kill one person instead.

Research by Hauser (2006) demonstrates that individuals normally have a greater willingness to intervene in trolley dilemmas (typically 90% thinks intervention is acceptable), than in footbridge dilemmas (10% thinks intervention is acceptable). In other words, the default reaction within trolley dilemmas is aimed at intervention, whereas individuals within footbridge dilemmas show a great degree of inaction. Explaining these results one could argue that the solution within trolley dilemmas is so obvious that participants not only approve of intervention more often, but also are faster when answering the question whether intervention is appropriate within trolley dilemmas (Greene et al., 2001). The course of action within trolley dilemmas is that clear that it leaves no room for doubt, causing less possibility for affecting participants within these situations. Furthermore, the emotional engagement of footbridge dilemmas makes these dilemmas less easy and more ambiguous regarding how to respond to the dilemma (Van den Bos et al., 2010). That is, individuals confronted with footbridge dilemmas are reeled between taking action by intervening, and inaction (Hauser, 2006). This reveals itself in slower reaction times

when participants are asked for their willingness to intervene within footbridge dilemmas (Greene et al., 2001; Koenigs et al., 2008). Because of this one could argue that participants in these dilemmas are in doubt what to do and are more affected by subtle situational information. We therefore expected that individuals in the footbridge dilemma primed with the principle “Thou shalt save” have a greater willingness to intervene, compared to individuals primed with “Thou shalt not kill”. We expected the effects of priming these principles to be much less pronounced in the trolley dilemma.

### Study 3.1

Study 3.1 was a field experiment in which participants were primed with either the “Thou shalt not kill” or “Thou shalt save” principles by means of two open-ended questions that asked participants to think about either principle.

#### *Method*

*Participants and design.* Ninety-five individuals (52 men, 43 women) participated in the experiment.<sup>3.3</sup> Participants were randomly assigned to one of the conditions of a 2 (primed principle: “Thou shalt not kill” vs. “Thou shalt save”) x 2 (dilemma: trolley vs. footbridge) factorial design. Mean age of the participants was 30 years and 4 months ( $SD = 11$  years, 8 months; range 15–58 years).

*Experimental procedure.* People traveling by train were invited to participate in the experiment. The cover story told participants that we were interested in how people think about principles and following orders. They were asked to read one version of a short story about a peacekeeping mission in Congo, Africa. The different primes were introduced by different versions of the story. The story regarding the “Thou shalt not kill” prime was as follows:

*During missions abroad soldiers have to apply to certain rules. This is called a mandate. During a conflict in 1994 in*

*Congo, Africa, the mandate of the UN peace keeping force present in the country was not to use any armed violence to end the conflict. Despite several warnings beforehand and during the conflict by the UN-commander in chief on the spot, the Canadian lieutenant-general Roméo Dallaire, UN-soldiers were not allowed to conduct any offensive actions. They were only allowed to use their weapons when they themselves were attacked. The mandate was based on the principle* “Thou shalt not kill”.

For the “Thou shalt save” version participants read:

*During missions abroad soldiers have to apply to certain rules. This is called a mandate. During a conflict in 1994 in Congo, Africa, the mandate of the UN peace keeping force present in the country was to use armed violence to end the conflict. As a result of several warnings beforehand and during the conflict by the UN-commander in chief on the spot, the Canadian lieutenant-general Roméo Dallaire, UN-soldiers were allowed to conduct offensive actions. They were both allowed to use their weapons to protect the civilian population, as well as when they themselves were attacked. The mandate was based on the principle* “Thou shalt save”.

After reading the story, participants were asked two open-ended questions. First, participants were asked to put themselves in the position of the lieutenant-general and were asked to write down how they would act in line with either the “Thou shalt not kill” or the “Thou shalt save” mandates. Secondly, participants were asked to think about and write down what the specific principle, either “Thou shalt not kill” or “Thou shalt save”, meant for them in their daily lives.

Subsequently, participants were asked to rate how they felt at the moment on the 20 items of the PANAS (1 = *not at all*, 8 = *very strongly*).

The PANAS was included as a filler task, as well as to determine whether the primes triggered any unwanted positive or negative affective reaction. The PANAS consists of two subsets of items, one measuring positive (e.g., “excitement”) and one measuring negative (e.g., “guilt”) affect (Watson, Clark, & Tellegen, 1988). Both subscales were averaged to form reliable scales ( $\alpha$ 's = .82 and .84, respectively).

The PANAS was followed by asking participants to read and respond to either the footbridge or the trolley dilemma. The footbridge dilemma was described in the following way to our participants:

*You are standing on a footbridge crossing a railroad track. While you are standing next to a stranger, suddenly a runaway trolley comes hurtling down the railroad track. Further down the railroad track five people are working and they cannot possibly leave the railroad track in time. If the trolley proceeds its present course it will crash into the five railroad workers and they will be killed in a fatal accident. The only way to save the five people is to push this man off the bridge and into the path of the trolley. The body of this person will break the speed of the trolley as a result of this the trolley will stop and the five persons will survive. The person thrown from the footbridge will certainly die.*

The trolley dilemma was described by the following text:

*You are standing beside the switch of a railroad track. Suddenly a runaway trolley comes hurtling down the tracks. Further-on down the railroad track five people are working and they cannot possibly leave the railroad track in time. If the trolley proceeds its present course it will crash into the five railroad workers and they will be killed in a fatal accident. You can save these five people by diverting the trolley onto a different set of railroad tracks. The different railroad track*

*has only one person on it, into which the trolley will crash.  
This person will be killed as a result of this.*

After reading the dilemma participants in all conditions were asked the following questions about whether they would intervene in the dilemma: “To what extent do you feel obliged to save the five persons on the track at the cost of the one person?”, “To what extent do you feel called upon to save the five persons?”, “To what extent do you have the feeling to save the five persons on the track?”, “To what extent do you feel encouraged to save the five persons on the track?”, “To what extent do you feel moved to save the five persons on the track?”, “To what extent do you have the urge to sacrifice the one person in order to save the five others?”, “Do you think it is acceptable to sacrifice the one person in order to save the five others?”, “Do you think it is reasonable to sacrifice the one person in order to save the five persons?”, “To what extent do you feel inhibited to sacrifice the one person to save the five others?”, “Do you feel restrained to save the five persons?”, “Do you feel inhibited to save the five persons on the railroad track at the cost of one?” (1 = *certainly not*, 7 = *certainly*). After recoding the last three questions, all items were averaged to form a reliable scale indicating the willingness to intervene in the dilemma ( $\alpha = .82$ ).

Finally, a funneled debriefing procedure modeled after the procedure used by Chartrand and Bargh (1996) probed participants for awareness or suspicion concerning our priming manipulation. Participants were asked what they thought the purpose of the experiment had been, what they thought the experiment tried to study, whether the story about the peacekeeping force in Africa and subsequently answering the two open-ended questions was related to answering the dilemma and whether they had noticed something special regarding the research. None of the participants indicated any suspicion about the purpose of the experiment, nor did relate the story about the peacekeeping force and its mandate to the decision making task. Finally, participants were thanked for their participation and debriefed.

*Results*

PANAS. To investigate the effects of our manipulations on the positive and negative subscale scores of the PANAS, we submitted both scores to a 2 x 2 univariate analysis of variance (ANOVA). These analyses did not find any effects, all  $F_s < 1$ . This suggests that difference in affective states cannot explain the findings reported here. Overall means of the positive and negative subsets were 3.14 ( $SD = 0.95$ ) and 1.95 ( $SD = 0.81$ ), respectively.

*Willingness to intervene.* The scale reflecting participants' willingness to intervene in the dilemma was submitted to a 2 x 2 ANOVA. The analyses yielded a main effect of dilemma,  $F(1, 93) = 36.61, p < .001, \eta^2 = .27$ , and a significant main effect of prime  $F(1, 93) = 4.56, p < .04, \eta^2 = .03$ . In support of our hypothesis we found the predicted interaction effect,  $F(1, 93) = 4.15, p < .05, \eta^2 = .03$ .

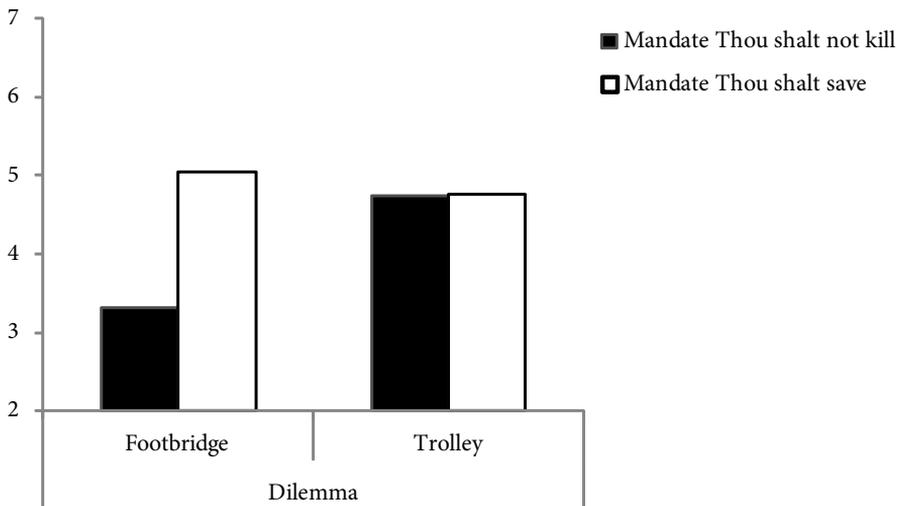


Figure 3.1. Willingness to intervene (on a scale from 1 to 7) in trolley and footbridge dilemmas as a function of manipulated salience of the principles “Thou shalt not kill” and “Thou shalt save”. Higher bars indicate a greater willingness to intervene.

More specifically, when responding to the footbridge dilemma, participants who had thought about the principle “Thou shalt save” were

more willing to intervene in the dilemma ( $M = 4.05$ ,  $SD = 1.03$ ), than participants who thought about the principle “Thou shalt not kill” ( $M = 3.31$ ,  $SD = .89$ ),  $F(1, 93) = 5.95$ ,  $p < .02$ ,  $\eta^2 = .06$ . When responding to the trolley dilemma, there was no significant difference in willingness to intervene between participants who thought about the principle “Thou shalt save” ( $M = 4.76$ ,  $SD = .86$ ) and participants who had thought about the principle “Thou shalt not kill”, ( $M = 4.74$ ,  $SD = .63$ ),  $F < 1$ .

### Study 3.2

Thus, as predicted, the results of Study 3.1 demonstrate that individuals confronted with the footbridge dilemma and primed with the principle “Thou shalt save” have a greater willingness to intervene in the dilemma than those primed with “Thou shalt not kill”. For individuals confronted with the trolley dilemma no differences in willingness to intervene were found between conditions that primed participants with either the principle “Thou shalt not kill” or “Thou shalt save”. Study 3.2 was designed to replicate these results by using more subtle primes. Furthermore, because we also wanted to know which principle (either “Thou shalt save” or “Thou shalt not kill”) most strongly influences the willingness to intervene in the footbridge dilemma, we included a control condition.

According to Haidt (2001) morality involves more complex social stimuli than the simple words and visual objects used in studies on automaticity. Therefore, in the current studies we presented different stimulus material than normally used when priming concepts (e.g., flashing words on a computer screen or using a scrambled-sentence task). In the current set of studies we use stimulus materials that, we think, represent and summarize complex ideas: symbols. Symbols represent complex ideas in an immediate way and make the defining point of an idea immediately salient (Carlston & Mae, 2007; Greenberg et al., 1995; Langer, 1942; Ortner, 1973; Weisbuch-Remington et al., 2005). Symbols communicate ideas and beliefs together with knowledge that is associated with these ideas (Hassin et al., 2007), such as the abstract

meanings of cultural values (e.g. morality). In other words, symbols have the ability to automatically activate conceptions that are associated with the given object by drawing together important and complex beliefs in an immediate manner (Carlston & Mae, 2007; Joly & Stapel, 2009; Langer, 1942; Weisbuch-Remington et al., 2005). Furthermore, symbols play an important function in human conduct (Hassin et al., 2007) and are able to prime social norms (Joly & Stapel, 2009).

To find symbols that clearly represented either the principle “Thou shalt save” or “Thou shalt not kill” we tested in a pre-test how several symbols were perceived by individuals. This pre-test resulted in three symbols that most strongly were associated with a specific principle.<sup>3,4</sup> For the principle of “Thou shalt not kill” these were the peace logo, an image of the Ten Commandments, and the logo of the Dutch organization “Tegen Zinloos Geweld” (Against Useless Violence).<sup>3,5</sup> Regarding the principle of “Thou shalt save” the pre-test brought about the logo of the Red Cross, the symbol of an ambulance, and an image of a lifebuoy. In the control condition we used images of a table, a chair, and a wheel of a bicycle.

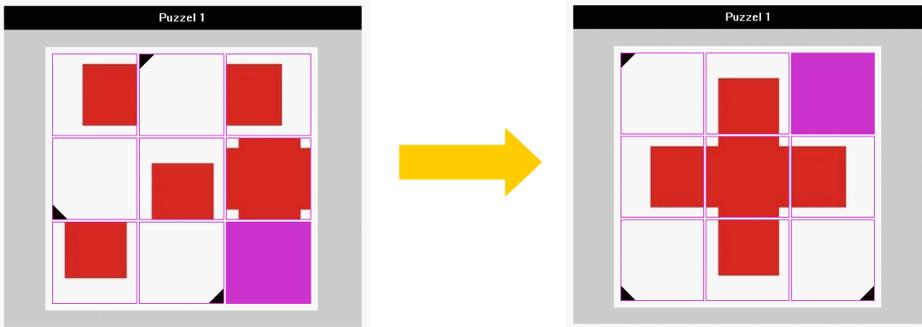
### *Method*

*Participants and design.* One hundred and forty-five students (58 men, 87 women) at Utrecht University participated in the experiment, receiving € 6 or course credits. Participants were randomly assigned to one of the conditions of a 3 (primed principle: “Thou shalt not kill” vs. “Thou shalt save” vs. control) x 2 (dilemma: trolley vs. footbridge) factorial design.

*Experimental procedure.* Participants were invited to the laboratory to participate in several social psychological studies. On arrival at the laboratory, participants were led to separate cubicles, each of which contained a computer with a screen and keyboard. Next to the monitor participants found an envelope containing a questionnaire and a pencil. Participants were told that all instructions were presented on the computer screen. The computers were used to present the stimulus materials to the participants.

The cover story of the experiment informed participants that we

were interested in the influence of left- or right-handedness on visual tasks. Participants were asked to solve sliding puzzles. Each puzzle consisted of eight pieces and one empty spot. An example of a puzzle can be found in the Appendix. The solutions of the puzzles were symbols related to either the “Thou shall not kill” or “Thou shall save” principles. The symbols used in Study 3.2 were the result of a pre-test. The puzzles could be resolved by sliding the pieces one by one as long as was needed to solve the puzzles, but not longer than six minutes. Before and after each puzzle, the solution of the puzzle (the unscrambled logo) was briefly shown to participants, without mentioning in print or otherwise the label to which the logo referred. During the puzzle tasks the solution was shown in a small frame in the upper right corner of the computer screen.



*Figure 3.2.* An example of a scrambled version and solution of the symbols used in the sliding puzzle task used in Study 3.2. This example pertains to the logo of the International Red Cross, and was part of the “Thou shalt save” condition.

After the third puzzle, participants were asked to continue with an ostensibly unrelated human decision making task. That is, participants were asked to fill out the questionnaire that they found in the envelope lying beside the computer screen. This questionnaire was the same as in Study 3.1, including the PANAS and the footbridge or trolley dilemmas. Both positive and negative subscales of the PANAS were again averaged

to form reliable scales ( $\alpha$ 's = .85 and .86, respectively).

The PANAS was followed by either the trolley dilemma or the footbridge dilemma. To get an indication of the robustness of the findings obtained in Study 3.1 and 3.2, the dependent variables were related but slightly different compared to those in Study 3.1. That is, after reading the dilemmas participants were asked the following questions about whether they would intervene in the dilemmas: "To what extent do you have the urge to sacrifice the one person in order to save the five others?", "Do you think it is acceptable to sacrifice the one person in order to save the five others?", "Do you think it is reasonable to sacrifice the one person in order to save the five persons?", "To what extent do you feel inhibited to sacrifice the one person to save the five others?", "Do you feel restrained to save the five persons?", "Do you feel inhibited to save the five persons on the railroad track at the cost of one?" (1 = *certainly not*, 7 = *certainly*). After recoding the last three questions, all items were averaged to form a reliable scale regarding the willingness to intervene ( $\alpha = .76$ ).

The same funneled debriefing structure as in Study 3.1 was used. Participants were asked what they thought the purpose of the puzzle task had been, whether any of the tasks participants performed had been related to each other, and whether they thought their performance on the puzzle task might have affected their performance on the next tasks. None of the participants indicated any suspicion regarding the purpose of the experiment, nor did relate the puzzle-task to the decision making task. Finally, participants were paid, thanked for their participation, and debriefed.

### *Results*

*PANAS.* To investigate the effects of our manipulations on the positive and negative subscale scores of the PANAS, we submitted both scores to a 3 x 2 ANOVA. This analysis yielded a significant interaction on the negative subscale only,  $F(2, 144) = 3.34, p < .04$ , all other  $p$ 's  $> .05$ . However, the simple effect analyses showed no significant difference between the different conditions regarding the different primes,  $F(1, 144) = 2.43, p > .09$ . More specifically, for the trolley dilemma the scores on the

positive subscale of the PANAS did not differ for participants confronted with “Thou shalt save” ( $M = 4.28, SD = .96$ ), “Thou shalt not kill” ( $M = 4.54, SD = .99$ ) and control puzzles ( $M = 4.42, SD = .79$ ). Likewise, for the footbridge dilemma, the scores on the positive subscale of the PANAS did not differ for participants confronted with “Thou shalt save” ( $M = 4.11, SD = 1.02$ ), “Thou shalt not kill” ( $M = 4.47, SD = 1.02$ ) and control puzzles ( $M = 4.09, SD = .59$ ). Furthermore, for the trolley dilemma the scores on the negative subscale of the PANAS did not differ for participants confronted with “Thou shalt save” ( $M = 1.86, SD = .70$ ), “Thou shalt not kill” ( $M = 2.09, SD = .89$ ) and control puzzles ( $M = 2.14, SD = .72$ ). Likewise, for the footbridge dilemma, the scores on the negative subscale of the PANAS did not differ for participants confronted with “Thou shalt save” ( $M = 2.51, SD = 1.05$ ), “Thou shalt not kill” ( $M = 2.09, SD = .71$ ) and control puzzles ( $M = 2.07, SD = .58$ ). These findings suggest therefore that difference in affective states cannot explain the findings reported here.

*Willingness to intervene.* The scale measuring willingness to intervene in the dilemmas was submitted to a 3 x 2 ANOVA with number of puzzles that were resolved as a covariate.<sup>3,6</sup> This yielded a main effect of dilemma,  $F(1, 144) = 3.97, p < .05, \eta^2 = .24$ , and the predicted interaction effect,  $F(1, 144) = 3.23, p < .05, \eta^2 = .03$ . Simple effect analyses showed that for participants confronted with the footbridge dilemma a significant difference in willingness to intervene was found between the different conditions,  $F(1, 144) = 3.53, p < .04, \eta^2 = .05$  (see Figure 3.3). Furthermore, planned comparisons revealed that participants confronted with “Thou shalt save” puzzles were more willing to intervene in the footbridge dilemma ( $M = 3.38, SD = 1.28$ ) than participants confronted with “Thou shalt not kill” puzzles ( $M = 2.72, SD = .94$ ),  $F(1, 138) = 8.04, p < .01$ . Moreover, participants confronted with “Thou shalt save” puzzles were more willing to intervene in the footbridge dilemma ( $M = 3.38, SD = 1.28$ ) than participants confronted with the control puzzles ( $M = 2.99, SD = .89$ ),  $F(1, 138) = 4.28, p < .05$ . Participants in the control condition and participants confronted with “Thou shalt not kill” puzzles did not differ in their willingness to intervene,  $F < 1$ . Furthermore, no significant

difference in the willingness to intervene between the different priming conditions was found for participants who read the trolley dilemma,  $F(1, 144) = 1.89$   $p > .15$ ,  $\eta^2 = .02$ . So, responsible for the interaction-effect thus seems to be the principle “Thou shalt save” and not the principle “Thou shalt not kill”.

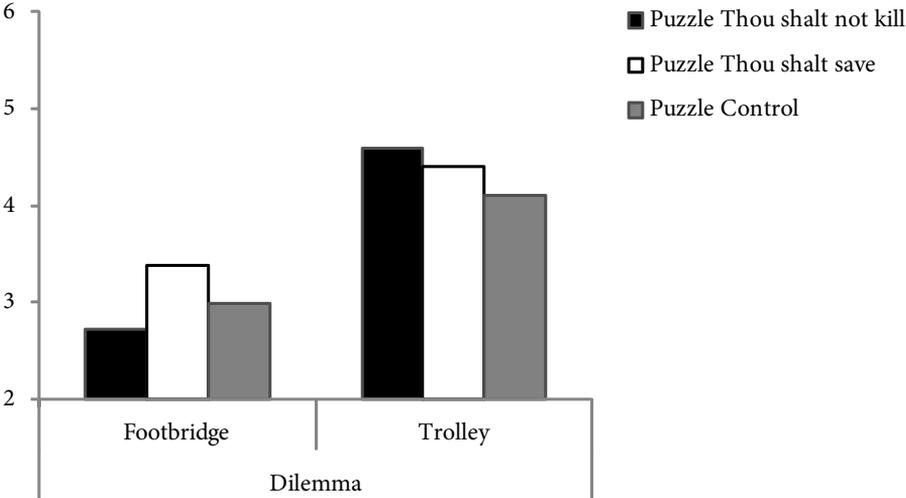


Figure 3.3. Willingness to intervene (on a scale from 1 to 7) in trolley and footbridge dilemmas as a function of supraliminal priming of “Thou shalt not kill”, “Thou shalt save” or “Control” symbols (Study 3.2). Higher bars indicate a greater willingness to intervene.

### Study 3.3

The results of Study 3.2 demonstrate that when participants are primed with the principle of “Thou shalt save” they are more willing to intervene in footbridge dilemmas than participants who are primed with the principle of “Thou shalt not kill” or with neutral control primes. Furthermore, the principle “Thou shalt save” seems to drive this effect within footbridge dilemmas. For participants confronted with trolley dilemmas no significant difference in willingness to intervene is found

between priming with either the principle “Thou shalt not kill” or “Thou shalt save”.

In order to exclude demand characteristics or a conscious strategy by participants as alternative explanations, Study 3.3 tried to replicate the findings of Study 3.2 by presenting the primes subliminally using a parafoveal priming task. To make sure that the primed stimuli were presented outside of participants’ perceptual field and therefore outside their conscious awareness, they first performed a parafoveal-priming task modeled after the task used by Custers and Aarts (2007b). This means that the stimuli were presented in the parafoveal field (i.e., outside the most sensitive part of the retina), where information cannot be consciously perceived at short presentation times (for further details, see Chartrand & Bargh, 1996).

#### *Method*

*Participants and design.* Ninety-one students (39 males, 52 females) from Utrecht University participated in the experiment, receiving € 6 or course credits. Participants were randomly assigned to one of the conditions of a 2 (prime: “Thou shalt not kill” vs. “Thou shalt save”) x 2 (dilemma: trolley vs. footbridge) factorial design.

*Experimental procedure.* Participants were invited to the laboratory to participate in several social psychological studies. On arrival at the laboratory, participants were led to separate cubicles, each of which contained a computer, with a 100-Hz computer screen and a keyboard. Participants were told that all instructions would be presented on the computer screen. The computers were also used to present the stimulus material.

Participants were told that they would participate in a series of unrelated studies. The cover story informed participants that we were interested in the influence of left- and right handedness on eye-hand coordination when people react on events happening in their environment. We explained to the participants that arrows would appear just above the center of their computer screens. These arrows would be presented very shortly and at unpredictable times. Participants were asked to indicate

to which direction an arrow pointed, using the “z” key to indicate that the arrow pointed left and the “/” key to indicate that the arrow pointed to the right. A fixation point consisting of three X’ses was continuously presented in the center of the screen. Participants were told that because of the unpredictable timing of the appearance of the arrows the best way to detect the direction of the arrows was for them to keep their eyes on the fixation point at all times. Furthermore, participants learned that the arrows would be accompanied by very short flashes that would appear on the screen at unpredictable locations and times. In fact these flashes consisted of the images we used in Study 3.2.

The images would appear on one of the four corners of the screen. The four corners corresponded with the paravoveal locations on the screen, that is outside people’s visual field and therefore outside people’s conscious awareness. The images were flashed at one of four parafoveal locations on the screen for 20 ms, immediately followed by a 100-ms masking picture of a blue and white whirlwind. Participants were told that these flashes were used to distract them from their main task, which was to decide which direction the arrows pointed at. The participants were advised not to take notice of the flashes and keep concentrated on the fixation point to improve the accuracy in deciding which direction the arrows were pointing at. Participants were given 12 practice trials to become familiar with the procedure. The images used during these practice trials were the images used in the control condition in Study 3.2. In the experimental conditions, the images related to either “Thou shalt save” or “Thou shalt not kill” (see Study 3.2) were primed in alternating order on 75 trials in total.

Following the paravofeal-priming task in a new and unrelated task participants were asked to fill in a questionnaire that measured how they felt at that moment. This task consisted of the PANAS and was included as a filler task and to determine whether the primes triggered any unwanted positive or negative affective reactions. Both positive and negative subscales were averaged to form reliable scales ( $\alpha$ ’s = .89 and .92 respectively). After the PANAS participants were told that a new and

ostensibly unrelated task would be uploaded on the screen. This task introduced either the trolley or footbridge dilemma to our participants. After reading one of the two dilemmas, participants were asked questions about whether they would intervene in the dilemma. The items used were the same items as used in Study 3.2 and were averaged to form a reliable scale indicating the willingness to intervene ( $\alpha = .72$ ).

In addition, a funneled debriefing procedure was used to ensure that participants were not aware of the priming stimuli (Chartrand & Bargh, 1996; Stapel, Koomen, & Ruys, 2002). Participants were asked what they thought the purpose of the arrow-task had been, whether any of the tasks participants performed had been related to each other, whether they thought their performance on the arrow task might have affected their performance on the next tasks and what they thought the content of the flashes during the arrow task had been. Finally, participants were presented with the specific primes used in the study together with other images. They were told that during the trials one of these images had been presented very briefly (in the flashes) on the screen. Participants were asked to indicate which of the images they thought had been flashed on the screen. More than one image could be chosen. Finally, participants were paid, thanked for their participation, and debriefed.

Although participants reported sometimes having seen flashes on the screen, they also reported they did not take notice of them because the main purpose of the task was to decide in which direction the arrows pointed. So they kept focusing on the arrows as was asked to them in the instructions. Furthermore, even though most participants reported having seen the mask (the whirlwind), no single participant could report on the specific contents of the specific “Thou shalt save” and “Thou shalt not kill” primes. In addition, none of the participants mentioned that the priming task and the moral dilemma task were related. Therefore, we can safely conclude that the priming stimuli were successfully presented outside of participants’ awareness, that the experiment was successful in not unveiling its real purpose because participants did not connect the arrow task to the moral dilemmas.

## Results

*PANAS.* To investigate the effects of our manipulations on the positive and negative subscale scores of the PANAS, we submitted both scores to a 2 x 2 ANOVA. This analysis did not find any main or interaction effects, all  $F$ s < 1. This suggests that difference in affective states cannot explain the findings reported here. Overall means of the positive and negative subsets were 4.06 ( $SD = 0.96$ ) AND 2.03 ( $SD = 0.95$ ), respectively.

*Willingness to intervene.* Willingness to intervene was submitted to a 2 x 2 ANOVA. This yielded a main effect of dilemma,  $F(1, 90) = 27.26$ ,  $p < .001$ ,  $\eta^2 = .23$ , and the predicted interaction effect,  $F(1, 90) = 4.70$ ,  $p < .04$ ,  $\eta^2 = .05$ . More specifically, for the footbridge dilemma participants primed with symbols associated with the principle “Thou shalt save” were more willing to intervene in the dilemma ( $M = 3.88$ ,  $SD = 1.37$ ), than participants primed with symbols associated with the principle “Thou shalt not kill” ( $M = 3.09$ ,  $SD = 1.04$ ),  $F(1, 90) = 4.06$ ,  $p < .05$ ,  $\eta^2 = .04$ .



Figure 3.3. Willingness to intervene (on a scale from 1 to 7) in footbridge and trolley dilemmas as a function of subliminal priming of “Thou shalt not kill” and “Thou shalt save” symbols. Higher bars indicate a greater willingness to intervene.

In the trolley dilemma condition, no significant difference in willingness to intervene was found between participants primed with symbols associated with the principle “Thou shalt save” ( $M = 4.59, SD = 1.11$ ) and participants primed with symbols associated with the principle “Thou shalt not kill”, ( $M = 4.82, SD = 0.87$ ),  $F < 1$ .

Thus, in correspondence with and extending the results of Studies 3.1 and 3.2 the findings of Study 3.3 demonstrate that individuals confronted with footbridge dilemmas and primed with the principle of “Thou shalt save”, this time subliminally, were more willing to intervene than those primed with the principle of “Thou shalt not kill”. For individuals confronted with a trolley dilemma no significant difference in willingness to intervene was found between priming with either “Thou shalt not kill” or “Thou shalt save”.

## General Discussion

Taken together, the findings of three studies strongly suggest that which principle has been made most salient during the decision making process, either “Thou shalt save” or “Thou shalt not kill”, influences how people solve footbridge dilemmas. Study 3.1 showed that making salient the principle “Thou shalt save” in footbridge dilemmas resulted in a greater willingness to intervene, than when making salient the principle “Thou shalt not kill”. Study 3.2 replicates and extends these findings by using symbols that represent the respective moral frameworks as subtle situational cues. Study 3.2 demonstrated that when the principle “Thou shalt save” was primed by presenting related symbols supraliminal, individuals in footbridge dilemmas again showed a greater willingness to intervene, than when symbols regarding “Thou shalt not kill” or neutral symbols were presented.

In Study 3.3 priming the principle “Thou shalt save” again resulted in a greater willingness to intervene in footbridge dilemmas than priming the principle “Thou shalt not kill”, this time by presenting symbols related to the specific principles paravovealy. This suggests that the

moral principles studied here can be activated subliminally and influence the decisions that participants make in moral dilemmas outside their conscious awareness. This could explain why there often is a dissociation between moral judgments and the reasoning whether these judgments are based on explicitly understood principles (Hauser, Cushman, Young, Jin, & Mikhail, 2007). The results of Study 3.3 suggest that the use of these principles during the decision making process can be unconscious and that therefore people often cannot verbalize having based their decisions on specific principles. In trolley dilemmas we did not find reliable effects of our priming with either “Thou shalt not kill” or “Thou shalt save”. This finding corroborates our suggestion that as a consequence of the lack of ambiguity in trolley dilemmas people are less easily influenced by extraneous information besides the information present in the trolley situation (Van den Bos et al., 2010).

The results of the current research broaden the insight in how people solve moral dilemmas. Apparently, the philosophical frameworks that morality literature assumes to play a role, that is utilitarianism and deontology, indeed influence the decision making process within moral dilemmas. Furthermore, the current set of studies is the only one, as far as we know, showing that these frameworks can be made salient, thereby influencing the willingness to intervene in moral dilemmas. This influence even can take place outside people’s awareness by priming symbols associated with principles related to these frameworks as subtle situational cues. Based on our pre-test and the findings of Studies 3.1-3 we assume that symbols can activate specific frameworks, such as the utilitarian principle of “Thou shalt save” or the deontological principle of “Thou shalt not kill”. We thereby presume that which framework is most salient during the decision making process subsequently influences the willingness to intervene and the outcome of moral dilemmas. As a result of priming the principle “Thou shalt save” the utilitarian framework is made more salient and therefore people are directed towards saving lives and subsequently show a bigger willingness to intervene, whereas priming the principle “Thou shalt not kill” leads to the heightened salience of the

deontological framework and thereby a smaller willingness to intervene.

We propose that the current findings are in support of a new perspective on how decisions in moral dilemmas are made. That is, in addition to perspectives that characterize the way people make decisions based on “moral reasoning” (e.g., Kohlberg, 1969; Monin et al., 2007; Nichols & Mallon, 2006; Piaget, 1932/1975; Pizarro & Bloom, 2003; Turiel, 1983) and “affective intuitions” (e.g., Haidt, 2001; Kagan, 1984; Wilson, 1993) and supplementing the dual-process perspective (Greene et al., 2001) which argues that both reasoning and affective intuition play crucial roles, the current findings suggest the following: People can also make moral decisions as a result of which goal is most salient at the time of deciding. So, it may be only conscious deliberation (see the moral reasoning approach) or fast affective processes (see the moral intuition approach) or a combination of both (see the dual-process approach), but also a matter of which goal is most (unconsciously) salient when people are confronted with moral issues. This is in line with recent research stating that unconscious processes, such as unconscious thinking, can influence moral decisions (Ham & Van den Bos, 2010). Future research may more fully explore the implications of this possibly new perspective on the social psychology of decisions within moral dilemmas.

Furthermore, the results of Study 3.2 demonstrate that when participants are primed with the principle of “Thou shalt save” they are more willing to intervene in a footbridge dilemma than participants who are primed with the principle of “Thou shalt not kill” or with neutral control primes. It appears that making salient the principle “Thou shalt save” drives the effect. We think that this seems to suggest that people primed with the principle “Thou shalt save” show less behavioral inhibition. Priming “Thou shalt save” has a positive influence on the willingness to intervene relative to priming with the principle “Thou shalt not kill”. It seems that participants primed with “Thou shalt save” were more ‘activated’ to intervene in the footbridge dilemma than participants primed with “Thou shalt not kill” or those who were not primed with anything. Although speculative, this line of reasoning is in correspondence

with recent research showing that people feel inhibited when they are confronted with moral dilemmas and that lowering this inhibition leads to a greater willingness to intervene in these dilemmas (Broeders, Van den Bos, & Müller, 2010; Van den Bos, in press; Van den Bos et al., 2010). Future research may more fully explore the implications of the influence of the concept of inhibition on the social psychology of decisions within moral dilemmas.

The findings presented here may also have implications for other literatures. For example the present findings are in line with suggestions that priming is likely to affect a person's actions if the prime is relevant or applicable to the person's current motivations (e.g., Higgins, 1996; Strahan, Spencer, & Zanna, 2005). Regarding the footbridge dilemma one could argue that participants are both motivated to "not kill" as well as "save" people. Therefore, one could argue that two goals could be salient and active during the decision making process: "Thou shalt not kill" and "Thou shalt save". In this sense, recent advances in the research on goal pursuit are relevant for research on moral decision making, by showing that conflicting goals can be activated simultaneously and may compete with each other for mental resources (Bargh & Barndollar, 1996; Bargh & Gollwitzer, 1994; Bargh et al. 2001; Kruglanski, et al., 2005). Thus, activating one goal can interfere with the pursuit of another goal, as only one of the two conflicting goals can direct behavior at a given moment. Furthermore, Kruglanski et al. (2005) state that environmental priming may lead to the activation of different goal systems at the same time. In addition, goal system theory proposes that these different goal systems are highly flexible and context-dependent as a result of framing effects (Kruglanski et al., 2005). Likewise, for the footbridge dilemmas used in the current research, one could argue that two goals are relevant for a participant's decision: "Thou shalt not kill" and "Thou shalt save". The framing of a dilemma in goal-related terms will then influence which goal is more likely to be pursued within a moral dilemma. When the environment or context makes the goal "save as many people as possible" more salient, for example by priming the symbol of the Red Cross, the

“saving” goal will dominate the goal conflict and individuals will frame the dilemma as a saving problem. They probably will pursue this utilitarian course of action at the expense of the “do not kill” goal and save five people at the expense of one. On the other hand, by making salient “do not kill”, for example by priming the symbol of the Ten Commandments, the “not kill” goal will dominate the goal conflict and individuals will frame the dilemma as a not kill problem. This will trigger the pursuit of this goal at the cost of the “saving” goal whereby individuals refrain from saving five people at the cost of one.

Although in the current research we have approached the salience of the utilitarian principle “Thou shalt save” and the deontological principle “Thou shalt not kill” from a goal conflict perspective, it can be argued that these different goals also could have a hierarchical relation. Therefore, future research building on the findings presented here may also want to explore the implications of action identification theory (Vallacher & Wegner, 1987; Wegner & Vallacher, 1986). According to action identification theory actions can be identified in many ways, resulting in a hierarchical arrangement of an action’s various identities. Lower level representations in this action identification hierarchy convey the means how the action is performed, whereas higher level representations convey a more general understanding of the action focusing on the ends of the action (Trope & Liberman, 2003; Vallacher & Wegner, 1987; Wegner & Vallacher, 1986). It has been suggested that actions may be presented in terms of superordinate and subordinate goals (Liberman & Trope, 1998; Trope & Liberman, 2003). From this perspective of goal hierarchies one could argue that the action of intervention in footbridge dilemmas can be identified at a higher level as ‘saving’ when one focuses on the ends, for example the greater good. Focusing on the means of intervention can be identified at a lower level as “pushing the one person”. In other words, because in footbridge dilemmas the utilitarian goal “Thou shalt save” is conducive for the greater good, one could argue that this goal is higher in the goal hierarchy than “Thou shalt not kill”.

In addition, recent research has demonstrated the association

between affect and level of focus. Anxiety facilitates local processing (Derryberry & Reed, 1998), whereas happiness directs attention to global processing (Basso, Schefft, Ris, & Dember, 1996; Gasper & Glore, 2002). A positive mood allows people to distance themselves psychologically from the situation resulting in a broader perspective, or seeing the big picture (Bar-Anan, Liberman, & Trope, 2006; Liberman, Sagristano, & Trope, 2002; Trope & Liberman, 2003; Trope, Liberman, & Wakslak, 2007). Put differently, a positive mood focuses on the higher level representations, the ends, of an action and therefore the goal higher in the hierarchy is more salient, whereas a negative mood focuses on the lower level representations, the means, of an action and therefore the goal lower in the hierarchy is more salient. From research on footbridge dilemmas we know that negative (Greene et al., 2001, 2004) and positive affect (Valdesolo & DeSteno, 2006) could play a role when solving this dilemma. Recent research by Valdesolo and DeSteno (2006) demonstrated that after priming participants with positive affect, they were more willing to intervene in the footbridge dilemma. Positive affect results in a more holistic, global mindset as a result of which people see the bigger picture, that is the greater good. In other words, people focus on the goal higher in the hierarchy: “Thou shalt save”. Therefore people are more willing to intervene. Furthermore, Greene (2009) states that the footbridge dilemma elicits a negative emotional response leading to deontological judgments. Put differently, negative affect results in local processing focusing on the concrete situation, the here and now. That is the means of stopping the trolley: the person on the footbridge. Therefore the deontological goal “Thou shalt not kill” becomes more salient and people refrain from intervention. Although it can be argued that on the basis of the current data one cannot be sure that utilitarian or deontological goals are part of a goal hierarchy, future research could fully explore the idea that moral dilemmas in fact can be seen as potential goal hierarchy situations, adding a new perspective to approaching moral dilemmas as goal situations.

To return to the findings presented here, we hope to have shown that the current research broadens the perspective on how people solve

moral dilemmas in which certain principles are in conflict. Apparently the relative salience of specific principles beyond the salience of rival alternative principles can have an impact on how people solve moral dilemmas. This salience can be a result of situational cues. We are not saying that pursuing one or the other principle is better or worse. We are only saying that it matters with which activated framework individuals enter the decision making process. For the people who are the target of the decision making process in moral dilemmas, which framework is activated even matters a lot.

## Footnotes

<sup>3.1</sup>We acknowledge that some people are skeptical about the use of the footbridge dilemma in the study of morality, but we also think it is fair to note that the footbridge dilemma is considered an important moral dilemma familiar to many contemporary moral scholars (e.g., Greene et al., 2001). Therefore we have chosen to connect to this literature and, in line with this literature, use the footbridge dilemma in the current research.

<sup>3.2</sup>In a pilot study we tested whether the principle “Thou shalt save” or “Thou shalt kill” is more salient at default within trolley and footbridge dilemmas. After reading either the trolley or footbridge dilemma participants were asked several unipolar questions about their decision in relation to the principles “Thou shalt not kill” ( $\alpha = .79$ ) and “Thou shalt save” ( $\alpha = .90$ ). Per principle participants were asked whether the specific principle was decisive (1 = *totally not agree*, 8 = *totally agree*), important (1 = *totally not important*, 8 = *very important*) and whether their decision was based on the specific principle (1 = *certainly not*, 8 = *certainly*). Furthermore, bipolar items ( $\alpha = .94$ ) asked participants whether the decision followed from, and was related to one of either principle (1 = *Thou shalt not kill*, 8 = *Thou shalt save*). In addition participants were asked if during the decision making process the principle “Thou shalt not kill” was more important than the principle “Thou shalt save”, and vice versa (1 = *certainly not*, 8 = *certainly*). The “Thou shalt not kill” scale demonstrates that participants confronted with the footbridge dilemma indicated that their decision was significantly more based on the principle “Thou shalt not kill” ( $M = 6.18$ ,  $SD = 1.56$ ). Participants who read the trolley dilemma based their decision significantly less on this principle ( $M = 4.46$ ,  $SD = 1.55$ ),  $F(1, 49) = 15.25$ ,  $p < .001$ . Scores regarding the “Thou shalt save” scale shows the opposite pattern. Participants confronted with the footbridge dilemma indicated that their decision was significantly less based on the principle “Thou shalt save” ( $M = 3.68$ ,  $SD = 1.80$ ), whereas participants

who read the trolley dilemma were significantly more influenced by the principle “Thou shalt save” ( $M = 7.25$ ,  $SD = .66$ ),  $F(1, 49) = 86.83$ ,  $p < .001$ . In addition, the bipolar scale demonstrates that participants in the trolley dilemma based their decision to a significant greater extent on the principle “Thou shalt save” ( $M = 6.77$ ,  $SD = .66$ ), whereas participants in the footbridge dilemma were more influenced by the principle “Thou shalt not kill” ( $M = 3.14$ ,  $SD = 1.91$ ),  $F(1, 49) = 73.72$ ,  $p < .001$ .

<sup>3.3</sup>Gender did not interact with the hypothesis of our studies and was dropped from analyses.

<sup>3.4</sup>Participants were asked questions whether they associated a symbol with either the principle “Thou shalt not kill” or “Thou shalt save” (1 = *totally disagree*, 8 = *totally agree*). For “Thou shalt not kill” this resulted in the peace-logo ( $M = 4.78$ ), an image of the Ten Commandments ( $M = 5.40$ ), and the logo of a Dutch organization called “Tegen Zinloos Geweld” (Against Useless Violence) which is a ladybird ( $M = 6.43$ ). For “Thou shalt save” the pre-test resulted in the logo of the Red Cross ( $M = 6.35$ ), the symbol of an ambulance ( $M = 6.82$ ), and an image of a lifebuoy ( $M = 6.83$ ). Furthermore, we asked bi-polar questions whereby participants had to indicate for which principle they thought the image stands for, and which principle the image was most related to (1 = *Thou shalt not kill*, 8 = *Thou shalt save*). The results for the “Thou shalt not kill” symbols were as follows: peace-logo ( $M = 3.28$ ), the Ten Commandments ( $M = 3.00$ ), and the “Against useless Violence” logo ( $M = 2.73$ ). The “Thou shalt save” symbols showed the following results: the Red Cross logo ( $M = 6.63$ ), the ambulance symbol ( $M = 6.67$ ), and the lifebuoy ( $M = 6.98$ ). When asked to make a dichotomous choice regarding which principle the image best fitted 83%, 85% and 85% choose that the peace-logo, image of the Ten Commandments, and the logo of “Against Useless Violence” respectively best fitted the principle of “Thou shalt not kill”, whereas 100%, 95% and 100% of the respondents choose the logo of the Red Cross, an ambulance, and the life-buoy respectively as best fitting the principle of “Thou shalt save”.

<sup>3.5</sup>The foundation “Tegen Zinloos Geweld” (Against Useless Violence) strives for a society in which everyone is aware of the consequences of useless violence. The foundation was created in response to social unrest following a number of incidents in the Netherlands in the period 1996-1997 where victims were slain without reason. Since then the foundation is active. “Useless violence” is a folk concept and does not imply that there is something like “useful violence”. Incidents are characterized as “useless violence” where there is no reason for the offense as another type of crime to call (for example, murder with robbery, homicide racist, lust murder, infanticide, from the stalled traffic quarrel, etc.).

<sup>3.6</sup>In order to control for the influence of numbers of puzzle solved, we inserted the number of resolved puzzles as a covariate. We have done this because we think that solving puzzles leads to a qualitatively different process than when the puzzles are not solved. Participants who actually have solved (all) the puzzles probably have more deeply processed the symbols resulting from making the puzzles and searching for a solution, than participants who failed to come up with a solution. We argue that participants who did not solve (all) the puzzles, did not see the forest behind the trees anymore as a result of which they did not have a keen eye on the primes. Although each participant was confronted with the solution of the puzzles, just before, during and after making the puzzles, it could be possible that participants solving the puzzles have cognitively visualized the symbols better, because they were actively looking for and found a solution. This way, participants solving the puzzles could have had an advantage regarding the influence of the subtle primes over participants who did not manage to solve the puzzles.

# Chapter 4

## Embodied Power to the People: Powerful Postures Decrease the Inhibition to Intervene in Moral and Bystander Dilemmas

*This paper proposes that when confronted with situations in which it is difficult to decide what to do, such as moral and bystander dilemmas, people often feel inhibited to intervene. Weakening behavioral inhibition, therefore, should positively affect the willingness to intervene in these dilemmas. Developing an embodied power perspective on interventions within moral and bystander dilemmas, and building on earlier research linking power to decreased behavioral inhibition, we hypothesize that body postures associated with power lead people to intervene more in these dilemmas without people noticing the influence of their postures on their behavior. Supporting this hypothesis, in Study 1 participants adopting expanded body postures were more willing to intervene in footbridge dilemmas than participants adopting constricted or control postures. Study 2 found similar effects on actual helping behavior in bystander dilemmas. Thus, our findings suggest that embodied power can help overcoming intervention inhibition in moral dilemmas and bystander contexts.*

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Whether it is regarding people in need on our streets, or with respect to more global societal problems (e.g., global poverty, the current environmental crises or, genocide), people frequently feel inhibited to take action when confronted with these difficult situations (Keltner & Marsh, 2007; Staub, 1989; 1999; Story & Forsyth, 2008). For example, during the Holocaust bystanders regarded themselves as passive, lacking control and low in efficacy (Monroe, 2008). Furthermore, the literature on morality tells us that many moral dilemmas involve difficult decisions about what to do, because people have to choose between different actions with good reasons for each of the actions involved (e.g., Greene et al., 2001; Hauser, 2006). Moreover, Kant (1785/1959) proposed that acting with at least some level of behavioral inhibition may be appropriate when responding to moral dilemmas. Therefore, it can be argued that when confronted with situations in which it is difficult to decide what to do, such as moral and bystander dilemmas, people often feel inhibited to intervene (Latané & Nida, 1981; Van den Bos et al., 2010; Van den Bos et al., 2009).

Research on morality supports this inhibition perspective. Consider a conceptually important moral dilemma, the footbridge dilemma (Thomson, 1986). In this dilemma, a runaway trolley threatens to kill five people who are not able to leave the railroad track in time. These five people can only be saved by pushing a person off a footbridge. Research shows that only ten percent of a sample of sixty thousand subjects approved of taking action (Hauser, 2006). Following this one could argue that inaction is the default reaction within footbridge dilemmas. One explanation for this finding is that because the dilemma is an emotionally engaging situation, participants are in doubt whether or not they should intervene in the footbridge dilemma (Greene et al., 2001). This inhibition to intervene is demonstrated by slower reaction times when approving intervention in footbridge dilemmas (Greene et al., 2001; Hauser, 2006; Koenigs et al., 2008). To the extent that these reaction times indicate that participants find it difficult to decide what to do in footbridge dilemmas, this suggests that people feel inhibited to intervene in these dilemmas

(Van den Bos et al., 2010).

The same is true for another important dilemma: bystander dilemmas. Previous work revealed that people do not intervene in situations in which people need help (e.g., Latané & Nida, 1981). One important reason for the bystander effect is that as a result of a non-intervening audience people feel inhibited to intervene in bystander situations (Latané & Darley, 1968; Latané & Nida, 1981; Karakashian, Walter, Christopher, & Lucas, 2006; Schwartz & Gottlieb, 1976, 1980; Van den Bos et al., 2009). According to Latané and Nida (1981) bystanders who intervene run the risk of embarrassment if, say, the situation is misinterpreted and actually is not an emergency. The presence of others therefore can inhibit helping when individuals fear that their behavior can be seen and evaluated negatively (Latané & Nida, 1981).

Taken together, difficult decisions about what to do within moral and bystander dilemmas regularly lead to behavioral inhibition (Latané & Nida, 1981; Van den Bos et al., 2010; Van den Bos et al., 2009). This intervention inhibition often is expressed using metaphors related to power and size. For example, participants defended their inaction regarding global warming by claiming they felt as “infinitesimal beings in the order of things” (Stoll-Kleemann, O’Riordan, & Jaeger, 2001, p. 112). Furthermore, Keltner and Marsh (2007, p. 6) state that people remain inactive to societal problems and moral issues “larger” than themselves. In other words, people use physical metaphors associated with being small to account for their powerlessness leading to intervention inhibition in dilemmas.

From previous work we know that people use metaphors to understand the world (Lakoff & Johnson, 1999). This metaphor system is grounded in physical experiences. For example power and size are intimately linked in everyday physical experiences such that many power holders in politics or, business, constructed tall and sizeable buildings serving as symbols of power (Sudjic, 2005). Illustrating this, it has been said that George Washington, the first president of the United States of America, rejected the first architectural designs of the White House as being

too small. To fit the presidency's status of this new national power George Washington recommended enlarging the residence by 30%. In addition, the Forbidden City in Beijing, Versailles near Paris, the former Twin Towers in New York, the Burj in Dubai, and the Shanghai World Finance Centre in China all serve as symbols of power to highlight the success and (emerging) economic power of nations or institutions (Wood, 2008).

This perceptual sensitivity to the physical indicators of power does not only influence the apparent size of manmade structures, but stemming from our biological heritage this sensitivity seems to be based in the human body as well (De Waal, 1996, 2005; Schubert, 2005). For example, by expanding their movements and posture humans display powerfulness and powerlessness in the same characteristic way as primates (De Waal, 2005; Eisenberg, 1937; Weisfeld, & Linkey, 1985). Alpha males in chimpanzee and gorilla troops occupying powerful positions show their power by means of their body posture. They enlarge and increase their body to emphasize their dominance (Schaller, 1963, 1965; De Waal, 1982). During greeting ceremonies within chimpanzee troops the alpha male shows his dominance by "enlarging" his body through taking up an extended and erected body posture. Submissive chimpanzees literally bow down and obey to the alpha male. This way a difference in body volume is created between chimpanzees that normally are equally big in size, thereby expressing the difference in power (de Waal, 1982). By the same token, small politicians (e.g., the Italian president Silvio Berlusconi and the French president Nicolas Sarkozy) wear shoes with sizeable heels or ask for a raised platform to stand on throughout debates or television interviews (De Waal, 2005).

Thus, when people use physical metaphors related to power and size to explain their intervention inhibition within dilemmatic situations, we argue that people's inhibition to intervene in dilemmatic situations may be grounded in embodied states of powerlessness. Furthermore, we propose that if this indeed is the case, then weakening behavioral inhibition by means of embodied states of power should positively affect the willingness to intervene within moral and bystander dilemmas.

## The Current Research

According to recent theories on embodied cognition abstract concepts, such as power, are grounded in the body's somatosensory system. Activating concrete sensory experiences should influence abstract thoughts of important concepts, because these concrete sensory cues are part of the representation of these concepts (Barsalou, 1999). Research on the non-verbal communication of power shows that body posture indeed influences individuals' power appraisals. For instance, postural expansion is associated with impressions of power and dominance, whereas constricted body postures are associated with being powerless and submissive (Argyle, 1988; Aries, Gold, & Weigel, 1983; Gifford, 1991; Hall, Coats, & Smith LeBeau, 2005; Keltner, Gruenfeld, & Anderson, 2003; Mehrabian, 1972; Schwartz, Tesser, & Powell, 1982). Moreover, Tiedens and Fragale (2003) found that individuals experienced more power when adopting expanded body postures, but less power in constricted postures.

Furthermore, power is associated with less inhibited behavior (Anderson & Berdahl, 2002; Keltner et al., 2003; Keltner, Young, Heerey, Oemig, & Monarch, 1998; Leroy & Brauer, 2007). For example, Van den Bos and colleagues (2010) reminded Dutch and Japanese participants about their behavior when occupying positions of power. After power was made salient through this manipulation, a state version of Carver and White's (1994) behavioral inhibition scale showed less behavioral inhibition for both Dutch and Japanese participants. Recent research has also found that priming participants with an explicit cognitive representation of power with the help of a word puzzle task, as well as priming power implicitly by means of a lexical decision task, leads to a greater willingness to intervene in moral dilemmas (Kumagai & Van den Bos, 2009; Van den Bos et al., 2010). Furthermore, powerful people experience less constraint and reduced deliberation leading to an increased propensity to act (Galinsky, Gruenfeld, & Magee, 2003) and approach behavior (Lammers, Galinsky, Gordijn, & Otten, 2008; Smith & Bargh, 2008). Based on these findings one can conclude that power is

intimately linked with overcoming behavioral inhibition. If it is true that both postural expansion is associated with feeling more powerful and power is associated with less behavioral inhibition, then it should be the case that embodied grounded powerful body postures should overcome behavioral inhibition in footbridge and bystander dilemmas.

Two studies test whether activating concrete sensory cues related to embodied power influence the willingness to intervene in footbridge dilemmas (Study 4.1) and actual helping behavior in bystander dilemmas (Study 4.2). In both studies we used the manipulation of body posture by Tiedens and Fragale (2003). Participants with a powerful body posture placed their arms on the backs of the two empty chairs next to them and crossed one of their legs such that the ankle of that leg rested on the thigh of the other leg stretching it beyond the edge of the chair. Participants with a powerless body posture placed their hands under their thighs and on the seating of the chair they were sitting on, dropped their shoulders and placed their legs together. Our manipulation checks showed that expanded body postures are associated with perceived power. Therefore we hypothesized that participants with expanded body postures are more willing to intervene in footbridge and bystander dilemmas, compared to participants with constricted body postures.

### **Study 4.1**

In Study 4.1, we examined the impact of embodied power on willingness to intervene in footbridge dilemmas. Participants were seated in either a powerful (expanded posture), powerless (constricted posture), or control body posture (normal posture).

#### *Method*

*Participants and design.* Fifty-nine students (14 men, 45 women) at Utrecht University participated in the experiment, receiving € 6 or course credits for their participation.<sup>4.1</sup> Participants were randomly assigned to one of three conditions of our body posture manipulation (powerful vs. powerless vs. control).

*Experimental procedure.* Participants were seated in the middle chair of three chairs in front of a laptop. They were attached to a skin conduction measurement device and were told that the skin conduction sensors measured their levels of physiological arousal during the experiment. In reality this was not true. Taken from Tiedens and Fragale (2003) the instructions posited participants in either a powerful (expanded), powerless (constricted), or control body posture which they kept throughout the experiment. In the powerful condition, participants were told that for the physiological data collection to be accurate they had to keep their arms at heart level. Therefore, participants were asked to place their arms on the backs of the two empty chairs next to them and cross one of their legs such that the ankle of that leg rested on the thigh of the other leg stretching it beyond the edge of the chair (Figure 4.1).



*Figure 4.1.* An example of the required body posture in the powerful condition used in both Study 4.1 and Study 4.2.

In the powerless condition, participants were instructed to keep their hands below heart level by placing them under their thighs and on the

seating of the chair they were sitting on, drop their shoulders and place their legs together (Figure 4.2).



*Figure 4.2.* An example of the required body posture in the powerless condition used in both Study 4.1 and Study 4.2.

In the control condition, participants were asked to sit on the chair as they normally would do when sitting behind a desk. Because of their body posture and the skin conduction sensors, participants could not use the keyboard. Participants were told that the computer automatically would lead them through the experiment. In addition, participants were instructed to give their answers to the dependent variables orally. The answers were taped.

After the instructions, participants read the following footbridge dilemma:

*You are standing on a footbridge crossing a railroad track. While you are standing next to a stranger, suddenly a runaway trolley comes hurtling down the railroad track. Further down the railroad track five people are working and*

*they cannot possibly leave the railroad track in time. If the trolley proceeds its present course it will crash into the five railroad workers and they will be killed in a fatal accident. The only way to save the five people is to push this man off the bridge and into the path of the trolley. The body of this person will break the speed of the trolley as a result of this the trolley will stop and the five persons will survive. The person thrown from the footbridge will certainly die.*

After reading the dilemma participants were asked to what extent they had the urge to sacrifice the one person in order to save the five others, were willing to sacrifice the one person on the footbridge, whether they would push the person from the footbridge, to what extent they felt inhibited to sacrifice the one person to save the five others, inclined to save the life of the person on the footbridge, felt inhibited to so save the five persons on the railroad track at the expense of one, felt obstructed to sacrifice the one person in order to save five, and felt they could not save five persons at the expense of one (1 = *certainly not*, 7 = *certainly*). After recoding the answers to the last five questions, answers on all questions were averaged to form a reliable scale regarding participants' willingness to intervene in the dilemma ( $\alpha = .82$ ).

Participants were then asked to rate how they felt at the moment on the items of the PANAS, (1 = *not at all*, 7 = *very strongly*). The PANAS was included to determine whether our manipulation triggered any unwanted positive or negative affect. The PANAS consists of two subsets of items, one measuring positive and one measuring negative affect (Watson et al., 1988). Both subscales were averaged ( $\alpha$ 's = .88 and .92, respectively). In both Studies 4.1 and 4.2 ANOVAs on the positive and negative subsets of the PANAS yielded no significant effects, all multivariate and univariate  $F$ s < 1. This suggests that difference in affective states cannot explain the findings reported here.

Furthermore, we asked whether the required body posture gave participants an experience of power (1 = *certainly not*, 7 = *certainly*).

In addition, a funneled debriefing procedure probed participants for suspicion concerning our embodied power manipulation (cf. Chartrand & Bargh, 1996). In both Studies 4.1 and 4.2 nobody indicated any suspicion regarding the purpose of the experiment, nor did they indicate that their body posture had affected their reactions in the dilemmas. Finally, participants were thanked and debriefed.

### *Results*

*Experienced power.* An ANOVA yielded a main effect of the body posture manipulation,  $F(2, 56) = 25.00, p < .001, \eta^2 = .43$ . Planned comparisons revealed that participants with expanded body postures felt more powerful ( $M = 3.70, SD = 1.70$ ) than participants with constricted postures ( $M = 1.95, SD = 1.08$ ),  $F(1, 57) = 24.83, p < .001, \eta^2 = .21$ . Furthermore, participants with expanded postures felt more powerful than participants with control postures ( $M = 2.20, SD = .96$ ),  $F(1, 57) = 10.24, p < .003, \eta^2 = .15$ . Participants with constricted or control postures did not differ in experienced power,  $F < 1, p > .75$ .

*Willingness to intervene.* An ANOVA revealed the predicted effect of body posture  $F(2, 56) = 3.79, p < .03, \eta^2 = .12$ . Planned comparisons revealed that participants in the powerful condition were more willing to intervene in the footbridge dilemma ( $M = 3.07, SD = 1.12$ ) than participants in the powerless condition ( $M = 2.25, SD = 0.88$ ),  $F(1, 57) = 6.77, p < .02, \eta^2 = .11$ . Moreover, participants in the powerful condition were more willing to intervene in the footbridge dilemma ( $M = 3.07, SD = 1.12$ ), than participants in the control condition ( $M = 2.41, SD = .96$ ),  $F(1, 57) = 4.26, p < .05, \eta^2 = .07$ . Participants in the powerless condition and participants in the control condition did not differ in their willingness to intervene,  $F < 1, p > .65$ .

## **Study 4.2**

The results of Study 4.1 suggest that powerful body postures lead to a greater willingness to intervene in footbridge dilemmas. Study 4.2 sought to replicate these findings, this time extending our line of reasoning

to actual behavior in an emergency situation: helping a person who is choking while bystanders are present (vs. absent). Because in Study 4.1 no significant difference between the powerless and control condition regarding experienced power and willingness to intervene was found, the control condition was dropped.

### *Method*

*Participants and design.* Sixty-six students (19 men, 47 women) at Utrecht University participated in the experiment, receiving € 6 or course credits for their participation. Participants were randomly assigned to one of the conditions of a 2 (body posture: powerful vs. powerless) x 2 (bystanders: present vs. absent) factorial design.

*Experimental procedure.* Participants were invited to participate in a marketing study on evaluations of different candies while watching a documentary. Participants sat in front of a laptop and were attached to a skin measurement device. They were told that the skin sensors measured the influence of processing information and tasting experiences on physiological reactions. In reality this was not true. Participants were asked to taste various pieces of candy to be evaluated by answering a questionnaire after watching the documentary.

The same powerful and powerless body postures from Study 4.1 were used. In all conditions, participants sat opposite to another participant (which in reality was a confederate) with a table containing the laptops between them. In the bystanders present condition, two additional participants (also confederates) were seated to the left and right of the participant. In the bystanders absent condition, no extra confederates were present. The confederates were also connected to the skin conduction sensors and seated behind laptops in the same body posture as participants.

Participants were told that people very often eat candy while watching television. Therefore the candy brand wanted to measure physiological arousal in an environment that closely resembled the natural setting of eating candy. After the instructions, participants watched for 15 minutes a silent nature documentary on the computer while eating

candy. Participants were told that it was important to pay close attention to the contents of the documentary because they would be asked several questions regarding the contents afterwards. To make intervention in the emergency situation difficult the instructions emphasized that the physiological data would only be useful if enough data were collected. Therefore participants were instructed to watch the entire documentary and remain seated until the computer told them they could disconnect themselves from the sensors.

After the instructions, and while watching the documentary and tasting candies, every participants sat for about 7 minutes in their identified body posture. Then the confederate sitting opposite to the participant choked on one of the candies for 90 seconds. As dependent variables we measured the number of seconds it took before the participant reacted, and whether the participant actually approached the choking confederate to offer help.

At the end of the experiment, participants were asked whether their body posture gave them an experience of power, authority, mandate, feeling powerful and feeling suppressed (1 = *certainly not*, 7 = *certainly*). After recoding the answer to the last question, answers were averaged to form a reliable scale of experienced power ( $\alpha = .90$ ). Finally, participants were thanked and debriefed.

### *Results*

*Experienced power.* An 2 x 2 ANOVA yielded an effect of body posture  $F(1, 62) = 16.20, p < .001, \eta^2 = .21$ . Participants with expanded body postures felt more powerful ( $M = 3.68, SD = 1.43$ ) than participants with constricted postures ( $M = 2.42, SD = 1.09$ ). We did not find an effect of bystander situation,  $F(1, 62) = 2.33, p > .14, \eta^2 = .04$ . Also we did not find an interaction effect,  $F < 1, p > .48, \eta^2 = .04$ . Therefore, we can conclude that the manipulation of power by means of body posture was induced successfully.

*Response latencies.* An 2 x 2 ANOVA revealed a main effect of the bystander manipulation,  $F(1, 62) = 12.48, p < .002, \eta^2 = .17$  showing that participants in non-bystander situations started to help faster ( $M = 27.18,$

$SD = 18.69$ ) than participants in bystander situations ( $M = 44.52$ ,  $SD = 24.83$ ). This finding indicated that we replicated the original bystander effect. No main effect of body posture was found,  $F(1, 62) = 2.43$ ,  $p > .12$ ,  $\eta^2 = .04$ . Moreover, we found the predicted interaction effect between body posture and bystander situation,  $F(1, 62) = 11.50$ ,  $p < .002$ ,  $\eta^2 = .16$ . Table 4.1 presents the means and standard deviations. As hypothesized, in bystander situations participants with powerful body postures started to help significantly faster than participants with powerless postures,  $F(1, 65) = 9.83$ ,  $p < .004$ ,  $\eta^2 = .13$ . In non-bystander situations no significant effect of body posture was found,  $F(1, 65) = 1.39$ ,  $p > .24$ ,  $\eta^2 = .02$ . Furthermore, the bystander effect was replicated among participants who had adopted powerless postures as they helped significantly faster in the bystander absent condition than in the bystander present condition,  $F(1, 65) = 23.52$ ,  $p < .001$ ,  $\eta^2 = .27$ . The bystander effect was eliminated among those with powerful postures as those in the bystander present conditions were not slower to help than those in the bystander absent condition,  $F < 1$ ,  $p > .95$ ,  $\eta^2 = .00$ .

|              | Bystanders |           |          |           |
|--------------|------------|-----------|----------|-----------|
|              | Present    |           | Absent   |           |
| Body posture | <i>M</i>   | <i>SD</i> | <i>M</i> | <i>SD</i> |
| Powerful     | 32.59      | 23.05     | 31.88    | 23.79     |
| Powerless    | 57.19      | 20.40     | 22.77    | 11.19     |

*Table 4.1* Willingness to help: Number of seconds before helping someone who is choking as a function of bystander present or absent and a powerful or powerless body posture

*Helping behavior.* We conducted logistic regression analyses using the bystander situation and participants' body posture as the independent variables and whether participants actually offered help to the choking confederate (*yes/no*) as dependent variable. Table 4.2 presents the mean

percentages of participants who helped. As expected, the embodiment of power significantly predicted actual helping behavior in the bystander situation,  $b = 19.10$ ,  $df = 1$ , Wald (1) = 7.31,  $p < .008$ . In bystander situations participants with powerful body postures helped significantly more than participants with powerless postures,  $\chi^2(1, N = 33) = 8.93$ ,  $p < .004$ . In non-bystander situations no significant effect of body posture was found,  $\chi^2(1, N = 33) = 0.75$ ,  $p > .38$ . Furthermore, the bystander effect was replicated among participants who had adopted powerless postures as they helped significantly more in the bystander absent condition than in the bystander present condition,  $\chi^2(1, N = 33) = 5.54$ ,  $p < .02$ . The bystander effect was eliminated among those with powerful postures as those in the bystander present conditions did not help less than those in the bystander absent condition,  $\chi^2(1, N = 33) = 2.43$ ,  $p > .11$ .

| <i>Body Posture</i> | Bystanders      |                  |                 |                  |
|---------------------|-----------------|------------------|-----------------|------------------|
|                     | Present         |                  | Absent          |                  |
|                     | <i>Powerful</i> | <i>Powerless</i> | <i>Powerful</i> | <i>Powerless</i> |
| Actually helping    |                 |                  |                 |                  |
| Yes                 | 70.6%           | 18.8%            | 43.8%           | 58.8%            |
| No                  | 29.4%           | 81.2%            | 56.2%           | 41.2%            |

*Table 4.2* Percentage of people that actually offered help to someone who is choking as a function of bystander present or absent and a powerful or powerless body posture

### General Discussion

Two studies demonstrate that powerful body postures influence the propensity to take action in dilemmatic situations. In Study 4.1 individuals with powerful body postures were more willing to intervene in footbridge dilemmas, than individuals with powerless or control body postures. Study 4.2 demonstrated that individuals with powerful body

postures reacted faster and actually helped a choking confederate more in bystander dilemmas compared to participants with powerless postures.

The current research joins recent findings relating morality to embodied cognition, for example moral purity and physical cleansing (Zhong & Liljenquist, 2006), disgust and extraneous bodily sensations (Schnall, Haidt, Clore, & Jordan, 2008), weight of an object and perceived justice (Jostmann, Lakens, & Schubert, 2009). In the current research, we identified and focused on other dimensions important in moral dilemmas, behavioral inhibition and embodied power. Because of the inhibition to intervene in moral dilemmas, the current research shows that embodied power matters. People with an expanded powerful body posture overcome their inhibition to intervene and are more willing to intervene in footbridge dilemmas than people with a constricted powerless body posture. Thereby, the current research implies there is more to the reason versus intuition discussion regarding morality (e.g. Haidt, 2001; Pizarro & Bloom, 2003). Moral decision making is also influenced by the body's somatosensory system, a possibility suggested but not tested by Greene and colleagues (2009). Besides being important in moral dilemmas, the current research also shows that embodied power matters in other inhibition related dilemmas: bystander dilemmas.

Reducing the bystander dilemma is an important goal for both psychologists and society at large, but has been proven difficult to attain (Latané & Nida, 1981). Research on intervention within bystander dilemmas normally tries to answer the question why people often do not take action when action is called for (Levine & Crowther, 2008), whereas understanding the psychological factors that induce people to intervene within bystander dilemmas has received little attention (Latané & Nida, 1981). Following this, the present paper has demonstrated the novel findings that embodied representations of power can overcome intervention inhibition within bystander situations.

The embodied power literature thus far focused on a perceptual basis by finding evidence for the vertical and size dimensions of power (Schubert, 2005; Schubert et al., 2009). Furthermore, as far as we know,

the main body of research on embodiment focuses on the influence of embodied states on appraisals, evaluations, word processing and judgments. For instance, Williams and Bargh (2008) concentrated on the consequences of activating the concept of warmth, by holding a hot or cold therapeutic pad, on a choice of reward. In other words, they measured the effect of an embodied state on choosing, but not on social intervention behavior. Study 4.2 takes embodiment research one step further by demonstrating that embodied power positively influences behavior within dilemmatic situations: offering help to a choking person in a bystander dilemma. Therefore, to the best of our knowledge, we are the first to show that embodied experiences, such as embodied power, can have a direct influence on social intervention behavior, such as helping in an emergency situation.

Finally, the finding that embodied power can overcome intervention inhibition within dilemmatic situations can be contrasted with earlier insights mainly focusing on the harmful and possible corrupting effects of power (Kipnis, 1972). Following Fiske and Berdahl (2007), the current research shows that power, and especially embodied power, can positively affect important social outcomes within actual interacting small groups. Embodied power positively affects the possibility of power as an obligation to help others. Therefore, our findings are in line with growing evidence that powerful people can be generous and can behave in ways benevolent towards those who are in need (Handgraaf, Van Dijk, Vermunt, Wilke, & De Dreu, 2008; Lee & Tiedens, 2001). Our findings suggest that embodied power can induce people to contribute to the greater good by preventing people from becoming bystanders with all its detrimental consequences.

### Footnote

<sup>4.1</sup>Gender did not interact with the hypotheses of our studies and was dropped from the analyses.



# Chapter 5

Summary and General Discussion



**M**orality and justice can be seen as codes of conduct put forward by specific groups or society to make people cooperate and relate to each other, hence making social life possible (e.g., De Waal, 2006; Haidt, 2007; 2008; Haidt & Kesebir, in press; Hauser, 2006; Krebs, 2008; Narvaez, 2009; Turiel, 1983, 2006). Supporting this notion, it has been acknowledged that moral outlooks are part of solving the great societal problems of our time, such as the current environmental crises, ethno-political conflict, genocide, terrorism, overpopulation, migration, refugees, and nuclear proliferation (Greene, 2002; Narvaez, 2009). In addition, morality satisfies a basic human need (the need to belong, Baumeister & Leary, 1995), by holding groups together (Haidt, 2007; Haidt & Kesebir, 2007), and also gives people a sense of purpose and meaning in life (Baumeister, 1991; Haidt & Kesebir, 2007). Therefore, because solving the great societal problems of our time have at its heart issues of morality (Greene, 2002; Narvaez, 2009) and because morality has existential implications (Haidt & Kesebir, 2007), investigating how people form judgments on, make decisions about, and act towards what is right or wrong signals the importance of research into morality (Haidt, 2008; Narvaez, 2009).

### **Morality: Affective-Intuitionist versus Rationalist Perspectives**

Ever since the days of Aristotle, thinkers have been intrigued by what the right course of action is when confronted with moral issues. Thus far, the debate regarding morality has largely been dominated by the emotion against reason controversy (e.g., Cushman et al., 2006; Greene et al., 2001; Greene et al., 2004; Haidt, 2001; Haidt & Björklund, 2008a; Monin et al., 2007; Moore et al., 2008; Nichols & Mallon, 2006; Pizarro & Bloom, 2003). Rationalists state that morality is caused primarily by processes of cognitive reasoning (e.g., Kohlberg, 1969; Piaget, 1932/1975; Turiel, 1983). Rationalist scholars assert that individuals rely on moral deliberation and the weighing of options, considering consequences and potential outcomes when reflecting on moral issues (Kant, 1785/1959;

Kohlberg et al., 1983; Narvaez, 2008, 2009; Nichols & Mallon, 2006; Pizarro & Bloom, 2003). In contrast, intuitionists argue that people's gut feelings about what is right or wrong cause thoughts about morality. In their view moral reasoning usually is a post-hoc construction, generated after responses to moral issues already have been given (e.g., Haidt, 2001; Kagan, 1984; Wilson, 1993). According to intuitionists, (affective laden) intuitions determine moral judgments (e.g., Damasio, 1994; Haidt, 2001, 2007, 2008; Haidt & Björklund, 2008a).

Sidestepping the current impasse of considering either the rationalist or intuitionist perspective as the primary perspective regarding morality (Haidt, 2003; Pizarro & Bloom, 2003), I took a different approach in the current thesis. That is, instead of a top-down perspective instigated or dominated by a certain theoretical perspective using their own prototypical moral situation (Monin et al., 2007), I adopted a more bottom-up approach. Towards this end I analyzed carefully with what situations people are confronted when responding to moral issues. This careful analysis is needed, I argued, because the variation in situations when doing research into morality requires attention when developing research paradigms, but more importantly when interpreting the research findings following the usage of these prototypical moral situations (Monin et al., 2007). In doing so, I followed suggestions by Monin and colleagues (2007) that how data regarding moral judgments, decisions, and behavior can be explained depends strongly on the specific nature of the situation under consideration. Furthermore, when analyzing moral situations it can be noticed that judgments, decisions, and behaviors pertaining to these situations are often malleable, given that it is not always clear what the right course of action is. For example, the direction of the moral compass depends on the specific situation individuals are in and changes with time. As a consequence people show considerable variation in their moral responses. Moreover, issues can enter and leave the moral domain, by processes of positive, negative, and neutral moralization influencing what people think is right or wrong (Rozin, 1999).

History is full of examples regarding the malleability of moral

judgments, decisions, and behaviors. One of the oldest parables about moral behavior, the Good Samaritan, points to the malleability of moral behavior of priests and Levites not acting upon their ethical standard of “love thy neighbor” in certain situations in contrast to the behavior of a Samaritan outcast who did act and did help the victim of a robbery. Replicating the parable of the Good Samaritan in an experiment, Darley and Batson (1973) showed that seminary students were less likely to help an individual in need when asked to hurry up because the experiment was running a couple of minutes late. In other words, even small situational time pressures may constrain pro-social behavior. Many more empirical studies support the malleability of moral judgments and decisions (see e.g., Aquino et al., 2009; Bandura, 1999; Batson et al., 1997; Detert et al., 2008; Fiske et al., 2004; Graham et al., 2009; Haidt & Graham, 2007; Laham et al., 2009; Mazar et al., 2008; Milgram, 1974). This observation led some authors to propose that moral principles can be perceived as strong opinions weakly held (Baron, 2002; Baron & Leshner, 2000; Baron & Spranca, 1997; Ritov & Baron, 1999). Incompatibilities between cognitions (e.g., “I have to hurry” versus “I have to help this person”), between cognitions and experiences (e.g., “I think this action is wrong” or “I experience fluency when reading about this behavior”), or between cognitions and behavior, as well as lack of information to confidently act regarding moral issues (Van den Bos, in press; Van den Bos & Lind, 2002) could all be held accountable for this malleability, because they contribute to the ambiguous nature of many moral situations and subsequently the influence of temporal available information.

When forming judgments or making decisions about justice and morality people often are faced with informational uncertainty (Van den Bos, 1999, 2001, in press; Van den Bos & Lind, 2002, 2009). This is related to the work on human decision making which reveals that human judgments are often formed under conditions of incomplete information (e.g., Kahneman et al., 1982; Phelps, 1970; Tversky & Kahneman, 1974). Building on these notions I argued in the present thesis that it may not be uncommon that people typically lack information about moral issues

(Van den Bos, 2003). Moreover, in many moral situations it is not quite clear what the right course of action is (Beauchamp, 2001; Greene et al., 2001). Related to this, the literature on morality tells us that many moral situations involve difficult decisions about what to do, because people have to choose between alternative actions with good reasons for each of the actions involved (e.g., Greene et al., 2001; Hauser, 2006). Furthermore, recent research demonstrates that people often are in doubt what to do or how to judge moral situations (Greene et al., 2001; Hauser, 2006; ; Koenigs et al., 2008; Van den Bos, in press; Van den Bos et al., 2010). Put differently, people have to choose between incompatible cognitions and alternative options leading to feelings of uncertainty and ambiguity (Van den Bos, in press; Van den Bos & Lind, 2002; Van Hiel & Mervielde, 2002). As a result of this ambiguity, moral judgments, decisions, and behavior can be influenced by information that is temporarily available to an individual, activated by all kinds of situational and contextual cues making responses towards moral issues malleable.

The proposition that ambiguity and the influence of accessible knowledge go together is supported by previous work suggesting that when situations are ambiguous knowledge that is temporarily cognitively most accessible will guide how people resolve such ambiguous situations (e.g., Bruner, 1957; Epley et al., 2007; Higgins & Bargh, 1987; Kay et al., 2004; Latané & Darley, 1968, 1970; Srull & Wyer, 1986; Stapel et al., 1997; Stapel & Marx, 2007; Van den Bos, 2002). Building on this notion, I have argued in the current thesis that people refer to knowledge that is temporally available when confronted with moral issues. I, therefore, proposed that people use this temporarily available knowledge to disambiguate ambiguous situations regarding moral issues, enabling them to make judgments, decisions, or act upon these issues. In other words, certain knowledge accessible prior to judgments, decisions, and behavior even influences responses towards moral issues. In the present thesis, three chapters were presented demonstrating that moral judgments, decisions, and behavior indeed can be influenced by information that is temporarily available to an individual, activated by various kinds of conceptually

meaningful situational cues.

The effects of situational contexts on moral conduct have received relatively little attention (Kurtines, 1986). Moreover, most psychological theories of morality postulate that morality lives within the individual (Darley, 1993). Consequently, I would like to emphasize that social psychology is the scientific discipline that studies that what people think, what they feel, and how they act is dependent on the specific situation they are in. Thus, a truly social psychological approach on judgments of, decisions about, and behavior towards moral issues should want to adopt a careful examination in what kind of social situations people engage moral issues. Sometimes modern social psychology tends to forget this situational component of its discipline and seems to be oriented predominantly toward revealing general laws of cognition, affect, and behavior (Van den Bos, 2009b). The implicit assumption often seems to be that these laws or general principles are robust for and independent of the situations in which people find themselves. Social psychology, in general, and situated or embodied perspectives on moral psychology in particular, may want to back up this important quest for general psychological principles or core motives, with appropriate attention to situational impetus and bodily postures on these principles and motives. So, instead of taking a top-down perspective starting from either a rationalist or an intuitionist theoretical perspective and looking for general laws of moral conduct, I took a bottom-up approach by analyzing what kind of situations individuals face, or what kind of bodily postures they adopt, when confronted with moral issues. In the following section I will briefly summarize the line of reasoning and the findings of the empirical chapters presented in this thesis, and finally offer suggestions for future research.

### **Knowledge Activation and Contrast and Assimilation Effects Regarding What People Think is Right or Wrong**

Classical research on the activation of knowledge structures shows that this may result in assimilation (judgments and evaluations shift toward the

activated knowledge), as well as in contrast (judgments and evaluations shift away from the activated knowledge) when judging or evaluating an ambiguous situation. Building on and extending social judgment literature, as well as recent insights into morality, in the present thesis I first of all examined the influence of temporarily accessible knowledge on moral judgments. The information people have to rely on when making these evaluations often is ambiguous and incomplete (Griffin & Ross, 1991). Following this, I argued that moral judgments are sensitive to the influence of available knowledge.

Taken together, in Chapter 2, two studies were presented finding evidence for knowledge accessibility effects in response to moral issues. That is, Study 2.1 indeed showed that priming participants with a watermark of Lady Justice causes participants to judge an ambiguously described person as more moral than when they are not primed with Lady Justice. In other words, exposing individuals to an abstract symbol of morality lead people to interpret an ambiguous situation in more moral terms leading to the assimilation of moral judgments towards the meaning of the symbol. Extending this insight, Study 2.2 again showed assimilation effects such that presenting abstract moral symbols (e.g., Lady Justice) resulted in more moral judgments of an ambiguously described person than presenting abstract immoral symbols (e.g., a swastika). Furthermore, this study also demonstrated contrast effects: When concrete moral exemplars (e.g., Mother Teresa) were presented to participants, they compared the ambiguous stimulus person with the immoral exemplar and hence the ambiguous stimulus person was considered to be less moral than when participants were exposed to concrete immoral exemplars (e.g., Bin Laden).

The results of Chapter 2 give more insight into how individuals form moral judgments thereby extending the literature on how moral judgments are formed. Within research on moral judgments little attention has been paid to the underlying processes of moral judgments (Van den Bos, 2003). Chapter 2 showed that knowledge that is temporarily most accessible during the decision making process influences how people

judge an ambiguous moral issue. This temporarily cognitively accessible information can be made salient by means of contextual cues. When abstract trait concepts are accessible, the accessible context information is used as an interpretation frame. Whereas when concrete person exemplar information is accessible, this will be used as a comparison standard. Which frame is used influences the direction of moral judgments and leads either to assimilation (interpretation frame) or contrast (comparison standard) of moral judgments. Take together, the assimilation and contrast of moral judgments suggests that moral judgments may be influenced by the knowledge accessibility effect, thereby changing the evaluation of the same moral event.

### **Supraliminal and Subliminal Knowledge Activation and a Goal Conflict Perspective on Deontological and Utilitarian Moral Principles**

Besides measuring the influence of available knowledge on moral judgments, in Chapter 3 I also showed that temporarily activated knowledge can influence decisions with respect to how people try to solve moral dilemmas. By demonstrating that the willingness to intervene in moral dilemmas is susceptible to the impact of available knowledge, my line of reasoning presented in this thesis is extended beyond the findings in Chapter 2 regarding moral judgments, to moral decision making. By doing so, the results of Chapter 3 go further than current models on morality that only capture the phenomenology and causal processes of moral judgment, but not of moral decision making (Haidt & Björklund, 2008b; Narvaez, 2008), thereby being an important supplement for our understanding of morality.

The literature on how people solve moral dilemmas often contrasts two philosophical frameworks: utilitarianism and deontology. However, empirical data regarding the influence of these moral frameworks on how people solve moral dilemmas is based on correlational fMRI data without operationalizing or manipulating either moral framework.

Chapter 3 examined how people solve moral dilemmas in which utilitarian principles (more specifically the principle “Thou shalt save”) or deontological principles (more specifically the principle “Thou shalt not kill”) are in conflict. I proposed that making a decision within certain moral dilemmas gives rise to the activation of both these conflicting principles. Furthermore, based on the idea that the conflict between utilitarian and deontological principles essentially is a goal conflict, I argued that the most salient principle during the decision making process will influence how people solve moral dilemmas.

From the goal literature we know that people will pursue a goal when the goal is associated with positive affect, in other words when the goal is desirable (Bargh et al., 2001; Custers & Aarts, 2005, 2007a). The morality literature tells us that in moral dilemmas people have to choose between different actions with good reasons for each of the actions involved (e.g., Beauchamp, 2001; Greene et al., 2001; Hauser, 2006). In other words, although people in certain moral dilemmas, such as footbridge dilemmas, have to choose between the conflicting principles “Thou shalt not kill” and “Thou shalt save”, both are highly desirable.

Furthermore, research has shown that for goal pursuit to happen, the goal concept has to be salient (Bargh et al., 2001; Moskowitz et al., 2004). The goal literature also suggests that rival alternative goals can be activated simultaneously and may compete with each other for mental resources, resulting in a conflict (Bargh & Barndollar, 1996; Kruglanski, et al., 2005). Moreover, goal system theory proposes that these different goal systems are highly flexible and context-dependent as a result of framing effects or relevant situational features activating the goal (Bargh & Gollwitzer, 1994; Frederick et al., 2002; Kruglanski et al., 2005). However, it is very likely that one goal will dominate the conflict (Lindenberg & Steg, 2007). More specifically, when goals are in conflict, the increased salience of one given focal goal results in this most salient focal goal having a stronger impact on behavior than the other less salient goal (Aarts et al., 2007; Bargh & Barndollar, 1996; Shah et al., 2002). Put differently, when conflicting goals are both perceived as desirable, difference in accessibility

determines which goal people are going to pursue.

Regarding the footbridge dilemma one could argue that participants are both motivated to “not kill” as well as “save” people in this type of dilemmas. Following goal theory I argued that when the environment or context makes the goal “save as many people as possible” more salient, for example by priming the symbol of the Red Cross, the “saving” goal dominates the goal conflict and individuals frame the dilemma as a saving problem. They probably pursue this utilitarian course of action at the expense of the “do not kill” goal and save five people at the expense of one. On the other hand, by making salient “do not kill”, for example by priming the symbol of the Ten Commandments, the “not kill” goal dominates the goal conflict and individuals frame the dilemma as a not kill problem. This triggers the pursuit of this goal at the cost of the “saving” goal whereby individuals refrain from saving five people at the cost of one.

Taken together, the findings of three studies strongly suggested that which goal has been made most salient during the decision making process, either “Thou shalt save” or “Thou shalt not kill”, influenced how people solve footbridge dilemmas. Study 3.1 showed that making salient the principle “Thou shalt save” in footbridge dilemmas resulted in a greater willingness to intervene, than when making salient the principle “Thou shalt not kill”. Study 3.2 replicated and extended these findings by using symbols that represent the respective moral frameworks as subtle situational cues. Study 3.2 demonstrated that when the principle “Thou shalt save” was primed by presenting related symbols supraliminal, individuals in footbridge dilemmas again showed a greater willingness to intervene, than when symbols regarding “Thou shalt not kill” or neutral symbols were presented.

In Study 3.3 priming the principle “Thou shalt save” again resulted in a greater willingness to intervene in footbridge dilemmas than priming the principle “Thou shalt not kill”, this time by presenting symbols related to the specific principles paravovealy. This suggests that the moral principles studied here can be activated subliminally by subtle situational

cues and influence the decisions that participants make in moral dilemmas outside their conscious awareness. This could explain why there often is a dissociation between moral judgments and the reasoning whether these judgments are based on explicitly understood principles (Hauser et al., 2007). The results of Study 3.3 suggest that the use of these principles during the decision making process can be unconscious and that therefore people often cannot verbalize having based their decisions on specific principles.

### **Embodiment of the Concept of Power and Intervention in Moral and Bystander Dilemmas**

Most of today's social psychology theorizing builds on the notion of semantic networks comprised of cognitive representations of a certain concept (Bargh, et al., 1996; Carlston, 1994; Dijksterhuis & Bargh, 2001; Dijksterhuis et al., 2001; Smith, 1998). In other words, according to these amodal theories, the meaning of one concept is defined only by other associated concepts (Barsalou, 1999; Harnad, 1990; Searle, 1980; Schubert et al., 2009). This results in cognitively elaborate representations of how people activate knowledge and represent concepts through quasi-verbal nodes associated by links through which activation spreads (Schubert, 2005; Winkielman et al., 2006). According to theories on embodied cognition there is a simpler and more parsimonious path to knowledge activation based on simpler representations, namely the body's somatosensory system (Barsalou, 1999; Schubert et al., 2009; Winkielman et al., 2006). Chapter 4 focused on the influence of accessible knowledge activated by embodied states (Caporael, 1996; Glenberg, 1997; Glenberg & Robertson, 2000; Wilson, 2002), such as embodied power, on decisions within morally dilemmatic situations, such as moral dilemmas as well as real helping behavior in bystander dilemmas. This perspective differs from the idea that individuals rely on elaborate cognitive representations and the weighing of options and consequences when reflecting on moral issues (Greene, 2005; Kohlberg, 1969; Winkielman et al., 2006; Van den

Bos, 2008). The perspective also extends beyond more classical theories on knowledge accessibility (Bargh et al., 1996; Carlston, 1994; Dijksterhuis & Bargh, 2001; Dijksterhuis et al., 2001; Smith, 1998).

Whether it is regarding people in need on our streets, or with respect to more global societal problems (e.g., global poverty, the current environmental crises or, genocide), people frequently feel inhibited to take action when confronted with these difficult situations (Keltner & Marsh, 2007; Staub, 1989, 1999; Story & Forsyth, 2008). Furthermore, the literature on morality tells us that many moral dilemmas involve difficult decisions about what to do, because people have to choose between different actions with good reasons for each of the actions involved (e.g., Greene et al., 2001; Hauser, 2006). In Chapter 4, therefore, I proposed that when confronted with situations in which it is difficult to decide what to do, such as moral and bystander dilemmas, people often feel inhibited to intervene (Latané & Nida, 1981; Van den Bos et al., 2010; Van den Bos et al., 2009). This intervention inhibition often is expressed using metaphors related to power and size (Stoll-Kleemann et al., 2001; Keltner and Marsh, 2007). From previous work we know that people use metaphors to understand the world (Lakoff & Johnson, 1999). This metaphor system is grounded in physical experiences. Thus, when people use physical metaphors related to power and size to explain their intervention inhibition within dilemmatic situations, I argued that people's inhibition to intervene in morally dilemmatic situations, such as moral and bystander dilemmas, may be grounded in embodied states of powerlessness. Furthermore, I proposed that if this indeed is the case, then weakening behavioral inhibition by means of embodied states of power should positively affect the willingness to intervene within moral and bystander dilemmas.

In Chapter 4, two studies tested whether activating concrete sensory cues related to embodied power influenced the willingness to intervene in footbridge dilemmas (Study 4.1) and actual helping behavior in bystander dilemmas (Study 4.2). Supporting our hypothesis, in Study 4.1 participants adopting expanded body postures were more willing to

intervene in footbridge dilemmas than participants adopting constricted or control postures. Study 4.2 found similar effects on actual helping behavior in bystander dilemmas. Thus, the findings in Chapter 4 suggest that embodied power can help overcoming intervention inhibition in moral dilemmas and bystander contexts.

## **Conclusions**

In the current thesis, social psychological experiments were being conducted on an issue that matters in real-life, that is morality (Haidt, 2007, 2008; Greene, 2002; Killgore et al., 2007; Narvaez, 2009). Furthermore, I argue that these experiments have relevance for, and are inspired by, many different social psychological perspectives (e.g., social judgment, goal theory, embodied cognition). Moreover, side-stepping the reason versus intuition controversy regarding moral issues, I proposed in this thesis that more exact insight into the psychological processes pertaining to moral conduct is needed (Van den Bos, 2003) as well as attention to the situational nature of human functioning (Van den Bos, 2009b). Following this proposition, I analyzed carefully with what situations people are confronted when responding to moral issues, thereby combining insights into fundamental psychological processes with a concept that is highly relevant for society.

This careful analysis was needed because the variation in situations when doing research into morality, whereby different theoretical perspectives use different prototypical situations, needs attention when developing research studies and interpreting the research findings following these different moral situations (Monin et al., 2007). According to the analysis I put forward here, moral dilemmas and other issues related to moral concerns often involve at least some level of ambiguity. Building on this assumption, I proposed that judgments of, decisions about, and behavior towards moral issues can be influenced by information that is temporarily available to an individual. The findings reported in this thesis support these assumptions and show the influence of temporarily

accessible information, activated by different kinds of situational and contextual cues such as abstract trait or concrete exemplar information, symbols and embodied states.

The influence of contextual and situational factors determining moral conduct has been endorsed by many empirical studies (e.g., Aquino et al, 2009; Batson, O'Quinn, Fuly, Vanderplass, & Isen, 1983, Darley & Batson, 1973; Isen & Levin, 1972; Kurtines, 1986; Latané & Darley, 1970; Milgram, 1974; Valdesolo & DeSteno, 2006). Although based on the same idea, I argue that the studies presented in the current thesis are more subtle, revealing more fine-grained processes pertaining to moral judgments. That is, I showed that using a symbol of morality and justice as a watermark, can have reliable and predictable effects on moral judgments (Chapter 2). I also revealed that symbols related to either "Thou shalt not kill" and "Thou shalt save" presented to individuals by means of a puzzling-task or paravoveally can systematically affect the willingness to intervene in moral dilemmas (Chapter 3). Moreover, to the best of my knowledge, I was the first to address the influence of embodied states on what people do in morally dilemmatic situations, such as moral and bystander dilemmas (Chapter 4). In what follows I will discuss some implications of the studies presented here. I will also note some avenues for future research.

### **Knowledge accessibility**

As noted, Chapter 2 revealed the impact of the knowledge accessibility effect on moral judgments, resulting in either assimilation or contrast effects. Although ample research has shown the influence of the knowledge accessibility effect (e.g., Higgins, 1989; Higgins, Rholes, & Jones, 1977; Sedikides & Skowronski, 1991; Stapel et al., 1997; Stapel & Marx, 2007; Wyer & Srull, 1989) I argue that the results reported in Chapter 2 have important implications for our understanding of moral judgments. That is, many moral psychologists are looking for which moral rule determines how people judge moral issues (Bartels & Medin, 2008; Beauchamp,

2001; Cushman et al., 2006; Nichols & Mallon, 2006; Monin et al., 2007), so the influence of temporarily available knowledge on responding to moral issues is less straightforward as some social psychological theorists might assume. Basically, moral scholars are looking for universal laws of moral conduct, thereby excluding the influence of available contextual information.

The influence of the knowledge accessibility effect resulting from contextual information adds therefore a new perspective to understanding how moral judgments are formed. This is a perspective that current models on moral judgment did not seriously pay attention to (Haidt, 2001; Haidt, & Björklund, 2008a; Pizarro, & Bloom, 2003). Current perspectives on morality state that either intuitions (e.g., Haidt, 2001, 2007, 2008; Haidt & Björklund, 2008a) or reasoning (e.g., Beauchamp & Childress, 1994; Narvaez, 2009; Pizarro & Bloom, 2003) determine moral judgments, whereby both claim that these processes reside within the individual. The current data show that when a moral event is ambiguous and requires interpretation, contextually activated information influences moral judgments. Not being made in a social vacuum (Kurtines, 1986; Jordan & Monin, 2008; Stapel & Suls, 2007) moral judgments can be influenced by accessible knowledge subtly activated by the context. So, it may be not only conscious deliberation or fast intuitive processes or a combination of both, but also a matter of contextually activated knowledge when people are confronted with ambiguous moral issues.

Future research regarding assimilation and contrast effects within moral judgments could focus on the downstream consequences of these effects (Markman et al., 2007; Martin & Shirk, 2007). For example, do assimilative or contrastive judgments subsequently influence behavior regarding the person being judged? Does an individual treat a person in less moral ways, or is the person being excluded or avoided after having been judged as immoral? What happens after a person has been judged moral? That is, does behavior of an individual, after having made an assimilative or contrastive judgment, also assimilate towards or contrast away from the activated knowledge? Investigating the downstream

consequences of assimilative and contrastive moral judgments would fit with recent calls for social judgment research to focus on the motivational and behavioral consequences of context effects (Markman et al., 2007; Martin & Shirk, 2007).

### **Goal perspective**

I also think that approaching moral dilemmas from a goal conflict perspective (Chapter 3) is a novel way of looking at moral conduct in dilemmatic situations. This noted, I would like to emphasize explicitly that although in Chapter 3 I have approached the salience of the utilitarian principle “Thou shalt save” and the deontological principle “Thou shalt not kill” from a goal conflict perspective, this viewpoint could be developed further in future research. For example, it can be argued that the different goals of “Thou shalt save” and “Thou shalt not kill” also could be ordered in a hierarchical fashion with one goal (e.g., “Thou shalt save”) having higher priority than the other goal (e.g., “Thou shalt not kill”).

In other words, future research building on the findings presented here may also want to explore the implications of for example action identification theory (Vallacher & Wegner, 1987; Wegner & Vallacher, 1986). According to action identification theory actions can be identified in many ways, resulting in a hierarchical arrangement of an action’s various identities. Lower level representations in this action identification hierarchy convey the means how the action is performed, whereas higher level representations convey a more general understanding of the action focusing on the ends of the action (Trope & Liberman; Vallacher & Wegner, 1987; Wegner & Vallacher, 1986). It has been suggested that actions may be presented in terms of superordinate and subordinate goals (Liberman & Trope, 1998; Trope & Liberman, 2003). From this perspective of goal hierarchies one could argue that the action of intervention in moral dilemmas, more specifically footbridge dilemmas, can be identified at a higher level as ‘saving’ when one focuses on the ends, for example the greater good. Focusing on the means of intervention can be identified

at a lower level as “pushing the one person”. In other words, because in footbridge dilemmas the utilitarian goal “Thou shalt save” is conducive for the greater good, one could argue that this goal is higher in the goal hierarchy than “Thou shalt not kill”.

In addition, recent research has demonstrated the association between affect and level of focus. Anxiety facilitates local processing (Derryberry & Reed, 1998), whereas happiness directs attention to global processing (Basso et al., 1996; Gasper & Glore, 2002). A positive mood allows people to distance themselves psychologically from the situation resulting in a broader perspective, or seeing the big picture (Bar-Anan et al., 2006; Liberman et al., 2002; Trope & Liberman, 2003; Trope et al., 2007). Put differently, a positive mood focuses on the higher level representations, the ends, of an action and therefore the goal higher in the hierarchy is more salient, whereas a negative mood focuses on the lower level representations, the means, of an action and therefore the goal lower in the hierarchy is more salient.

In addition, from research on footbridge dilemmas we know that negative (Greene et al., 2001, 2004) and positive affect (Valdesolo & DeSteno, 2006) could play a role when solving this dilemma. Recent research by Valdesolo and DeSteno (2006) demonstrated that after priming participants with positive affect, they were more willing to intervene in the footbridge dilemma. Positive affect results in a more holistic, global mindset as a result of which people see the bigger picture, that is the greater good. In other words, people focus on the goal higher in the hierarchy: “Thou shalt save”. Therefore people are more willing to intervene. Furthermore, Greene (2009) states that the footbridge dilemma elicits a negative emotional response leading to deontological judgments. Put differently, negative affect results in local processing focusing on the concrete situation, the here and now. That is the means of stopping the trolley: the person on the footbridge. Therefore the deontological goal “Thou shalt not kill” becomes more salient and people refrain from intervention. Although it can be argued that on the basis of results of Chapter 3 one cannot be sure that utilitarian or deontological

goals are part of a goal hierarchy, future research could fully explore the idea that moral dilemmas in fact can be seen as potential goal hierarchy situations, adding a new perspective to approaching moral dilemmas as goal situations.

Further exploring the goal perspective on morality, one could argue that if moral issues activate goal-directed behavior, goal directed action should immediately decrease when the goal has been achieved (Bargh et al., 2001; Carver & Scheier, 1998; Fishbach & Dahr, 2005; Fitzsimons, Chartrand, & Fitzsimons, 2008; Förster, Liberman, & Friedman, 2007; Förster, Liberman, & Higgins, 2005). Based on the principle that goals only motivate behavior when they are active, research can determine post hoc whether goal-based processes are at work. When goals are “turned off” via goal progress or fulfillment, they no longer should exert any influence. Support for this idea is found in research on moral judgments. People having experienced (psychological) disgust and who physically cleansed themselves afterwards, judged certain moral actions to be less wrong than people who had not been exposed to a cleanliness manipulation (Schnall, Benton, & Harvey, 2008). In other words, physical disgust activated the goal of cleanliness, after people had fulfilled their goal by physically cleaning themselves, the goal of morality, closely associated with physical purity (Zhong & Liljenquist, 2006; Liljenquist, Zhong, & Galinsky, in press), became less active and hence people judged behavior trespassing moral conduct less severe. Physical cleaning turned off the goal of morality. Following the idea that goals can be turned on and off, future research could investigate in this way the involvement of goal-based processes regarding moral issues. In addition, more fundamental questions regarding goals could also be addressed in future research, because the sketched approach towards goals in Chapter 3 has not been without criticism (see, e.g., Wood & Neal, 2007).

Following the findings regarding the influence of emotional engagement, one could argue that momentarily the research by Greene and colleagues (2001, 2004) is leading regarding how people solve moral dilemmas. The strongest data that I know of regarding the impact of

emotional engagement is fMRI research (Greene et al., 2001). This is very important research, but, in essence, consists of correlational data. Moreover, the conclusion that moral dilemmas differ in the extent to which they employ emotional processing and that this difference in emotional processing influences the willingness to intervene, is based on cross-sectional reasoning. Basically, Greene and colleagues combine their brain activation data with the activation of the same brain region found in different experiments, in which the specific brain regions were associated with emotion, to conclude that affective reactions play a role in some moral dilemmas. One could argue that this is too bold of a conclusion, also because the affective reaction resulting from responding to footbridge dilemmas for instance could be a result of a goal conflict not of the emotional engaging nature of footbridge dilemmas. In footbridge dilemmas people get aroused by the choice between conflicting principles per se, not by the fact that they have to push one person from a footbridge in order to save five persons.

Furthermore, in the current thesis I do not find any effects on the PANAS. The PANAS consists of two subsets of items, one measuring positive and one measuring negative affect (Watson et al., 1988). Although I do not find an effect on the PANAS in the current thesis, I am the first to acknowledge that the PANAS may not be sensitive enough to reliably measure the influence of relatively small differences in affect. Following this, but also my aforementioned comments on the work by Greene and colleagues, I hope my thesis gives rise to using more fine-grained measures when assessing judgments, decisions, or behavior towards moral issues. As well as to initiate empirical research that both manipulates and measures certain concepts that are assumed to play a role when responding to moral issues. On top of that, I hope my thesis instigates more attention towards the situation in which people find themselves in when responding to moral issues.

## **Embodied disinhibited morality**

I also think that the issue of behavioral inhibition and embodied morality, studied in Chapter 4, contributes to the relevance of the present thesis. Based on previous work (e.g., Latané & Nida, 1981; Van den Bos et al., 2010; Van den Bos et al., 2009), I argued that morally dilemmatic situations, such as moral and bystander dilemmas, involve difficult decisions concerning how to act leading to behavioral inhibition to intervene in these morally dilemmatic situations. Furthermore, I argued that if this line of reasoning has merit, then it should be the case that exposing people to disinhibited states (e.g., embodied power) should reduce inhibition to intervene in morally dilemmatic situations. Building on this line of reasoning I showed that embodied states of disinhibition indeed overcome behavioral inhibition in morally dilemmatic situations. This way I introduced new concepts explaining responses towards moral issues: behavioral (dis)inhibition and embodied cognition.

By introducing behavioral inhibition as a concept explaining intervention inertia towards moral issues gives the opportunity in future research to study the neural substrates of behavioral inhibition and thus intervention inertia towards moral issues: the septo-hippocampal system, its monoaminergic afferents from the brainstem, and its neocortical projection in the frontal lobe (Carver & White, 1994; Gray, 1972, 1990; Gray & McNaughton, 2000). So, by combining my perspective on morality with neuroscience it is very clear what neural substrates are hypothesized to underlie intervention inertia in moral dilemmas. Future research may want to study this hypothesis. Specifically, by manipulating behavioral inhibition regarding moral dilemmas within experimental settings and by assessing the effects of these manipulations with fMRI-measures, this would give more insight into what the exact psychological processes are underlying responses to moral issues. This approach would extend what now tends to be common practice in current neuroscience studies regarding moral dilemmas. For example, recent fMRI research only assumes the influence of certain moral principles (Greene et al., 2004) or

emotions (Greene et al., 2001, 2004) without manipulating or measuring the current concepts directly.

In the current thesis I presented data supporting both the influence of semantic networks comprised of cognitive mental representations on moral conduct (Chapters 2 and 3), as well as the influence of a simpler and more parsimonious path activating knowledge, the body's somatosensory system (Chapter 4). Basically, embodied cognition is devoid from elaborate cognitive representations. Our idea that decisions about what to do in moral dilemmas or bystander situations can be embodied joins other research relating embodied cognition and morality for example moral purity and physical cleansing (Zhong & Liljenquist, 2006), disgust and extraneous bodily sensations (Schnall et al., 2008), weight of an object and perceived justice (Jostmann et al., 2009) and procedural justice and approach versus avoidance motor actions (Van Prooijen, Karremans, & Van Beest, 2006). Furthermore, I proposed that embodied cognition seems to constitute a perspective that fares pretty well in explaining moral conduct (see also, Lakens, Van den Bos, & Semin, 2009), but I did not mean to suggest that embodied cognition is the best and only model out there. Put differently, although showing the influence of embodied cognition on behavior, this is not to say that moral conduct based on semantic networks is not possible.

One might be tempted to suggest that either the embodied perspective or the cognitive representations perspective is the better theory explaining human functioning regarding moral issues. But this is not what I want to propose, also because the grounded approaches to cognition have not been without criticisms (Aarts & Veling, 2009; Lakens, 2010; Mahon & Caramazza, 2009). So what I propose is that, looking for universal laws of social psychology is not a fruitful way of solving theoretical issues regarding morality. Instead we should start adopting an empirical orientation. Specifically, I propose the adoption of a truly social psychological perspective on the different cognitive systems that have been proposed to underlie human functioning concerning moral issues. For social psychologists, an obvious next step would be setting up studies that

examine conditions under which semantic networks are more important than embodied cognition *and* conditions under which semantic networks are less important than embodied cognition with regard to moral issues. Moderator studies that test this basic idea may provide fruitful insight into the psychological processes underlying human functioning, and may do so while adopting an integrative perspective on semantic networks and embodied cognition in relation to moral issues.

In addition, reducing the bystander effect is an important goal, for both psychologists and society at large, but has been proven difficult to attain (Latané & Nida, 1981). This can partly be explained by the observation that research on intervention within dilemmatic situations generally tries to answer the question why moral people often don't take moral action when this action is called for (Cacioppo, Petty, & Losch, 1986; Darley & Latané 1968; Darley, Teger, & Lewis, 1973; Garcia, Weaver, Moskowitz, & Darley, 2002; Greene, et al., 2001; Milgram, 1974; Levine & Crowther, 2008; Prentice & Miller, 1996), whereas understanding the psychological factors that do induce people to intervene within bystander dilemmas is just as interesting (Franco & Zimbardo, 2007; Latané & Nida, 1981). In line with this, the present paper demonstrated the novel proposition that embodied representations of power can overcome intervention inertia within morally dilemmatic situations. Our findings fit with explanations given by bystanders during the Holocaust. In-depth interviews with bystanders after the Holocaust show that they regarded themselves as passive, lacking control, and low in efficacy (Monroe, 2008), whereas heroic helpers show faith in their own competence and intuition and have enhanced feelings of competence (Staub, 2003). In other words, bystanders felt powerless to intervene, whereas heroic helpers felt they had the power to intervene. Future research could explore other psychological factors that induce people to intervene within bystander dilemmas, such as for example propensity to obedience to authority, leadership orientation, need for closure, or religiosity.

## Coda

All in all, I argue that the findings presented in this thesis are in support of a new perspective on how people respond to moral issues. That is, in addition to perspectives that characterize the way people make decisions based on “moral reasoning” (e.g., Kohlberg, 1969; Monin et al., 2007; Nichols & Mallon, 2006; Piaget, 1932/1975; Pizarro & Bloom, 2003; Turiel, 1983) and “affective intuitions” (e.g., Haidt, 2001; Kagan, 1984; Wilson, 1993), and supplementing the dual-process perspective (Greene, 2007; Greene et al., 2001) which argues that both reasoning and affective intuition play crucial roles, the current thesis suggests the following: People can also make moral judgments, decisions, and act as a result of which information is available in the situation at the time of judgment, deciding, or behavior. So, it may not only be conscious deliberation (see the moral reasoning approach) or fast affective processes (see the moral intuition approach) or a combination of both (see the dual-process approach), but also a matter of which information is most (unconsciously) available when people are confronted with moral issues. Of course there is still much work to be done. Future research may more fully want to explore the implications of situated accessible and embodied knowledge regarding responses towards moral issues, thereby extending the findings presented in this thesis. For example experimental research could measure the downstream consequences of the assimilation and contrast effects found in Chapter 2, further develop the goal (conflict) perspective presented in Chapter 3, and pin down the neural substrates of (dis)inhibition in morally dilemmatic situations as well as further integrate embodied cognition with responses to moral issues (Chapter 4).

To end on an even broader note, as stated before, morality can be seen as a code of conduct put forward by specific groups or society to make people cooperate and relate to each other, hence making social life possible (e.g., De Waal, 2006; Haidt, 2007; 2008; Haidt & Kesebir, in press; Hauser, 2006; Krebs, 2008; Narvaez, 2009; Turiel, 1983, 2006). These cooperative behaviors are not only necessary to make social life

possible, but moral outlooks also are part of solving the great problems of our time, for example the current environmental crises, ethno-political conflict, genocide, terrorism, overpopulation, migration, refugees, and nuclear proliferation (Greene, 2002; Narvaez, 2009). This perspective is illustrated by the failed negotiations regarding a new climate treaty in Copenhagen in December 2009. Besides being an economic or a political issue, following Al Gore, one could ask whether it is morally acceptable that if humanity does not act in a few years some nations, such as the atolls of Tuvalu or the Maldives, and thus people like you and me, are being threatened in their existence? Not to say people living in poor areas of Africa or Asia, those who have contributed least to climate change, but are suffering the most (Lomberg, 2009). Issues of morality and justice also play a role for answering the question who is responsible for climate change, and even so thus issues of morality and justice play a role in the proper solution to the problem, or more specifically an equitable and even-handed deal whereby welfare of emerging economies is not hampered by strict rules that did not exist when the developed world build their economies and welfare (Broder & Rosenthal, 2009; Bono, 2010; “Down from the summit”, 2009; Harvey, Crooks, & Ward, 2009; Harvey, Ward, & Crooks, 2009; Lomberg, 2009; Mortished, 2009).

Having a positive view on morality, some authors propose that technological advances make us more aware of the fate of people in distant countries and regions, thereby expanding our own concerns for peace, decency, democracy, human rights, a good life, and cooperation towards the far corners of the earth (Haidt, 2007), or, put differently, expand the concern for issues of morality. But one could as well argue that it is also the other way around. The same technological advances show people outside the Western world that they lack peace, a decent life, democracy, human rights, and cooperation. Although some might think this is too easy of a question, the matter may perhaps be raised: Who is to blame for this imperfect world of everyday morality? Answering this question is not so simple and surrounded with ambiguity and uncertainty. Because people have different conceptions of what is

right and wrong (Greene, 2002; Griffin & Ross, 1991; Narvaez, 2009), research into how people form judgments on, make decisions about, and act towards what is right or wrong signals therefore the importance of research into morality (Haidt, 2008; Narvaez, 2009). In addition, because the human population will keep on growing, human life will become more globalised, economies will become more interconnected but the different social-economic systems these economies are based upon differ subtly but significantly, and our planet will become more armed (Gray, 2002, 2003; Haidt, 2008), uncertainty and ambiguity surrounding moral issues that are closely connected to the growing human population and a more interconnected, globalised human context will ever become bigger with all its consequences on people's responses towards these moral issues. Therefore, more studies into the topic of human morality is needed and it is my hope that this thesis triggers new research to better understand how people make judgments on, decisions about, and behave towards moral issues. In this way the research I presented here into what drives situated and embodied human responses to moral issues and what people think is right or wrong under conditions of uncertainty and ambiguity could contribute towards understanding and hopefully solving humanity's current problems.

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# Samenvatting

## Moraliteit: De fundamentele bouwsteen van een samenleving

**V**olgens beleids- en opiniemakers is de oplossing voor de verschillende crises die het nieuws aan het begin van de 21e eeuw hebben gedomineerd, een concept dat de mensheid al eeuwen intrigeert: moraliteit (Haidt, 2008; Haidt & Kesebir, in druk). Wanneer president Obama (2008) van de Verenigde Staten schetst hoe terreur te overwinnen, noemt hij het morele kompas en de morele statuur van Amerika in de wereld. In zijn film “An inconvenient truth” is de huidige crisis rondom het klimaat volgens Al Gore niet zozeer een politieke kwestie, maar veel meer een morele kwestie. Door klimaatverandering als een morele kwestie te benoemen, zegt Al Gore impliciet dat de mensheid het zich niet kan verantwoorden geen actie te ondernemen en toe te blijven kijken. Hetzelfde geldt voor etnopolitieke crises. Door conflicten zoals in Rwanda, Soedan en het voormalige Joegoslavië (bijvoorbeeld rondom Srebrenica en Kosovo) genocide te noemen, is het voor regeringen moeilijker om het conflict te negeren (Kessler & Lynch, 2004). Het toekennen van het etiket genocide aan etnopolitieke crises houdt in principe in dat het immoreel is om niet in te grijpen.

Het belang van moraliteit in het leven van mensen wordt geïllustreerd door het gegeven dat het concept reeds bestaan heeft sinds het ontstaan van de mensheid. In feite is de kiem gelegd lang voordat de moderne mens op het evolutionaire toneel verscheen. De belangrijkste onderdelen van moraliteit zijn namelijk ook terug te vinden bij primaten (De Waal, 1996, 2005; Wright, 1994). Bruine capucijnapen, maar ook chimpansees reageren namelijk negatief op oneerlijke verdelingen tijdens interacties met een menselijke onderzoeksleiders. In feite verwerpen deze primaten een oneerlijke betaling (Brosnan & De Waal, 2003; Brosnan, Talbot, Ahlgren, Lambeth & Schapiro, in druk). Verder werden aan de

wieg van de menselijke beschaving schulden van mensen in kleitabletten geadministreerd door handelaren in het oude Mesopotamië (Haidt, 2008). Met andere woorden, deze handelaren uit Mesopotamië kunnen gezien worden als de uitvinders van wat we nu distributieve of uitkomsten rechtvaardigheid noemen.

De geschiedenis van de mensheid wijst uit dat mythes, sagen en religieuze voorschriften mensen lieten zien hoe zij een goed en moreel leven konden leiden. Bijvoorbeeld, de Code van Hammurabi (stammend uit Babylon ongeveer 1790 v.c.), de Hindoeïstische Vedas (stammend uit het India van voor de jaartelling), de Wijsheden van Amenemope (stammend uit het faraonische Egypte van voor de jaartelling) (Haidt, 2006, 2008), maar ook de heilige boeken van de drie monolithische wereldreligies (Jodendom, Islam en christendom), zijn in wezen teksten die aan mensen - in de oudheid - uitleggen wat goed of fout is. Daarnaast werden verschillende maatschappijen verteld wat goed en slecht was en hoe zich moreel te gedragen met behulp van overleveringen, zoals het klassieke *Ilias* van Homerus, de epische lofdichten *Mahabharata* (India) en *Shahnameh* (Perzië), maar ook met behulp van parabels over morele personen, bijvoorbeeld de Christelijke evangeliën en de Islamitische Soenna's (Haidt, 2008; Haidt & Kesebir, in druk). Bespiegelingen over moraliteit met behulp van verhalen vinden ook nog in de huidige tijd plaats, alleen dan geholpen door meer hedendaagse versies van de vertelkunst. Eigentijdse versies van parabels die gedachten over goed en slecht stimuleren zijn films (Pizarro, Detweiler-Bedell, & Bloom, 2006), zoals *Mississippi Burning*, *In Name of The Father*, *Platoon*, *Cry Freedom*, *Cidade de Deus*, *Bloody Sunday*, en popliedjes als *The Hurricane*, *Masters of War*, *Sunday Bloody Sunday*, *Miss Sarajevo*, *My City in Ruins*, *Biko*, om er maar een paar te noemen. Deze voorbeelden geven de alomtegenwoordigheid van moraliteit in het dagelijks leven van mensen aan.

Het belang van moraliteit wordt ook door wetenschappelijk onderzoekers onderkend. Volgens hen kan moraliteit gezien worden als een manier van handelen onderschreven door om het even welke specifieke groep, die het mogelijk maakt dat mensen samen kunnen werken en in

een goede verhouding met elkaar kunnen leven, waardoor een sociaal bestaan en dus een samenleving mogelijk wordt (zie bijvoorbeeld De Waal, 2006; Haidt, 2007, 2008; Haidt & Kesebir, in druk; Hauser, 2006; Krebs, 2008; Narvaez, 2009; Turiel, 1983, 2006). De voormalige president van Zuid Afrika stelt dit aan de orde in verschillende toespraken die hij hield nadat het bestuur van zijn land was getransformeerd van het zeer immorele Apartheid regime naar een democratie gebaseerd op het principe van één mens, één stem. In deze toespraken spreekt Nelson Mandela over rechtvaardigheid, een concept dat zeer sterk gerelateerd is aan moraliteit. Nelson Mandela merkt in deze speeches het volgende op: “Overwegingen met betrekking tot rechtvaardigheid en respect voor de internationale rechtsorde zouden als leidraad moeten dienen voor de betrekkingen tussen landen” (Mandela, 1994a). “We spreken van mede staatsburgers om de wonden van het verleden te laten helen met de intentie om een nieuwe orde te bouwen op basis van rechtvaardigheid voor allen” (Mandela, 1994b). “Onze dagelijkse daden als gewone Zuid-Afrikaners moeten een feitelijke Zuid-Afrikaanse werkelijkheid voortbrengen die het geloof van mensen in rechtvaardigheid bekrachtigt, het vertrouwen in de verhevenheid van de menselijke geest versterkt en de hoop voor een luisterrijk leven voor allen kracht bij zetten” (Mandela, 1994c).

Aldus, in zijn toespraken legt Nelson Mandela een verband met wat de kern van moraliteit is: het mogelijk maken dat mensen samen werken en een in een goede verhouding met elkaar kunnen leven, waardoor samen leven mogelijk wordt. Samenwerken als gevolg van moraliteit is niet alleen nodig om een sociaal bestaan mogelijk te maken, maar morele zienswijzen zijn ook een onderdeel van het oplossen van de grote problemen van onze moderne samenleving, bijvoorbeeld de huidige milieu crises, etnopolitieke conflicten, genocide, terrorisme, overbevolking, migratie, vluchtelingen en nucleaire proliferatie (Greene, 2002; Narvaez, 2009). De oordelen van mensen, hun beslissingen en gedrag met betrekking tot deze problemen verschillen omdat mensen verschillende opvattingen hebben over wat goed en slecht is (Greene, 2002; Griffin & Ross, 1991; Narvaez, 2009).

Daarnaast beantwoord moraliteit aan een fundamentele menselijke behoefte, de behoefte om erbij te horen (Baumeister & Leary, 1995), door groepen te binden (Haidt, 2007; Haidt & Kesebir, 2007), maar moraliteit geeft ook een gevoel van doel en zingeving aan het leven (Baumeister, 1991; Haidt & Kesebir, 2007). Het gegeven dat de grote maatschappelijke problemen van de moderne tijd eigenlijk morele vraagstukken zijn (Greene, 2002; Narvaez, 2009) en dat moraliteit existentiële gevolgen heeft (Haidt & Kesebir, 2007), signaleert het belang van onderzoek naar hoe mensen oordelen vormen, beslissingen nemen over en gedrag vertonen ten opzichte van wat goed en slecht is en geeft dus het belang weer van onderzoek naar moraliteit (Haidt, 2008; Narvaez, 2009).

### **Moraliteit: De theorie over de fundamentele bouwsteen**

Sinds de oudheid werden mensen niet alleen onderwezen over moraliteit. Theoretici en onderzoekers dachten ook na over het concept. Vanuit de filosofie zijn twee hoofdstromingen ontstaan die het concept moraliteit anders benaderen. Het rationalistisch perspectief ziet moraliteit als een principe dat gedefinieerd wordt door objectieve standaarden die aangeven wat goed en slecht is (zie bijvoorbeeld, Hare, 1981; Rawls, 1971). Het gezond verstand zegt dat mensen goed na moeten denken over de voor- en nadelen van hun beslissing wanneer zij reageren op moeilijke vraagstukken (zie bijvoorbeeld, Descartes, 1644/1983; Locke, 1689/1997; Simon, 1955). Zeker waar het morele vraagstukken betreft (zie bijvoorbeeld, Kant, 1785/1959). Het rationalistische perspectief geeft dus aan dat mensen gebruik moeten maken van de rede om te bepalen wat goed en slecht is (zie bijvoorbeeld, Kant, 1785/1959). Er zijn echter ook filosofen die beweren dat moraliteit een gevolg is van affect, en helemaal niet van een rationeel proces (zie bijvoorbeeld, Hume, 1739/1951). Intuïtionisten zoals Hume hangen het idee aan dat morele oordelen en beslissingen het gevolg zijn van morele emoties.

Dit debat tussen rationalisten en intuïtionisten vindt ook plaats binnen de moreel psychologische literatuur. Rationalisten stellen dat

moraliteit vooral het gevolg is van cognitief redeneren (zie bijvoorbeeld, Kohlberg, 1969; Piaget, 1932/1975; Turiel). Volgens rationalisten baseren individuen zich op een morele redenering, waarbij de verschillende opties en de daaruit volgende consequenties en uitkomsten worden gewogen wanneer zij nadenken over morele vraagstukken (Narvaez, 2008, 2009; Nichols & Mallon, 2006; Pizarro & Bloom, 2003). Wanneer mensen een moreel oordeel vormen of een morele beslissing nemen gebeurt dit op basis van een bewuste op taal gebaseerde redenering (Kohlberg, Levine & Hewer, 1983). Aan de andere kant beweren intuitionisten dat gedachten over moraliteit worden bepaald door een eerste instinctieve reactie. Volgens intuitionisten wordt de rationele verklaring voor moreel handelen pas achteraf gevormd, dus nadat mensen zich al een oordeel hebben gevormd of een beslissing hebben genomen (zie bijvoorbeeld, Haidt, 2001; Kagan, 1984; Wilson, 1993). Intuitionisten stellen dat (affectgeladen) intuïties morele oordelen bepalen (zie bijvoorbeeld, Damasio, 1994; Haidt, 2001, 2007, 2008; Haidt & Björklund, 2008a). Harde onderzoeksdata voor wat betreft de controverse tussen rationalisten en intuitionisten zijn echter schaars (Haidt, 2001, 2003; Pizarro & Bloom, 2003; Van den Bos, 2003).

In plaats van deze oude en voortdurende controverse voort te zetten, kies ik in het huidige proefschrift voor een andere benadering. In plaats van een theoretische benadering van boven af, volg ik in het huidige proefschrift een bottom-up aanpak. Dat wil zeggen dat ik in mijn onderzoek nauwkeurig analyseer met welke situaties mensen worden geconfronteerd wanneer zij reageren op morele vraagstukken zoals gebruikt in eerder onderzoek (zie bijvoorbeeld, Greene e.a., 2001, 2004; Haidt, 2001; Thomson, 1976, 1986; Van den Bos e.a., 2009).

Op basis van een analyse van morele situaties kan meer in het algemeen gezegd worden dat morele oordelen, beslissingen en moreel gedrag vaak plooibaar zijn, omdat in deze situaties niet helemaal duidelijk is wat de juiste reactie is. Dat wil zeggen dat de richting van het morele kompas afhangt van de situatie waarin mensen zich bevinden, waarbij mensen niet zeer consequent zijn wanneer zij reageren op morele vraagstukken. Omdat niet altijd duidelijk is wat de juiste weg is binnen

morele dilemma's, worden deze situaties vaak als ambigu waargenomen. Als gevolg van deze ambiguïteit kunnen morele oordelen, beslissingen en moreel gedrag beïnvloed worden door informatie die tijdelijk cognitief beschikbaar is. Deze tijdelijk cognitief beschikbare informatie kan worden geactiveerd door allerlei objecten en signalen in de omgeving van mensen wanneer zij met morele vraagstukken worden geconfronteerd.

### **Moraliteit en plooibaarheid**

In het algemeen lijkt het dat morele oordelen, beslissingen en gedrag van individuen aan verandering onderhevig zijn. Het is daarom niet onredelijk om te stellen dat wat mensen goed of slecht vinden, afhangt van de situatie waarin zij zich bevinden. Verder kan de reactie van mensen ten opzichte van morele vraagstukken over de tijd veranderen, waarbij mensen niet erg consequent zijn in hun reacties. Vraagstukken kunnen door middel van een proces van positief, negatief of neutraal moraliseren onderdeel worden van het morele domein of het morele domein verlaten, waardoor dit proces na verloop van tijd beïnvloedt en verandert wat mensen goed of slecht vinden (Rozin, 1999).

Voorbeelden uit het dagelijks leven laten de plooibaarheid van reacties op morele vraagstukken zien. Onderzoek in de Verenigde Staten toont bijvoorbeeld dat wanneer mensen ouder worden hun sociopolitieke attitudes met betrekking tot sociaal economische herverdeling, raciale gelijkheid, criminaliteit, burgerrechten, het milieu, en burgerlijke stand veranderen in de richting van meer tolerantie, in plaats van meer conservatisme (Danigelis, Hardy, & Cutler, 2007). Met andere woorden, hoe mensen denken over morele vraagstukken in sociopolitieke termen verandert als gevolg van ouder worden. Daartegenover laat onderzoek naar radicalisering (bijvoorbeeld, links, rechts en moslim extremisme) zien dat mensen sommige acties (bijvoorbeeld geweld of terrorisme) immoreel vinden, maar in latere fases van radicalisering meer gewelddadige reacties wel accepteren, en deze extreme reacties als minder immoreel beoordelen (Hogg, 2004; Van den Bos, Loseman & Doosje, 2009). Verder zijn sommige

mensen tegenstander van het homohuwelijk, homosexualiteit, en abortus, maar hebben zij minder moeite met en ondersteunen zij zelfs een (volgens de standaarden van het internationale recht) zeer controversiële oorlog, het verminderen van belastingen voor de rijken maar in het verlengde daarvan ook het verminderen van het sociale vangnet voor de economisch kwetsbaren, en lijkt het alsof Moeder Natuur deze mensen weinig kan schelen (Haidt & Graham, 2007). Daarnaast schenden mensen soms morele principes waaraan zij thuis zo veel waarde hechten, zoals blijkt uit gedrag vertoond door de bewakers van de Abu Ghraib gevangenis in Irak (Fiske, Harris & Cuddy, 2004). Vanuit historisch perspectief, worden de bombardementen tijdens de Tweede Wereldoorlog van Londen, Coventry en andere geallieerde steden zoals Rotterdam door velen in het geallieerde kamp gezien als oorlogsmisdaden (Mak, 2004). Aan de andere kant worden de bombardementen van Dresden en andere Duitse steden door de geallieerden aan het einde van de Tweede Wereldoorlog, steden die zich niet in de buurt van enig militair strategisch doel bevonden, gezien als een middel om de oorlog te beëindigen en vrede te brengen in Europa (Friedrich, 2006; Mak, 2004).

Theoretisch onderzoek ondersteunt de constatering dat morele oordelen, beslissingen en gedrag plooibaar kunnen zijn. Mensen zijn bijvoorbeeld zeer wel in staat om in bepaalde situaties afstand te nemen van morele principes, terwijl zij in andere situaties zeer vastbesloten zijn om naar deze principes te handelen (Aquino, Freeman, Reed II, Lim & Felps, 2009; Graham, Haidt & Nosek, 2009; Haidt & Graham, 2007). Met andere woorden, onderzoek laat zien dat morele principes sterke meningen zijn die makkelijk prijsgegeven worden (Baron, 2002; Baron & Leshner, 2000; Baron & Spranca, 1997; Ritov & Baron, 1999). Zelfs deugdzaam mensen houden zich soms niet aan morele standaarden (Bandura, 1999; Fiske e.a., 2004; Milgram, 1974). Studies van Darley en Batson (1973) laten zien dat seminarie studenten minder geneigd waren een persoon te helpen die hulp nodig had wanneer hen door de onderzoeksleider verteld was dat zij op moesten schieten. Met andere woorden, het aanwezig zijn van een subtiele tijdsdruk kan pro-sociaal gedrag ernstig beperken. Tegelijkertijd kunnen

de meest verachtelijke mensen pro-sociaal gedrag vertonen (Aquino e.a., 2009). Daarnaast laat onderzoek zien dat morele overtredingen die verwerkt zijn met discrepante cognitieve vloeïendheid als minder immoreel beoordeeld werden, dan wanneer dezelfde overtredingen verwerkt werden met discrepante cognitieve niet-vloeibaarheid (Laham, Alter & Goodwin, 2009).

Wat mensen goed of slecht vinden lijkt ook af te hangen van zelfzuchtige overwegingen en persoonlijke betrokkenheid (Epley & Caruso, 2004; Epley & Dunning, 2000; Messick, Bloom, Boldizar & Samuelson, 1985; Messick & Sentis, 1983; Wijn & Van den Bos, 2010). Onderzoek van Ham en Van den Bos (2008) toont bijvoorbeeld de invloed van persoonlijke relevantie op spontane rechtvaardigheidsoordelen en, minder, op expliciete rechtvaardigheidsoordelen. De resultaten van dit onderzoek impliceren dat mensen sterkere spontane conclusies met betrekking tot rechtvaardigheid trekken wanneer zij geconfronteerd worden met beschrijvingen van situaties die rechtvaardigheid impliceren die henzelf betreft dan wanneer het iemand anders betreft (Ham & Van den Bos, 2008).

Naar aanleiding van deze onderzoeksresultaten kan gesteld worden dat oordelen, beslissingen en reacties met betrekking tot moraliteit zeer wel plooibaar kunnen zijn en daardoor van situatie tot situatie kunnen verschillen, afhankelijk van verschillende prikkels of signalen in de omgeving. Deze plooibaarheid kan een gevolg zijn van tegenstrijdige cognities (bijvoorbeeld “Ik moet opschieten” versus “Ik moet deze persoon helpen”), tegenstrijdigheden tussen cognities en gedrag, verschillen in persoonlijke relevantie (bijvoorbeeld “Niet eerlijk voor mij!” versus “Niet eerlijk voor jou”), maar ook een gebrek aan informatie op basis waarvan met vertrouwen gereageerd kan worden op morele vraagstukken (Van den Bos & Lind, 2002; Van den Bos, in druk). Al deze verschillende invloeden dragen bij aan het ambigue karakter van veel morele situaties.

## Moraliteit en ambiguïteit

Wanneer mensen rechtvaardigheidsoordelen moeten vormen of beslissingen moeten nemen ten opzichte van morele vraagstukken worden zij vaak geconfronteerd met informatieonzekerheid (Van den Bos, 2001, in druk; Van den Bos & Lind, 2002). Deze constatering is in lijn met werk over hoe mensen beslissingen nemen. Besliskunde stelt dat menselijke beoordelingen en beslissingen vaak gevormd worden onder omstandigheden van incomplete informatie (bijvoorbeeld, Kahneman, Slovic & Tversky, 1982; Phelps, 1970; Tversky & Kahneman, 1974). Omstandigheden van incomplete informatie doen zich voor wanneer individuen geconfronteerd worden met de onmogelijkheid om de toekomst te voorspellen of wanneer individuen geconfronteerd worden met tegenstrijdigheden tussen verschillende cognities, tussen cognities en ervaringen, of tussen cognities en gedrag (Van den Bos & Lind, 2002). Verder houdt informatieonzekerheid in dat mensen minder informatie tot hun beschikking hebben dan zij idealiter zouden willen hebben om zelfverzekerd een beslissing te nemen (Van den Bos, 2001, 2009a; Van den Bos & Lind, 2002).

Het is niet ongevoerd dat informatie met betrekking tot morele vraagstukken ontbreekt resulterend in informatieonzekerheid en ambiguïteit (Van den Bos, 1999, 2001; Van den Bos & Lind, 2002, 2009; Van den Bos, Lind, Vermunt, & Wilke, 1997; Van den Bos, Wilke, & Lind, 1998; Van den Bos, Wilke, Lind, & Vermunt, 1998). Daarnaast is het vaak onduidelijk wat de juiste reactie binnen morele situaties is (Beauchamp, 2001; Greene e.a., 2001; Van den Bos, 2003). De literatuur over moraliteit stelt dat veel morele situaties moeilijke beslissingen met zich mee brengen over wat te doen, omdat mensen een keuze dienen te maken tussen verschillende reacties met goede argumenten voor elk van de desbetreffende reacties (bijvoorbeeld, Greene e.a., 2001; Hauser, 2006; Killgore, Killgore, Day, Li, Kamimori & Balkin, 2007). Met andere woorden, mensen moeten kiezen tussen tegenstrijdige cognities en alternatieven. Deze keuze leidt tot gevoelens van onzekerheid en

ambiguïteit (Van den Bos, 2009a; Van den Bos & Lind, 2002). Verder laat recent onderzoek zien dat mensen vaak twijfelen over wat zij moeten doen binnen morele situaties en hoe zij deze situaties moeten beoordelen (Greene e.a., 2001; Hauser, 2006; Van den Bos, 2009a, in druk; Van den Bos e.a., 2010). Onderzoek naar morele dilemma's toont dat deelnemers langzamer reageren wanneer zij toestemmen met een interventie in een specifiek moreel dilemma waarbij informatieonzekerheid een rol zou kunnen spelen: het voetbrug dilemma (Greene e.a., 2001; Hauser, 2006; Koenigs, Young, Adolphs, Tranel, Cushman, Hauser, e.a., 2008; Killgore e.a., 2007). Voor zover deze reactietijden betekenen dat mensen het moeilijk vinden om een te beslissen wat zij moeten doen, suggereert dit dat morele situaties ambigu zijn. Anders gezegd, binnen deze situaties is het voor personen niet mogelijk een ondubbelzinnig antwoord te geven omdat alternatieve en discrepante interpretaties mogelijk zijn die leiden tot tegenstrijdigheden en het ambigue karakter van morele vraagstukken (Van den Bos, 2009a, in druk; Van den Bos & Lind, 2002; Van Hiel & Mervielde, 2002).

Concluderend kan dus gesteld worden dat er binnen veel morele situaties een bepaalde ambiguïteit bestaat met betrekking tot hoe te reageren en wat de juiste reactie is binnen deze situaties. In het huidige proefschrift stel ik voor dat vanwege het ambigue karakter van veel morele vraagstukken, veel oordelen, beslissingen en gedrag aangaande deze vraagstukken vatbaar zijn voor de invloed van tijdelijk cognitief beschikbare informatie.

### **Moraliteit en beschikbare informatie**

In het dagelijks leven komen mensen vaak situaties tegen waarin zij een moreel oordeel moeten geven, een morele beslissing moeten nemen en moeten reageren op een moreel vraagstuk. De informatie waarop mensen in deze situaties vertrouwen is vaak ambigu en incompleet (Griffin & Ross, 1991). Oordelen en beslissingen waarbij sprake is van een grote mate van onzekerheid en ambiguïteit zijn gedeeltelijk een product van

kennis representaties die cognitief toegankelijk zijn bij een persoon op het moment dat hij of zij moet reageren (Epley, Waytz, & Cacioppo, 2007; Higgins, 1996; Kahneman, 2003). De veronderstelling dat er een relatie bestaat tussen ambiguïteit en de invloed van cognitief toegankelijke kennis wordt ondersteund door onderzoek dat suggereert dat wanneer situaties ambigu zijn, kennis die cognitief het meest toegankelijk is in de desbetreffende situatie zal sturen hoe mensen zullen reageren en de ambigue situatie op zullen lossen (bijvoorbeeld, Bruner, 1957; Epley e.a., 2007; Higgins & Bargh, 1987; Kay, Wheeler, Bargh & Ross, 2004; Kruglanski & Freund, 1983; Kruglanski & Webster, 1991, 1996; Latané & Darley, 1968, 1970; Srull & Wyer, 1986; Stapel, Koomen & Van der Pligt, 1997; Stapel & Marx, 2007; Van den Bos, 2003). Deze tijdelijk cognitieve toegankelijke informatie varieert van, bijvoorbeeld, karaktertrekken (bijvoorbeeld, vriendelijk of vijandig), sociale categorieën (bijvoorbeeld, professor of student), scripts (bijvoorbeeld, hoe kook ik een kerstdiner voor vrienden of hoe ski ik een zwarte piste af), tot herinneringen aan specifieke gebeurtenissen (bijvoorbeeld reizen naar Egypte, Marokko, Zuid-Afrika, en Memphis), specifieke personen (bijvoorbeeld, Nelson Mandela of Martin Luther King), normen, (bijvoorbeeld, stil zijn in een bibliotheek of je gedragen tijdens een diner in Karel V), fysieke objecten (bijvoorbeeld, zakelijke objecten zoals een kostuum versus neutrale objecten zoals een vlieger), en geactiveerde doelen (bijvoorbeeld, plezier maken of het behalen van een doctors titel) (Aarts & Dijksterhuis, 2003; Bargh, 2006; Kay e.a., 2004; Martin, Strack & Stapel, 2001; Stapel & Koomen, 2001). Deze tijdelijk toegankelijke informatie kan geactiveerd worden door allerlei betekenisvolle situationele prikkels en signalen. Daarnaast laat een groeiend aantal publicaties de invloed zien van tijdelijk toegankelijke informatie op allerlei reacties (Bargh, 1997; Bargh & Chartrand, 1999), variërend van basale gedragingen zoals loopsnelheid (Bargh, Chen, & Burrows, 1996; Dijksterhuis e.a., 1998), tot meer complex gedrag zoals prestaties op een algemene kennistest (Dijksterhuis e.a., 1998) en het leren van nieuwe informatie (Haddock, Macrae & Fleck, 2002).

Resumerend, in het huidige proefschrift suggereer ik dat wanneer mensen moeten reageren op morele vraagstukken de informatie op basis waarvan zij reageren vaak incompleet is, op verschillende manieren geïnterpreteerd kan worden en cognities daardoor tegenstrijdig zijn, waardoor het niet duidelijk is wat de juiste reactie is ten opzichte van deze vraagstukken. Verder stel ik voor dat mensen gebruik maken van cognitief tijdelijke informatie wanneer zij geconfronteerd worden met ambigue morele vraagstukken. Mensen gebruiken deze tijdelijk cognitief toegankelijke informatie om de ambigue situatie te verhelderen, waardoor zij in staat zijn oordelen te vellen, beslissingen te nemen en actie te ondernemen ten opzichte van deze vraagstukken. Met andere woorden, bepaalde kennis die cognitief toegankelijk is voordat mensen oordelen vellen, beslissingen nemen of actie ondernemen beïnvloedt zelfs de reacties ten opzichte van morele vraagstukken. In het huidige proefschrift zullen drie hoofdstukken worden gepresenteerd die laten zien dat als gevolg van ambiguïteit, morele oordelen, beslissingen en gedrag beïnvloed kan worden door informatie die tijdelijk cognitief toegankelijk is voor een persoon, en geactiveerd wordt door conceptuele betekenisvolle situationele en contextuele prikkels en signalen (Kay e.a., 2004). Meer concreet zal het huidige proefschrift zich richten op abstracte categorieën en concrete persoons-exemplaren informatie die resulteert in het activeren van interpretatiekaders en vergelijkingsstandaarden (Stapel e.a., 1997), saillante principes die onderdeel zijn van een doelenconflict (Kurtines, 1986), en belichaamde kennis (Caporael, 1996; Glenberg, 1997; Glenberg & Robertson, 2000; Wilson, 2002) geactiveerd door lichaamshouding.

### **Het huidige proefschrift**

Mensen vinden het vaak moeilijk te reageren op morele vraagstukken, omdat er meer kanten aan een moreel vraagstuk zijn. Morele vraagstukken zijn vaak met onzekerheid omgeven. Daarbij komt dat de informatie waarop mensen hun oordelen baseren vaak ambigu en incompleet is (Griffin & Ross, 1991). Het is in deze gevallen niet duidelijk wat de

juiste reactie is, wat verder bijdraagt aan het ambigue karakter van deze situaties. Bijvoorbeeld, was het nu moreel of immoreel dat Shell in Zuid-Afrika bleef ten tijde van de Apartheid? Moreel, omdat het werk, inkomen en respect gaf aan een deel van de bevolking dat zwaar te lijden had onder het racistische regime. Immoreel, want het gaf legitimiteit aan een ondemocratisch, racistisch en gewelddadig systeem.

In Hoofdstuk 2 van het proefschrift suggereer ik dat morele oordelen gevoelig zijn voor de invloed van tijdelijk cognitief toegankelijke informatie. De literatuur omtrent sociale oordelen stelt dat wanneer een gebeurtenis die beoordeeld moet worden ambigu is en interpretatie vraagt, de informatie die tijdelijk cognitief het meest toegankelijk is het oordeel zal beïnvloeden (bijvoorbeeld, Higgins, 1989; Higgins, Rholes & Jones, 1977; Sedikides & Skowronski, 1991; Stapel e.a., 1997; Stapel & Marx, 2007; Wyer & Srull, 1989). Onderzoek naar sociale oordelen laat zien dat het beoordelen van ambigue situaties kan resulteren in assimilatie (oordelen en evaluaties verschuiven in de richting van de geactiveerde kennis), maar ook contrast (oordelen en evaluaties verschuiven in de tegenovergestelde richting van de geactiveerde kennis). Op basis van deze bevindingen wordt in Hoofdstuk 2 voorgesteld dat morele oordelen ook beïnvloed worden door dit effect van toegankelijke kennis, waardoor het oordeel over dezelfde morele gebeurtenis verandert, afhankelijk van welke kennis cognitief tijdelijk beschikbaar is. In Hoofdstuk 2 worden twee studies gepresenteerd die laten zien dat cognitief tijdelijk toegankelijke informatie leidt tot assimilatie of contrast van morele oordelen. Wanneer er sprake is van tijdelijk geactiveerde abstracte informatie zal deze informatie als globaal interpretatiekader worden gebruikt tijdens de beoordeling van ambigue morele vraagstukken. Dit leidt tot de assimilatie van morele oordelen in de richting van de geactiveerde informatie. Daarentegen zal tijdelijk geactiveerde concrete persoonsinformatie als vergelijkingsstandaard worden gebruikt, wat resulteert in oordelen die contrasteren met de geactiveerde informatie.

Wanneer mensen worden blootgesteld aan morele abstracties, zoals een afbeelding van Vrouwe Justitia, of het logo van het Wereld Natuur

Fonds (abstracte morele symbolen), dan beoordelen zij de hoofdpersoon in een moreel ambigue situatie als meer moreel dan mensen die voor hun reactie geconfronteerd zijn met afbeeldingen van een hakenkruis of een bordje waarop wordt aangegeven dat blank en zwart naar een apart toilet moeten (abstracte immorele symbolen). De abstracte categorie kennis wordt als interpretatiekader gebruikt, wat leidt tot assimilerende morele oordelen (Studie 2.1 en 2.2). Wanneer je personen daarentegen confronteert met afbeeldingen van morele (bijvoorbeeld Moeder Teresa of Nelson Mandela) of immorele (bijvoorbeeld Osama Bin Laden of Saddam Hussein) persoons-exemplaren, draait de beoordeling van dezelfde hoofdpersoon in dezelfde ambigue morele situatie om. Personen die worden geconfronteerd met foto's van Moeder Teresa, Nelson Mandela, of Martin Luther King, zullen de hoofdpersoon in een ambigue morele situatie als minder moreel beoordelen, dan mensen die geconfronteerd worden met foto's van Bin Laden, Saddam Hussein of Stalin. Deze mensen beoordelen dezelfde persoon als meer moreel. De geactiveerde informatie over de concrete persoons-exemplaren wordt als vergelijkingsstandaard gebruikt. Het resultaat zijn contrasterende oordelen. Mensen worden al snel als minder moreel dan Nelson Mandela en minder immoreel dan Bin Laden bevonden (Studie 2.2.).

Wanneer morele dilemma's moeten worden opgelost kunnen principes met elkaar in conflict komen die voor tegenstrijdige keuzes staan. Hoe te reageren op deze morele dilemma's waar verschillende principes met elkaar in conflict zijn? Vergelijk het met de discussie rondom terrorisme. Is het goed of slecht dat topterroristen worden gedood met veel kans op dodelijke slachtoffers onder onschuldige burgers, wanneer je weet dat door de topterrorist te doden toekomstige duizenden levens kunnen worden gered? In dit vraagstuk zijn de principes "Gij zult niet doden" en "Red zo veel mogelijk mensen" met elkaar in conflict. Dit maakt morele dilemma's vaak moeilijk. Verschillende principes kunnen met elkaar in conflict zijn.

Verder kan gesteld worden dat principes gerelateerd zijn aan bepaalde doelen. Het principe "Gij zult niet doden" heeft als doel om niet

te doden. Het principe “Red zoveel mogelijk mensen’ heeft als doel zoveel mogelijk mensen te redden. Met andere woorden, morele dilemma’s zijn eigenlijk situaties waar doelen met elkaar in conflict zijn (Kurtines, 1986). Op basis van onderzoek naar doelen weten we dat conflicten tussen doelen opgelost kunnen worden doordat het ene of het andere doel als gevolg van subtiele signalen in de omgeving cognitief meer toegankelijk wordt (Aarts, Custers & Holland, 2007; Bargh & Barndollar, 1996; Shah, Friedman & Kruglanski, 2002). Kortom, hoe het conflict tussen verschillende principes binnen morele dilemma’s opgelost wordt, hangt af van welk principe in het hoofd van mensen het meest geactiveerd is.

Principes zijn te activeren door aan deze principes gerelateerde symbolen in de omgeving aan te bieden. In hoofdstuk 3 hebben wij gevonden dat een afbeelding van de Tien Geboden, het internationale peace-teken en het logo van de stichting Tegen Zinloos Geweld worden geassocieerd met het principe “Gij zult niet doden”. Het logo van het Internationale Rode Kruis, het symbool voor een ambulance en een afbeelding van een reddingsboei worden geassocieerd met het principe “Red zoveel mogelijk mensen”. Naast maatschappelijke bestaan er ook filosofische morele dilemma’s waarin deze principes in conflict zijn met elkaar, bijvoorbeeld het voetbrug dilemma. In het voetbrug dilemma bedreigt een losgeslagen spoorwagon vijf mensen die verderop aan hetzelfde spoor werken. Proefpersonen staan op een brug over het spoor naast een onbekende persoon. Door deze persoon voor de aanstormende wagon te duwen worden de vijf personen gered. In deze dilemma’s zijn mensen geremd om in te grijpen (Hauser, 2006), wij denken omdat bovengenoemde principes met elkaar in conflict zijn. Dit is echter een theoretische aanname. In hoofdstuk 3 hebben wij gemeten of dit conflict ook echt bestaat. Wanneer dit zo is, is het namelijk mogelijk om dit conflict, parallel aan onderzoek naar doelen, op te lossen door het ene of andere principe meer te activeren in de hoofden van mensen. Dit hebben wij in Hoofdstuk 3 in drie studies gedaan door of het ene of het andere principe met behulp van de bovengenoemde symbolen te activeren. Uit de resultaten blijkt dat mensen die subtiel geconfronteerd worden met

symbolen geassocieerd met “Gij zult niet doden” minder genegen zijn in te grijpen in een moreel dilemma waar zij moeten kiezen tussen het redden van vijf mensen ten koste van een persoon. Echter, mensen die subtiel geconfronteerd worden met symbolen die geassocieerd worden met “Red zoveel mogelijk mensen” tonen een grotere bereidheid om in te grijpen voor het hogere doel: het grotere geheel. Zij hebben een grotere bereidheid om vijf mensen te redden ten koste van een persoon (Studie 3.2.). Zelfs wanneer deze symbolen onder de waarnemingsgrens, dat wil zeggen subliminaal, worden aangeboden (Studie 3.3).

Zoals eerder gesteld voelen mensen zich vaak geremd wanneer zij in moeten grijpen in morele dilemma's. Meer specifiek geven mensen als antwoord waarom ze niet ingegrepen hebben in een moreel dilemma, dat zij de kracht en macht misten om in te grijpen. Met andere woorden, mensen voelden zich machteloos. Om deze machteloosheid uit te drukken gebruiken mensen vaak metaforen die te maken hebben met de grootte, het lichaam en macht, bijvoorbeeld: “Dit probleem is te groot voor mij om te behappen” of “Ik ben maar een kleine schakel in de orde der dingen” of “Ik ben een lichtgewicht in vergelijking met dit probleem” (Keltner & Marsh, 2007; Stoll-Kleemann, O’Riordan & Jaeger, 2001). Het gebruik van fysieke metaforen van machteloosheid om het gebrek aan interventie te beargumenteren, duidt op de mogelijke invloed van *belichaamde cognitie*. Mensen vinden het heel moeilijk om abstracte concepten, bijvoorbeeld macht en hygiëne of schoonheid, mentaal weer te geven. Hiervoor gebruiken mensen informatie die binnenkomt via hun concrete sensorische systemen, bijvoorbeeld visuele (met behulp van de ogen), audio (met behulp van de oren) of tactiele (met behulp van de huid) informatie. *Belichaamde cognitie* houdt in dat gebieden in de hersenen die verantwoordelijk zijn voor denken over abstracte concepten zoals macht en moraliteit, nauw verbonden zijn met hersengebieden die concrete sensorische ervaringen analyseren en verwerken. Dit betekent dat mensen hun lichaam gebruiken om abstracte concepten te gronden, oftewel te begrijpen. Lichamelijke activiteit en cognitie zijn sterk met elkaar verbonden en van elkaar afhankelijk. Volgens *belichaamde cognitie*

kunnen mensen abstracte informatie begrijpen met behulp van deze sensormotorische systemen, maar kunnen dezelfde sensormotorische systemen gedachten en gedrag van mensen ook beïnvloeden. Dat wil zeggen dat informatie die binnen komt via de zintuigen gedrag direct kan beïnvloeden zonder dat mensen dit door hebben.

Het idee van hoofdstuk 4 was om mensen een machtige, dat wil zeggen “uitgezette” oftewel machtige lichaamshouding versus een “samengetrokken” oftewel machteloze lichaamshouding aan te laten nemen, en hen in deze houding te laten reageren op morele dilemma's situaties, zoals voetbrug dilemma's en omstander situaties. Met behulp van deze belichaamde macht zouden mensen hun geremdheid en gevoelens van machteloosheid om in te grijpen, in moreel dilemma's situaties kunnen overwinnen. Uit de resultaten komt naar voren dat mensen die een machtige lichaamshouding aannamen, een grotere bereidheid toonden om in te grijpen in morele dilemma's (Studie 4.1.), dan mensen in een machteloze lichaamshouding. Daarnaast grepen zij sneller in door mensen in nood daadwerkelijk te helpen in omstander situaties (Studie 4.2), dan mensen in een machteloze lichaamshouding. Een machtige lichaamshouding hielp mensen dus om over hun geremdheid en gevoelens van machteloosheid binnen moreel dilemma's situaties heen te komen.

Tezamen laten drie hoofdstukken zien dat tijdelijk cognitief toegankelijke informatie reacties ten opzichte van morele vraagstukken kan beïnvloeden. Wanneer mensen moeten reageren op morele vraagstukken is de informatie op basis waarvan zij reageren vaak incompleet en kan deze op verschillende manieren geïnterpreteerd worden, waardoor het niet duidelijk is wat de juiste reactie is ten opzichte van deze vraagstukken. Mensen gebruiken de tijdelijk cognitief toegankelijke informatie om de ambigue situatie te verhelderen, waardoor zij in staat zijn oordelen te vellen, beslissingen te nemen en actie te ondernemen ten opzichte van deze vraagstukken. In het huidige proefschrift zijn drie hoofdstukken gepresenteerd die laten zien dat als gevolg van ambiguïteit, morele oordelen, beslissingen en gedrag beïnvloed kunnen worden

door informatie die tijdelijk cognitief toegankelijk is voor een persoon, en geactiveerd wordt door conceptuele betekenisvolle situationele en contextuele prikkels en signalen (Kay e.a., 2004). Abstracte categorie en concrete persoons-exemplaren informatie resulteert in het activeren van interpretatiekaders en vergelijkingsstandaarden wat leidt tot assimilatie en contrast van morele oordelen. Daarnaast beïnvloedt het meest toegankelijke principe binnen een morele situatie, morele beslissingen. Verder heeft belichaamde macht, geactiveerd door lichaamshouding zelfs een positieve invloed op daadwerkelijk hulpgedrag in omstandersituaties.

Ten slotte, moraliteit is belangrijk voor het goed functioneren van samenlevingen en morele vraagstukken liggen aan de basis van veel sociaal-maatschappelijke problemen waar de wereld in de 21<sup>e</sup> eeuw mee wordt geconfronteerd. Ik hoop dan ook dat de bevindingen gepresenteerd in dit proefschrift bij zullen dragen aan een beter inzicht in hoe morele oordelen, beslissingen en moreel gedrag tot stand komen. Op deze manier zou het onderzoek naar de situationele en belichaamde kennis betreffende morele vraagstukken en wat mensen goed of slecht vinden onder omstandigheden van onzekerheid en ambiguïteit, een eerste kleine stap kunnen zijn in het begrijpen en hopelijk oplossen van de problemen waar de mensheid zich mee geconfronteerd ziet.

# Dankwoord

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Ook waren daar de Vrouwen Justitia: Annemarie, Marjolein, Maureen en Suzanne. Bedankt voor alle gezelligheid tijdens koffiepauzes, congressen en op reis. Marjolein, toch een beetje de vrolijke en gezellige

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Marcel. Paranimf. Mercator Sapiens. Vriend sinds lang. Waldorf of Statler? Ik vind het bijzonder dat je wederom een officiële rol hebt aangenomen bij een belangrijke gebeurtenis in mijn leven. Afleiding en ontspanning zijn in je gezelschap altijd amusant en dikke pret, maar de diepgang en geëngageerdheid zijn nooit ver weg. Soms nemen we de wereld wel eens teveel op onze schouders. Gelukkig is er Messi. Marcel, *més que un amic*.

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# Curriculum Vitae

**R**on Broeders was born in Oud-Beijerland on February 3, 1976. After finishing the “Rijksscholen Gemeenschap” in Oud-Beijerland, he was determined to go abroad and went to the “Hogere Hotelschool” in the distant Leeuwarden. Soon after starting in Ljouwert he realized that there should be more in life than preparing quail chops in port wine gravy. Inspired by the psychological content of his marketing management courses, he decided to study Economic Psychology at Tilburg University. After graduating cum laude in December 2004, he started as a PhD-student in search for justice at Utrecht University in March 2005, under supervision of prof. dr. Kees van den Bos. The subject changed to morality, and eventually the project has resulted in the present dissertation and several scientific publications. Starting October 2009, Ron is working as a post-doctoral researcher at Eindhoven University of Technology, at the department of Human Technology Interaction on sustainability, psychology and technology.

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