INSTUTITIONEN FÖR PSYKOLOGI

For Future Reference; Cognitive Empathy is Augmented Over Temporal Distance

- An investigation of temporal distance influence on empathy

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ABSTRACT

The goal of this experiments was to investigate a possible link between emotional and cognitive empathy and temporal distance. Along the lines of the Affect dependent time discounting hypothesis (Liberman & Trope, 2000) it is proposed that emotional reactions to empathic events decrease with temporal distance and cognitive reactions to the same empathic events increase. To test this hypothesis series of three experiments were carried out. Participants either read empathy evoking vignettes that took place in present or in the future. They were requested to report to what degree they engaged in perspective taking (cognitive empathy) respectively emotional empathy. Non significant tendencies were found in experiment 1 and 2 and a significant main effect was found for participant engagement in perspective taking in the distant future. Whereas effects for emotional empathy were inconclusive. Partially confirming empathy's susceptibility to the affect dependent time discounting effect. Moreover results from experiment 3 exhibited non significant tendencies for a decrease in temporal distance for both types of empathy for target situation-irrelevant emotions, providing support against the affect dependent time discounting hypothesis. Implementations of a vignette method and a probable social distance component are discussed.

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Suppose within a near future, for instance next week you were to witness a person lose their job due to unfair circumstances and now suppose you witness a person lose their job due to the same unfair circumstances in a distant future, say 10 years from now. What type of mental representations would follow from these two temporally different scenarios? Hopefully an empathic response of some kind would be in order, but what kind? According to some theorists the scenario that takes place next week will evoke more emotional responses whereas the one that takes place 10 years from now will evoke a more reflective abstract way of thinking about the situation (Liberman, Trope & Stephan, 2007). The present study investigates this very phenomenon; how temporal distance can affect empathic responses and how people mentally represent these temporally different scenarios?

Social and cognitive psychology suggests that there are multiple ways in which people mentally represent events. One heavily researched theory on mental representation was composed by Liberman & Trope (1998) and is referred to as The Construal Level Theory (CLT). CLT basically suggests that people mentally represent events or objects either in a concrete or in an abstract manner depending on how they are presented. Moreover a large amount of research in both cognitive neuroscience and social psychology has focused on the construct empathy. Empathic reactions are also multifaceted and researchers generally agree that individuals can react to empathy evoking events in multiple ways. Sometimes individuals apply more cognitive and reflective types of empathy and sometimes individuals react more direct and emotionally towards the event (Davis, 1980). According to the CLT all events, including empathic ones, are mentally represented. Empathic reactions should be divided into concrete and abstract mental representation depending on how the event is presented. This study will investigate whether and in what way the construct empathy is susceptible to the CLT manipulation of psychological distance.

Construal Level Theory and its relation to Affect

As mentioned before, the Construal Level Theory concerns how people mentally represent objects or events (entities). CLT entails the prospect of so called psychological distance and its influence on mental representation. Liberman & Trope (2010) suggest that everything that is not here and now (that is psychologically distant) is a mental construct. Because it is a mental construct it uses different mental capacities than psychologically present entities. Psychological distance can be of the temporal, spatial and social kind. Take social distance for instance, a stranger is someone that is socially distant from you whereas a friend is socially

close. You would think about a friend in a different way than when thinking about a stranger, that is mental representations of these two individuals are different. CLT propose that the greater the psychological distance is from the person or object, the higher levels of construals are used to represent information about it or them and thereby the name *construal* level theory. In contrast, if something is psychologically close then low-level construals are used. Liberman & Trope (2010) distinguish between levels of construals and propose that psychologically distant entities are construed on a higher level. What then are high and low-level construals? High-level construals consist of abstract mental representations retaining only features that are superordinate (why) or primary to the entity. Low-level construals retain concrete mental representations and features that are secondary or subordinate (how) to the entity (see Table 1 for distinction between high and low-level construals). For example, an action can be represented in these terms. The action; *reading an introductory psychology book* is a concrete action, but identifying it in an abstract form could involve *understanding the world of psychology*. Once entities or actions are examined under psychological distance they reveal if they are mentally represented in a high-level or low-level way.

Table 1. Distinguishing between High-Level and Low-Level Construals

High-level construals	Low-level construals
Abstract	Concrete
Simple	Complex
Structured, coherent	Unstructured, incoherent
Primary, core	Contextualized
Superordinate	Secondary and subordinate
Goal relevant (central)	Goal irrelevant (peripheral)

Liberman & Trope (2003)

Liberman & Trope (2002) among others have provided support for that distant entities are construed on a higher level in temporal distance (e.g. Agerström, Björklund & Allwood, 2010; Agerstörm & Björklund, 2009; Liberman & Trope, 2000 & 1998), spatial distance (e.g. Mano, Harada, Sugiura, Saito & Sadato, 2009), social distance (e.g. Levy, Freitas & Salovey, 2002; Liberman, et al., 2007; Liviatan, Liberman & Trope, 2008) and hypotheticality (Wakslak, Trope, Liberman & Aloni, 2006). The most investigated CLT hypothesis is Temporal Construal Theory (TCT) which involves that people use more abstract schemas or higher level construals to represent distant future situations than near future situations

(Liberman & Trope, 2000). This hypothesis has been susceptible to constructs like morality (e.g. Agerström, Björklund, Allwood, 2010 & Agerström & Björklund, 2009), preferences of choice (Liberman & Trope, 2000), Creativity (Förster, Friedman & Liberman, 2004), prediction (Nussbaum, Trope & Liberman 2003) and action identification. Temporal Construal Theory's credibility and compatibility with other constructs is vital in the present study because it is of interest whether it will be compatible with empathy. Empathy is loosely defined as the mechanism of understanding and experiencing other's emotions. Empathy includes two vital and main components, a cognitive and an emotional component. The emotional component involves experiencing an affective emotional state that is or is not the same as for the target person. The cognitive component is the capacity to take the others perspective, for example perspective taking (Decety and Jackson, 2004). In order to examine empathy it is therefore crucial to investigate what relation emotions or affects have to CLT and psychological distance.

In social research it is often understood that people react more strongly to events closer to them in time or space, to events that happen to themselves rather than to others, to events that are real as oppose to those of the a hypothetical kind (Liberman et al., 2007). Psychological distance should therefore weaken all affective responses. In accordance with the CLT affective responses should therefore be made up of concrete low-level construals where they are often contrasted with reflective and cognitive high-level responses. Declarations of these types are too simplistic and several other hypotheses have emerged on the parallel of psychological distance and affect. Some hypotheses focus on the affect's valence, type or magnitude of outcome (Liberman, et al., 2007). For example, there are different types of affective responses and some may be more associated with lower-level and some with higher-level construals. Moreover some affective responses are capable of producing both levels. One approach of untangling affects in relation to levels and psychological distance is through one of Lieberman's et al., (2007) suggestions; to what extent does the affect require going beyond the subjective "here and now" experience. Basic emotions for example don't necessarily have to go beyond ones "here and now" experience. For example, happiness or sadness are often experienced the very moment that something happen. Advocating that all basic emotions are low-level. Emotions such as pride and guilt on the contrary are associated with reasoning behind them such as perspective taking or imagining future consequences making them high-level (Liberman et al., 2007). Another hypothesis that suggests

distinguishing between low-level and high-level affects is Loewenstein's (1996) "hot" and "cool" distinction. Stimuli can either be mentally represented in terms of its emotionally arousing "hot" features or its cognitively informational "cool" features. This hypothesis proposes that the effect of psychological distance depends on whether the affect has "hot" or "cool" value (Loewenstein, 1996 & Loewenstein, Weber, Hsee, & Welch, 2001). This is along the lines of Liberman & Trope's (2000 & 2003) affect dependent time discounting hypothesis (ADTD), which assumes that the affect based value undergoes a steeper time-discounting than those of cognitive value. When for example determining the value of an option, temporal distance increases the weight of cognitive outcomes and decreases the weight of affective outcomes. Liberman & Trope (2003) found that the temporal distance would influence the tastiness (hot value) and nutrition (cool value) value of a meal. The greater the temporal distance, the more nutritious value was important for the participants in contrast to the tastiness. Empathy involves other peoples' emotions, these emotions can be basic, have extensive reasoning behind them, include cool information or include hot information. The present study investigates how people mentally represent other peoples' emotions through presenting basic and hot emotions such as anger and also cool information and reasoning behind the emotions. It is up to the participants to decide what to focus on[1]. According to the ADTD, temporal distance will increase the weight of focus on cognitive information (cool) whereas the weight of focus on emotional information (hot) will decrease. With this temporal effect, people should tend to apply so called cognitive empathy for the cool information and experience emotional empathy for the hot information.

Other investigated dynamics of the CLT include central and peripheral aspects of entities or emotions. For example, a central aspect of an emotion would involve how relevant it is to the situation that it is experienced in. The situation itself can also include high- or low-level construal features. For example, crying because of sadness at a funeral is highly relevant and is associated with reasoning around the facts of life (i.e. sadness; relevant and central emotion with a high-level representation of the situation). Whereas laughing at someone's joke at the funeral is irrelevant to the situation which is associated with experiencing happiness for the moment (i.e. happiness; irrelevant and peripheral emotion with a low-level representation of the affective state). Central aspects are composed of higher-level construals than peripheral aspects. Central aspects are goal relevant and are directly associated with the present goal.

[1] Focusing on information can either be a conscious or unconscious mental action and in this study the underlying process of attention focus is not discussed here,.

Whereas peripheral aspects are composed of low-level construals and are often goal irrelevant (Liberman et al., 2007). Temporal distance will increase the weight of central features relative to peripheral features. For example Liberman & Trope (2000) requested participants to imagine buying a radio set now or in a year's time. The goal of the radio set was to listen to programs on it. Participants were informed that the sound quality of the radio was good (central aspects) but the clock on it was useful (peripheral aspects) or participants were informed that the sound quality was poor but the clock was useless. Participants who thought about buying the radio set in the future were more inclined to focus on the good sound (central aspects), and the participants that thought about buying in the present focused more on the clock being useful (peripheral aspects) (Liberman & Trope, study 3). Central and peripheral aspects in relation to emotions were investigated in Liberman & Trope (2000, study 5). As mentioned previously both emotions and cognitive types of value can be either of high or low level, both can be augmented as discounted over time manipulation. This affect-cognitive dimension was investigated through providing the participants with four films varying in cognitive (informativeness) or affective (funniness) value and requested the participant's preference for viewing them now or in the future. The participants were also provided with two main goals; cognitive goal (to discuss principles of comic films) or affective (to get into a good mood). The four descriptions of the four films were; uninformative and not funny, not funny, but informative, informative and funny and uninformative and funny. The results established that the effect of the cognitive value on film preferences increased with temporal distance when it was goal relevant and the same effect for affective value on film preferences was seen when affect was goal relevant. Inconsistent with the affect-dependent time discounting hypothesis, which predicts that the effect of cognitive value on film preferences will increase with temporal distance, regardless of whether the cognitive value is goal relevant or not. Concluding that when goal relevant information and affective information are presented together, then affect will not be time discounted if it is goal relevant because it becomes high-level. Using a similar design to Liberman & Trope (2000; study 5) part of the present study (experiment 3) will investigate central and peripheral aspects of emotions to indicate if a similar pattern is applicable for cognitive and emotional empathy. Testing whether emotional and cognitive empathy towards central emotions have similar patterns and are augmented over temporal distance.

In lack of knowledge CLT would propose that empathy retains only low-level construals due to empathic responses do not require transcending (go beyond/exceed) ones direct

expectancies and should therefore undergo steep time discounting.. However, as previously mentioned empathy research points out a difference between emotional and cognitive empathy. Emotional empathy is a direct process and involves contagion of another person emotions, cognitive empathy involves taking perspective on other a another person (Decety & Jackson, 2004). In the lines of CLT and affect-time discounting hypothesis, cognitive empathy pertains to a higher level of construal than emotional empathy and emotional empathy should be discounted over temporal distance. In order to investigate such an hypothesis the complexity of the construct empathy must be explained in detail.

Empathy as a construct

One prominent feature in the research on empathy is the disagreement in the definition of empathy, although close to all modern definitions include that empathy is multifaceted (Krämer, Mohammadi, Donamayor, Samii & Munte, 2010). Here a broad definition of empathy is presented in order to include both the cognitive and emotional components of empathy. Research on empathy often proposes that empathy is a multidimensional component. As mentioned previously the main components include two key components; (1) An affective emotional state that is or is not the same as for the target person, referred to as emotional empathy or affective empathy. (2) The cognitive capacity to take the others perspective, referred to here as perspective taking or cognitive empathy. (3) Regulatory mechanisms that keep track of the origins of the feelings (self vs. other) (Decety and Jackson, 2004)[2].

Emotional empathy can either involve experiencing the same emotion as the target person or some kind of emotional experience brought forward by the target person's demonstration of emotions. Support for emotional empathy predominantly comes from neuroscientific studies. These have found that emotional empathic responses involve the same underlying brain regions as when the subject experiences their own emotions, sensations and actions as when they observe these in others. Brain regions associated with motorplanning are activated when individuals execute a simple finger, hand or facial movement and when they see the same movement made by someone else (Ochsner, Zaki, Hanelin, Ludlow, Knierim, Ramachandran, Glover & Mackey, 2008). One commonly tested neurological model suggests

[2] However the third mechanism is not of interest in this study and will not be discussed further.

that actions are often linked to the neurological network of mirror neurons or shared circuits. Basically, these mirror-neurons act as mirrors and imitate the action for neural representation, without performing the physical action (Danziger, Faillenot & Peyron, 2009; Jackson, Rainville & Decety, 2006; Keysers & Gazzola, 2007; Vignemont & Singer, 2006; Uddin et al, 2007). Besides imitating actions the shared circuits work imitate emotions and sensations; which is more related to empathic responses then pure actions (Ochsner et al, 2008). Research from Functonal Magnetic Resonance Imaging (fMRI) studies suggests that observing another person's emotional state will activate parts of the neural network involved in processing that same state in oneself and therefore will elicit an empathic response (Vignemont & Singer, 2006). Support from the social psychological domain involves vignettes, questionnaires and personality tests. Such as IRI (Davis, 1980), which measures both cognitive (perspective taking) and emotional (empathic concern) components of empathy in a 28-item self-report. This questionnaire has been used in a number of studies (e.g. Mencl & May, 2008 & Livitan et al., 2008). The empathic concern scale (EC) measures the degree to which the person experiences compassion, warm feelings and concern towards a target person (Davis, 1980). William James (1890/1983) describes people's experiences of their own emotions "*a warmth and intimacy about them of which others are completely devoid*" (pp.314). This focus on subjective and internal thoughts and feelings is central to how people experience their present selves. This centrality doesn't and cannot extend onto our future selves (Pronin, Olivola & Kennedy, 2008). William James is describing Lowenstein's "hot" emotions where there is an intensity which is hard for other people to fully and precisely comprehend. People cannot experience other peoples' emotions, instead they experience emotional empathy and this cannot be extended onto our future selves but is something that happens in the present. To fully understand and comprehend other's emotions that take place in the future people rely on methods such as perspective taking.

Perspective taking is a mental technique involved in what research refers to as cognitive empathy. Cognitive empathic functions evoke empathic responses through imagining the emotional state of another. For example metalizing, this involves the subject thinking about the target person and their current affective state. Theory of Mind, which is the awareness that other people have mental states that can be different from your own (Shamary-Tsoory, Aharon-Peretz & Perry, 2009). The term that is of interest in this study and mostly used the term perspective taking and it is regularly used to describe the function of analysing other people's affective/mental states, trying to understand and figure out how the other person

feels about a situation. Sometimes this can be done by thinking about another person's situation by putting yourself in their shoes and imagining how you would feel. A number of perspective taking models in social psychology propose that being able to imagine someone else's situation derives from one's own implicit theories what the other feels, thinks and believes. And in order to understand someone else's state, requires taking one's thought about the situation into account (Decety & Ruby 2004). Batson, Early & Salvarani (1997) suggest that prior social psychological research has identified two types of perspective taking that play a role in moral/empathy decisions, these are;

(1) Imagining oneself in their position, how you would feel, your thoughts and so forth (imagine-self perspective)
(2) Imagining how they feel, thoughts and so forth (imagine-other perspective)

Batson et al (1997) found that imagining-self perspective will evoke distress and empathic feelings whereas imagining-other perspective will evoke empathy feeling only. A more recent study by Batson, Lishner, Carpenter, Dulin, Harjusola-Webb, Stocks, Gale, Hassan & Sampat (2003) investigated whether perspective-taking will help promote moral action. They found that imagining oneself in the target persons situation will evoke feelings such as distress and also evoke more egoistic motivation. However imagining the others feelings would evoke more morality and assumed empathy. Batson et al., (2003) tested their proposition through two different situations, where participants had the chance to assign themselves and another to an experimental task. One task was clearly more desirable than the other. Participants that placed themselves in the other situation didn't increase morality. Whereas participants that imagined how the other was feeling increased assignment of the other to the desirable task. The authors suggest that this is due to increased empathy. In another experiment they assigned participants to the same conditions but the task assignment was different. The participants were to either accept an initial task assignment that would give them positive consequences (raffle ticket) and the other receives nothing. The participants could also change the conditions of the experiment and assign the other and themselves so that both could receive moderately positive consequences. The last condition was a significantly more attractive action if the participant was in the imagining oneself in the other place. These two types of perspective taking are clearly vulnerable in different ways to moral action but do they differ in other contexts, such as empathic situations?

It is worth pointing out that the relation between emotional empathy and cognitive empathy is yet unclear, neuroscientific studies to date have been increasingly incapable of characterizing the neural networks involved in emotional and cognitive empathy (Shamay-Tsoory et al., 2009). Through a lesion study Shamay- Tsoory et al., (2009) it was found neurologically that emotional and cognitive empathy are separate. However social psychological research has found perspective taking to be mediated through emotional empathy (Decety & Ruby 2004 & Levy et al., 2002). Cognitive and emotional empathy are clearly well established functions of empathy and according to the ADTD emotional empathy should undergo a steeper time-discounting than cognitive empathy. Assuming then that emotional empathy involves low-level construals and that in near future scenarios more emotional reactions are expected. And cognitive empathy involves higher-level construals and that in future scenarios more perspective taking is used.

Current research on empathy and psychological distance

Empathy in the terms of temporal distance has not been directly measured prior to this study; therefore previous research is in this area is limited. However there have been a handful of relevant studies that have aided the development of this study. Social and physical distance are manipulations that have been verified to be influential on empathy. Classical studies such as Milgrams (1965) on social obedience or war stories about how physical distance reduces empathic feelings towards the victim demonstrate how physical distance can have an effect on different types of empathic reactions. A more recent fMRI study performed by Mano et al. (2010) examined the relationship between spatial distance and heightened use of perspective taking in empathy in a narrative comprehension task. Participants were exposed to two empathic evoking scenarios, one where the target was either present at the same location (here and now) or at a distant location (there and now) during the scenarios. The posterior cingulat cortex and the right temporoparietal junction (which both are associated with mentalizing or perspective taking) was activated more prominently in the “there and now” than the “here and now” condition. Relating back to CLT, low-level construals retain aspects that don’t go beyond “here and now” experience and high-level construals are associated with do go beyond “here and now”. From this a conclusion is drawn that empathic perspective taking can be linked to high-level construals whereas more basic empathic responses (in this case here and now) could be linked to low-level construals. This points to that cognitive empathy is vulnerable to physical distance, bringing us one step closer to the

credibility of the present study's hypothesis. Moreover, some form of psychological distance using narrative comprehension works on the two types of empathy.

In an exploratory investigation Mencl & May (2008) examined psychological, social and physical proximity in ethical decision making (EDM). Ethical decision making can be influenced by principle based or utilitarian reasoning. By modifying the empathic concern and perspective taking subscales of IRI (Davis, 1980) they measured among other things how empathy can moderate the effects of social and physical distance on EDM. Participants were exposed to empathy evoking vignettes, with social, psychological and physical distance conditions. Cognitive empathy was found to moderate the relationship between physical distance and utilitarian evaluations. Specifically, the physical distance condition exhibited higher levels of utilitarian evaluations when cognitive empathy was high. These levels of cognitive empathy didn't differ with non-physical distance manipulations. Indicating that participants that scored high on the perspective taking scale engaged more in utilitarian evaluations when there was a physical distance condition. Affective empathy on the other hand marginally moderated the relationship between physical distances and so called principle-based evaluations. When participants knew how far away the person was (physical distance condition) then principle evaluation engagement was greater for those that scored high on the affective empathy scale. The authors indicate that this depends on that people's compassion is influential when considering the responsibility towards that person. Mencl & May (2008) provide support for linking physical distance with cognitive empathy and also with perspective taking.

Not only is physical distance a type of psychological distance but also social distance. Liviatan et al., (2008) conducted four experiments investigating to what degree similarity (social proximity) between individuals influence the representations of other's actions. Based on the same information about the target person's actions and situations, participants were to judge either similar or dissimilar targets. Suggesting that people form different mental representation of dissimilar others than to similar others even when they are provided with the same information about them. Suggesting that similar others are mentally represented in a more concrete, detailed way and that judgments of these others come from lower-level information. Whereas dissimilar others are mentally represented in a more abstract, broad way where information is based on central aspects. For example participants guessed a target's actions through superordinate (why) features and subordinate (how) features. This was measured by the Behavioral Identity Form (BIF; by Vallacher & Wegner, 1989). The BIF

assesses individual differences in action identifications through concrete or abstract terms. The participants read about the target person that attended the same class as them (similar condition) or a different class (dissimilar condition). Participants in the similar condition had significantly lower level construal scores compared to those of in the dissimilar condition. Specifying that participants classed dissimilar other's actions in a more abstract and superordinate way and similar other's in a more concrete and subordinate way (Liviatan, study 1). In another experiment participants judged if a target person was suitable for a job. Participants were provided information about the person if requested in the form of primary (salary, promotion, interest) and secondary (dress code, office supplies) decision related aspects. The results indicated that the participants in the similar condition were more interested in receiving information than those in the dissimilar condition. And participants were more interested in receiving primary information than secondary information (Liviatan, study 2). A third experiment investigated central (goal relevant) and peripheral (goal irrelevant) aspects of information. For example participants were requested to evaluate a high or low quality essay (being the central and high-level aspect of value). This essay was supposed to have been written by a student who had done good or bad on an unrelated physics exam (a peripheral and low-level aspect of value). Results indicate that weight of the peripheral information (the physics exam) in contrast to the central information (the essay quality) was greater in participant's evaluation of the essay written by similar student than by the dissimilar student (Livitan, study 4). Concluding and providing further evidence for a construal level account, that people mentally represent similar others' actions in a more low-level and concrete way compared to dissimilar other's actions. Moreover central information about another is related to dissimilar others (social distance) and peripheral information about another is related to similar others (social proximity). Therefore could it be the case that central information about others' emotions presented in an empathic way, would be more related to distance future (temporal distance) and peripheral information about others' emotions presented in the same way would be more related to near future (no temporal distance)?

Levy, Freitas & Salovey (2002) also investigated the role of social distance through participant's proneness of abstract verses concrete thinking. Where Liviatan et al., (2008) suggest that people mentally represent dissimilar individuals in an abstract way, Levy and colleagues propose that individuals become more similar through abstract thinking and perspective taking. People that chronically represent action in abstract terms are more likely

to view themselves as sharing goals with others, hence are more likely to perceive similarity between them and others. In a row of six studies they requested participants to engage in perspective taking (abstract thinking condition), answer the BIF and a modified IRI questionnaire (Davis, 1980). Results indicate that people that tend to identify action in a more abstract manner tend to perceive similarity between themselves and others from other social groups compared to those who identify action in a more concrete manner. Moreover, students holding abstract representation of a professor (similar person) found it easier to engage in perspective taking of how it would be to be a professor (Levy, study 3). One interesting finding in this study was that action representation and empathic concern were found to relate positively to each other and the relationship was mediated by perspective taking. More specifically, emotional empathy (Davis's empathic concern) can be mediated by perspective taking. As Liviatan et al., (2008), Levy and colleagues have provided further support that abstract thinking or high-level mental representations are connected to perspective taking. Also that empathy's perspective taking is susceptible to social distance. In the lines of the current investigation, according to the CLT imagining future events evokes more abstract thinking, empathic reactions should therefore fall naturally to perspective taking and not as much emotional empathic reactions.

Very few studies have investigated temporal distance influence on empathy. Pronin et al., (2008) conducted a study considering decision making for future selves, present selves, present others and distant others, exploring the correspondence between temporal distance and social distance. They argue that people tend to make different judgments for others than for themselves and also for future selves and present selves This is due to that future selves and present selves are often mentally represented as they are different people. Future selves are perceived more visually and with stranger tendencies (Pronin & Ross, 2006). Through four different scenarios such as drinking a disgusting liquid (for the benefit of science) or tutoring peers during exam week participants were to make decisions for their future selves, present selves or for others. Results found that decisions for future self and others (for example another participant) were similar compared to decisions for present self. For example participants chose to drink more liquid in the future than in the present and the same for others, indicating that future selves and others are treated similarly (Pronin, study 1). Similar results were found for volunteering to tutor peers during exam (Pronin, study 2). Empathy was also measured through prosocial behavior of receiving charitable emails and participants chose to receive similar amounts of emails in all conditions (except for present self) due to

what the authors refer to as the "*internally salient -subjective experience*" empathy (pp.321). Concluding that social distance and temporal distance have similar influential status on decision making and that experiencing empathy can influence decision making in psychological distant conditions.

The present study

Previous research provides support for a link between empathy and physical distance (Mano et al., 2010 & Mencl & May, 2008) as well as social distance (Liviatan, et al., 2008; Pronin et al., 2008 & Levy et al., 2002) and that perspective taking is associated with abstract thought. On the contrary research on emotional/affective empathy and it's relation to psychological distance is inconclusive and next to nonexistent. Hence the foregoing research of psychological distance and empathy and the evaluation of past research on CLT in relation to affects leads to the current study. Predicting that temporal distance will have similar effects on cognitive empathy as physical and social distance, that is; it will prominently used in the distant future more than in the present. Investigating two main hypotheses in three experiments. Firstly, that cognitive empathic responses (perspective taking) retain high-level construals and is therefore more prominent in the distant future. Whereas emotional empathic responses retain more low-level construals and is more prominent in the near future, in accordance with the ADTD. Secondly, when two target emotions are presented, where one is relevant to the empathic situation and the other emotion is irrelevant, emotional empathy towards the relevant emotion retains high-level construals and therefore is equally prominent in the distant future as perspective taking for the same relevant emotions, against the ADTD

The present study conducted three studies to examine the construct empathy susceptibility to temporal distance. Experiment 1 tests participants cognitive and emotional empathic reactions to empathic evoking vignettes that took place either in the near future or in the distant future. Experiment 2 is a continuation of experiment 1 and investigates whether participants focus on cognitive information in the distant future and emotional information in the near future. Experiment 3 investigates how central and peripheral emotions in empathy evoking scenarios can alter participant's cognitive or emotional empathy when these scenarios take place either in the distant future or in the near future, investigating a affect and goal relevance dimension. Exploring whether participants engage more in perspective taking and experience more emotional empathy for central emotions in the distant future than for peripheral emotions, going against the affect-dependent time discounting hypothesis.

Understanding the relationship between empathy and temporal distance is important because it may help understand how people think about future problematic scenarios and if people can get an emotional reaction from things that happen in 10 years time. Also, to further provide support for the Construal Level Theory and it's compatibility with other constructs.

EXPERIMENT 1

The goal of experiment 1 is to investigate whether the construct empathy is susceptible to the ADTD. The hypothesis of experiment 1 is that cognitive empathy will increase with temporal distance and emotional empathy will decrease with temporal distance. More specifically it is hypothesized that people will engage in more perspective taking than they will experience emotional empathy when reading about empathy evoking events that take place 10 years from now. Whereas people who experience the same written events will experience more emotional empathy in contrast to engaging in perspective taking if the events take place next week. This study will measure cognitive empathy through perspective taking. Both Batson's et al., (2003) "imaging-self perspective" and "imaging-other perspective" are included in the experiment to investigate whether one concept is more susceptible to temporal distance than the other. Emotional empathy also includes two key concepts in this investigation. These are experiencing the same emotion as the target person (self-emotion) and experiencing some kind of emotional reaction towards the target person (other-emotion). Two items of each empathy component are included to investigate whether they differ in the degree that they are used.

Method

Participants and design

17 females and 19 males took part in this study (total: 36) and were recruited through two universities in the south of Sweden (M_{age} = 25.6, SD = 3.05). Participants were randomly assigned to their condition. None of the participants guessed the experiment hypothesis correctly, and therefore participant exclusions in the analysis was not required. Experiment 1 was a between subjects design with one independent variable time with two conditions; near future and distant future.

Materials and procedure

Based on a vignette method, which has previously been used in both empathy studies (e.g. Cohen & Strayer, 1996; Findlay, Girardi & Coplan, 2006; Young, Gudjonsson, Terry & Bramham, 2008) and CLT (e.g. Agerström et al., 2010 & Agerström & Björklund, 2009) studies, a questionnaire was constructed. A written vignette method involves an imaginary scenario of problematic interpersonal situations and requests participants to indicate which of several forced-choice behavioral alternatives they experience as most appropriate. A questionnaire consisting of three empathy evoking short scenarios was devised for the purpose of experiment 1. Each scenario involved a target person with some kind of difficulty, e.g. a guitarist that cannot play in a band because of tinnitus (see below for example of story, see appendix A for questionnaire 1). An example of an empathy evoking event is demonstrated below.

"*Patrik has worked at the local ICA-shop for ten years when he is wrongly accused of taking money from the till. There is 5000 kronor missing when the boss counts Patrik's till. In actual fact it is the boss's daughter that is working during the summer that has taken the money during Patrik's lunch break. Due to a number of previous thefts, management has decided to take drastic measures next time it happens. Patrik gets fired and has a hard time finding a new job due to him not being able to get a reference from his last employee. Patrik thinks that he has been treated unfairly and feels very frustrated and angry."*

After each scenario five questions were presented, each relating to either cognitive or emotional empathy. The first two questions related to emotional empathy, asking the participant if they experienced the same emotion as the target person (self-emotion) and if they experienced a general emotional response (other-emotion) ("*I got upset from reading that Andrea is sad and depressed"* and *"I felt a certain sadness when I read about Andrea"*). The second pair of questions related to perspective taking based on Batson et al., (1997), asking the participant if they took the perspective of the target person. The participants own thoughts and feelings if they were in that situation of the target person (imagine-self perspective) and the thoughts and feelings of the target person (imagine- other perspective) ("*I tried to put myself in Andreas situation through taking her perspective"* and *"I tried to put myself in Andreas situation through thinking how I, myself would have felt").* The fifth question was a bipolar question asking if they mostly reacted emotionally to the story or

mostly thought of how the target person experienced the situation. All responses were measured on a Likert-scale from 1 *(Strongly agree)* to 7 *(strongly disagree).* As a manipulation of temporal distance, two questionnaires were distributed. One asking the participant to imagine that these scenarios are to take place in year 2020 (future condition) or asking the participant to imagine that the scenarios will take place next week (near condition). To check participant awareness of the time manipulation they were asked when the supposed scenarios took place at the end of the questionnaire.

The participants were informed that the study involved empathy and empathic reactions and that it was anonymous. Half the participants were instructed to imagine that the stories took place next week or in year 2020 (ten years from now). After each story they were then instructed to answer five questions relating to empathy. They were then briefed and thanked for their participation.

Results and discussion

Two sets of analyses were run. Firstly examining possible differences between emotional empathy (self-emotion vs. other-emotion) and perspective taking (imagine-other perspective vs. imagine-self perspective) an independent t-test was run. In order to test the hypothesis that temporal distance influences empathy a second analysis was run. Moreover they were run for each vignette in order to investigate possible differences between the vignette scenarios.

Differences between items in empathy

Indicated by the means (see Table 2) no significant differences ($p > .05$) were found between experiencing the same emotion as the target person and experiencing some type of emotion towards the target person in the near future condition; Andrea $t(32) = .28$, $p > .05$, Patrik $t(32) = .-1.00$, $p > .05$, Hans $t(32) = .72$, $p > .05$ and in the distant future condition; Andrea $t(36) = .90$, $p > .05$, Patrik $t(36) = -.54$, $p > .05$, Hans $t(36) = .26$, $p > .05$. Also indicated by the means (see Table 2) no significant differences ($p > .05$) were found between taking the perspective of the target person and imagining yourself in the situation in the near future condition; Andrea $t(32) = .-1.30$, $p > .05$, Patrik $t(32) = .53$, $p > .05$, Hans $t(32) = .22$, $p > .05$ and in the distant future condition; Andrea $t(36) = .-90$, $p > .05$, Patrik $t(36) = -.12$, $p > .05$, Hans $t(36) = -.1.01$, $p > .05$.

Table 2: Means (standard deviations) for emotional empathy: self and other emotion and perspective taking: perspective target and self perspective in the near future condition and distant future condition.

Items	Vignette 1: Andrea		Vignette 2: Patrik		Vignette 3: Hans	
	Near	Distant	Near	Distant	Near	Distant
Item 1: Self-emotion	4.35 (1.69)	4.63 (1.67)	4.00 (1.69)	4.73(1.55)	4.11 (1.53)	5.05 (1.12)
Item 2: Other-emotion	4.17 (1.9)	4.15 (1.53)	4.58 (1.73)	5.00(1.41)	3.70 (1.75)	4.94 (1.31)
Item 3: Imagine-other perspective	4.11 (2.05)	4.57 (1.60)	4.70 (1.57)	5.26(1.36)	4.35 (1.32)	4.78 (1.31)
Item 4: Imagine-self perspective	4.88 (1.26)	5.05 (1.6)	4.41 (1.62)	5.31(1.29)	4.47 (1.66)	5.26 (1.55)

Concluding from these results, participants use both types of perspective taking and emotional empathy equally when empathically reacting on empathy evoking scenarios such as those demonstrated in the vignettes.

Effects of temporal distance on empathy

Table 3. Means (Standard deviations, Standard error mean) on empathy items in the near and distant future conditions.

Empathy Questions	Vignette 1: Andrea		Vignette 2: Patrik		Vignette 3: Hans	
	Near	Distant	Near	Distant	Near	Distant
Item 1: Self-emotion	4.35 (1.69, .41)	4.63 (1.67, .38)	4.00 (1.69, .41)	4.73 (1.55,.35)	4.11 (1.53, .37)	5.05 (1.12, .25)
Item 2: Other-emotion	4.17 (1.91, .46)	4.15 (1.53, .35)	4.58 (1.73, .42)	5.00 (1.41, .32)	3.70 (1.75, .42)	4.94 (1.31, .30)
Item 3: Target perspective	4.11 (2.05, .49)	4.57 (1.60, .36)	4.70 (1.57, .38)	5.26 (1.36, .31)	4.35 (1.32, .32)	4.78 (1.31, .30)
Item 4: Self	4.88	5.05	4.41	5.31	4.47	5.26

perspective	(1.26, .30)	(1.61, .37)	(1.62, .39)	(1.29, .29)	(1.66, .40)	(1.55, .35)
Item 5: Motpol	4.88 (1.79, .43)	4.05 (1.87, 42)	4.56 (1.63, .40)	4.10 (1.91, .43)	4.18 (1.47, .36)	3.68 (1.56, .35)

A independent t-test was run for each empathy item on questionnaire 1 in order to test experiment's 1 main hypothesis. Levene's Test for Equality of Variance showed that the groups were equal in variance. Inconsistent with our hypothesis, experiencing the same emotion as the target person (item 1: Self emotion) increased with temporal distance for all vignettes. All means in the distant future condition were greater than in the near future condition for all vignettes (see Table 3 for display of all means). These differences were non significant for Andrea $t(34) = .62$, $p > .05$ and for Patrik $t(34) = .18$, $p > .05$. A significant difference between near future and distant future condition was found for Hans $t(34) = .04$, $p < .05$, indicating that participants experienced the same emotion as Hans more in the distant future than in the near future. Consistent with the hypothesis, experiencing any emotion towards the target person (item 2: other emotion) decreased with temporal distance for vignette Andrea. This very small mean difference was non significant (Andrea $t(34) = .97$, $p > .05$). Inconsistent with the hypothesis for vignettes Patrik and Hans the means were greater in the future condition than in the near condition (see Table 3), indicating that participants experienced some kind of emotional reaction when imagining that the scenario took place in the distant future. The differences were non significant for Patrik $t(34) = .43$, $p > .05$ and significant for Hans $t(34) = .21$, $p < .05$.

Consistent with our hypothesis, imagining the targets perspective (item 3: Imagine-other perspective) increased with temporal distance for all vignettes. All means in the distant future condition were greater than in the near future condition (see Table 3). The differences were non significant for all vignettes, Andrea $t(34) = .45$, $p > .05$, Patrik $t(34) = .26$, $p > .05$, Hans $t(34) = .32$, $p > .05$. Consistent with our hypothesis, imagining self perspective (item 4: Imagine-self perspective) increased with temporal distance for all vignettes. All means in the distant future condition were greater than in the near future condition (see Table 3). The difference were non significant, Andrea $t(34) = .72$, $p > .05$, Patrik $t(34) = .72$, $p > .05$, Hans $t(34) = .14$, $p > .05$. In order to confirm our hypothesis the scores on the bipolar scale question should all be greater in the distant future condition than in the near future condition. Inconsistent with our hypothesis all means for all vignettes were greater in the near future

condition than in the distant future condition. All differences were non significant, Andrea $t(34) = .18$, $p > .05$, Patrik $t(34) = .45$, $p > .05$, Hans $t(34) = .33$, $p > .05$.

No differences were found in the degree of taking the perspective of another person through either imagining oneself in their shoes or imagining how they feel in both distant future condition and near future condition. Also no difference in the degree of experiencing the same emotion as the target person and experiencing some kind of emotion in both the distant future condition and near future condition. Concluding from these results both "types" of perspective taking and emotional empathy can be used in measuring cognitive and emotional empathy in these types of empathy evoking vignettes. The remaining results showed an inconsistency with the main hypothesis. Generally there was an non significant tendency to be more emotionally empathic and use perspective taking in the distant future compared to the near future. These conflicting results do not coincide with ADTD because both empathic responses increased with temporal distance.

Alternative explanations to these conflicting results can depend on a number of experimental errors. Firstly, no check for balance between emotional and cognitive information in the scenarios were made. For example, if there was more emotional information then cognitive information in one scenario then participants experienced more emotional empathy regardless of time condition. Moreover, participants declared to significantly use more emotional empathy in the distant future condition than in the near future condition. This was especially outstanding in the Hans vignette, where there was a significant effect for emotional empathy in the distant future. This could depend on the Hans vignette including a strong emotional component (pain) and this is what the participants focused on. Moreover, participant feedback indicated that the vignettes were too long that they forgot the time aspect half way through reading the story, enabling the time condition. To establish that the results weren't artifact a supplementary experiment was conducted.

EXPERIMENT 2

Due to the inconsistent and unexpected variation of the results in experiment 1 a supplementary experiment was necessitated. The experimental errors found in experiment 1 were corrected and this present experiment investigated the same hypothesis as for experiment 1; that cognitive empathy will increase with temporal distance and emotional

empathy will decrease with temporal distance, consistent with the ADTD . Experiment 2 had three goals. First according to the statistical analysis there was no difference between the two items measuring perspective taking ("imaging-self perspective" and "imaging-other perspective") therefore only one item was used to measure perspective taking in experiment 2. Also no difference was found between the two items measuring emotional empathy ("self emotion" and "other emotion"), therefore only one item for emotional empathy was used in experiment 2. This was to reduce the time spent on answering questions and increase participant focus. Second goal was to address possible vignette critique. One of the critiques of the vignette technique is that reading a vignette is clearly not the same as observing the scenario in the "real" world. To address this critique and ensure further ecological validity to the study a observation component was added. The participants were asked to imagine themselves present in the situation as an observer also enabling a more straightforward technique for imagination than in experiment 1. The final goal involved balancing out the cognitive and emotional information in the stories. Therefore new stories with the same amount of cognitive information as emotional information were formulated. Moreover the cognitive aspects of the new stories included goal relevant information, for example, a scenario involving a boy swimmer and after a unsuccessful swimming competition he wants to quit swimming. The thought of quitting is a goal relevant aspect of the situation and should therefore be classed a high-level construal. Whereas the emotion itself should be a low-level construal. By clearly dividing up this information, it is easier for the participants to focus on the goal relevant (cognitive) information or the emotional information. Coinciding with CLT and ADTD, increase in temporal distance is likely to decrease people's focus on concrete and immediate concerns (such as emotions) and emotional empathy. Also increasing their focus on abstract goals and outcomes (reasoning about the situation) and engagement in perspective taking. For the swimmer, his immediate concern is not winning the competition and that he is upset, whereas his abstract goal is actually quitting the swimming team. Concluding that the main goal of experiment 2 was to correct experimental flaws from experiment 1 and to further investigate empathy's potential susceptibility to the ADTD.

Method

Participants & Design

34 females and 26 males took part in this study (total: 60) and were recruited through two universities in the south of Sweden (M_{age} = 29.36, *SD* = 9.31). Participants were randomly assigned to their condition. None of the participants guessed the experiment hypotheses correctly, and therefore participant exclusions in the analysis was not required. The design of experiment 2 was identical to experiment 1.

Materials & Procedure

The participants were informed that the study involved empathy and empathic reactions and that they were to answer a questionnaire. A similar questionnaire as in experiment 1 was devised, with the same near and distant future conditions. Questionnaire 2 consisted of four new empathic evoking scenarios with clear goal relevant and goal irrelevant information.. An example of an empathy evoking vignette is demonstrated below (see appendix B for questionnaire 2).

"*It is next week and you are sitting at a bar. A young women that is sitting next to you happens to spill her drink and a man gets it over him. The women gets a proper telling off in front of everyone at the pub and says to her company that "Now I can no longer come here, everyone will recognize me because of this". The man continues to shout and after a while she is close to tears, sad and runs off".*

The questionnaire was devised so that there was emotional goal irrelevant information (e.g. that the woman is close to tears, sad and runs off) and cognitive goal relevant information (e.g. that the woman will not come back to this pub again). Three questions followed after the scenario, one question each relating to emotional respectively perspective taking (e.g. *"I was emotionally upset by the event"* and *" I tried to put myself in how the women/man reasoned")* and a bipolar scale question (see appendix B for questionnaire 2). To improve the time manipulation, this questionnaire included an additional sentence reminding the participants that the scenario took place either next week or in 10 years. The procedure was identical to experiment 1

Results & Discussion

In order to examined each vignette separately an independent t-test was used for the analysis.

Table 4. Means (Standard deviations) on empathy questions

Empathy Questions	Vignette: Flight		Vignette: Swimming		Vignette: Bar		Vignette: Vaccination	
	Near	Distant	Near	Distant	Near	Distant	Near	Distant
Emotional Empathy	4.26(1.83)	4.16(1.68)	5.76 (1.07)	4.40(1.52)	1.68(4.83)	4.43(1.94)	3.50 (1.90)	3.03(1.84)
Perspective taking	4.41(1.59)	4.41(1.68)	4.00 (2.08)	4.19(1.81)	3.79(1.67)	3.93(1.65)	4.82(1.64)	4.06(2.11)
Bipolar scale item	4.26(1.87)	4.16(1.68)	5.76 (1.07)	5.40(1.52)	4.83(1.68)	4.433(1.94)	3.50(1.90)	3.03(1.87)

Consistent with our hypothesis, experiencing an emotional reaction (emotional empathy) when reading the vignettes was greater in the near future condition than in the distant future condition for all vignettes. All means in the near future were greater than in the distant future condition (See Table 4 for display of all means). These differences were non significant for flight $t(58) = .1.12$, $p > .05$; swimming $t(58) = .3.41$, $p > .05$, bar; $t(58) = .91$, $p > .05$ and for vaccination $t(58) = .31$, $p > .05$. Also consistent with the hypothesis the means for engaging in perspective taking were greater in the distant future condition than in the near future condition for all vignettes except for the vaccination vignette, which had the opposite effect (see Table 4). All these differences were however non significant flight $t(58) = .00$, $p > .05$; swimming $t(58) = 1.40$, $p > .05$, bar; $t(58) = .19$, $p > .05$ and vaccination $t(58) = 3.12$, $p > .05$. Lastly the bipolar scale question was analyzed. Consistent with our hypothesis the results indicate that all the means were greater in the distant future condition than in the near future condition. However the vaccination vignette demonstrated opposite effects (see Table 4). None of these differences were significant; flight $t(58) = 2.73$, $p > .05$; swimming $t(58) = .04$, $p > .05$, bar; $t(58) = .81$, $p > .05$ and vaccination $t(58) = 2.33$, $p > .05$

By giving the participants both emotional information and cognitive information in the vignettes, participants could choose which information to engage in. The hypothesis here was that participants that were in the near future condition would concentrate on more concrete and emotional information, hence experience more emotional empathy then engaged in perspective taking. Whereas the participants in the distant future condition would concentrate on the cognitive goal relevant information and engage more in perspective taking then experience emotional empathy. The results demonstrate a non significant tendency to this hypothesis. The results are more in favor of ADTD compared to experiment 1 results. All but the vaccination vignette gave means in the desired direction. The vaccination vignette was different to the other vignettes, because it involved extreme emotions such as anxiety and pain, and this could demonstrate why emotional reactions were stronger in the future than in the present, this information could have blurred out the time condition. Experiment's 2 main goal was to correct experiment's 1 experimental flaws. The was done in a satisfying manner and desired tendencies in empathic responses were observed. What is more, providing emotions and thoughts in terms of goal relevancy was clearly beneficial for desired results therefore in the next experiment these aspects are investigated further.

EXPERIMENT 3

Besides testing the current study's main hypothesis that perspective taking will increase with temporal distance and emotional empathy will decrease, new construal level-determining were added to experiment 3. As Liberman & Trope (2007) point out, affects can be both high-level and low-level and therefore can be either augmented or discounted over time. Therefore in experiment 3 it was crucial to ensure that the emotions stated in the vignettes were either low-level or high-level construal and not both. One way to do this is through peripheral and central aspects of the scenarios in the vignettes. For example, one emotion is relevant to the main scenario (central) and another one is irrelevant (peripheral) to the main scenario. ADTD states that affects are discounted over temporal distance whereas cognitions are augmented over temporal distance. However Liberman & Trope (2000, study 5) found that when emotions are goal relevant they too are augmented over temporal distance, because they retain high-level construals. The goal of Experiment 3 is to investigate how goal relevancy for emotions will effect cognitive and emotional empathy in the near and distant future. Two hypotheses were formulated.**Hypothesis 1 (H1);** The affect-dependent time discounting

hypothesis predicts that temporal distance will decrease the weight of experiencing emotional empathy for peripheral emotions relative to engaging in perspective taking[3] for central emotions. **Hypothesis 2 (H2);** For central emotions, temporal distance will increase the weight of experiencing emotional empathy for central emotions relative to engaging in perspective taking for peripheral emotions. (See Table 5 for further clarifications)

Table 5. Explanations of the hypotheses in relation to how relevancy of emotions will be effected by temporal distance.

H1: In favor of the affective dependent time discounting effect	Emotional empathy and irrelevant emotion	Cognitive empathy and relevant emotion
	Decrease with time	Increase with time
H2: Against the affective dependent time discounting effect	Emotional empathy and relevant emotion	Cognitive empathy and irrelevant emotion
	Increase with time	Decrease with time

Method

Participants and design

66 females and 55 males took part in this study (total: 122) and were recruited through two major towns in the south of Sweden (M_{age} = 28.8, *SD* = 6.13). Participants were randomly assigned to their condition. None of the participants guessed the experiment hypotheses correctly, and therefore participant exclusions in the analysis wasn't required. Experiment 3 was a repeated measures design, with a 2 (time) x 2 (context: context A vs. context B) as between subjects factors and 2 (empathy: emotional and perspective taking) x 2 (goal relevance: central and peripheral emotions) as within subject factors.

[3] Note that the items in the questionnaires that involve perspective taking do not directly include information about the specific emotions. These items are linked to how the target experiences the entire situation, which indirectly includes specific and relevant emotions.

Materials and procedure

Four questionnaires were distributed, each consisting of three short empathy evoking vignettes similar to those in the prior experiments. Two questionnaires were future condition and two were near future condition (as in Experiment 1 & 2). One questionnaire from each time condition included the same three vignettes, each of these vignettes included one relevant (central) and one irrelevant (peripheral) emotion to the scenarios described (context A). The other two remaining questionnaires (also one from each time condition) were mirror vignettes of context A. For example the relevant emotion in that questionnaire was turned irrelevant, and the irrelevant emotion was turned relevant (Context B). See below for examples of a vignette for Context A and its mirror vignette for Context B (see appendix C & D for questionnaire 3).

Context A. "Erika is at the swimming pool with her mother to take part in a swimming championship for children. She has trained hard and long time for this competition and is hoping to come in first place. Despite the hard training she comes in last place in the competition. Erika is angry and disappointed at herself because she didn't perform better. Through the window of the swimming hall she sees a dog and gets reminded of her own dog that is sick. This makes her feel sad and worried."

Context B ."Erika and her mother are at the veterinarian with her dog Max that has been acting strange lately. The veterinarian states that Max is very ill. It is tough on Erika because the dog is her best friend, she is sad and worried. She asked many questions in how one can cure Max's illness. Through the window she sees a commercial picture of a swimmer and she gets reminded of how badly her last swimming championship went. She becomes angry and disappointed at herself."

After reading each scenario the participants was asked to answer four questions regarding the scenario. These were following; (1). *"I was touched that Erika was sad and worried about her dog"* (2). *"I was touched that Erika is angry and disappointed over her swimming results".* Depending on the context both of these questions investigated central or peripheral emotions and what degree participants experienced emotional empathy towards each emotion and situation present. (3). *"I tried to put myself in Erika's swimming situation"* and (4). *"I tried to put myself in Erika's dog situation".* Depending on the context both of these questions investigated central or peripheral emotions and what degree the participants engaged in perspective taking towards each target situation and their accompanied emotion. The

responses were measured on a Likert-scale from 1 *(Strongly agree)* to 7 *(strongly disagree).* To check the awareness of the time manipulation participants were asked when the supposed scenarios took place. As to the previous two experiments the participants were informed that the study involved empathy and empathic reactions and that it was anonymous. Half the participants were instructed to imagine that the stories took place next week or in year 2020 (ten years from now). After each story they were then instructed to answer four questions relating to empathy. They were then briefed and thanked for their participation.

Results and discussion

In order to examine experiment 3 hypotheses a repeated measures ANOVA was conducted for each vignette. The two contexts acted as controls to check whether the two stories and their respective emotion in each vignette had the same valence, therefore a separate repeated measures ANOVA was conducted.

Vignette Erika. Box's test of equality was significant ($p < 0.05$) and indicates that there was a slight inequality of homogeneity among variances, however the sample sizes are equal and according to Field (2005) alteration of the data was not required. There was a strong significant main effect for empathy for the vignette Erika $F(1, 120) = 11.75$, $p < .001$. Indicating a difference between participant response on items regarding emotional and perspective taking. Noting that the means indicated that the significant difference between emotional empathy and perspective taking meant that participants engaged in perspective taking (PP) more than experienced emotional empathy (EE); PP;$M = 4.45$, $SD = .13$ & EE; $M = 4.00$, $SD = .12$. Also a strong significant main effect between emotion relevance for the vignette Erika was found, $F(1, 120) = 27.92$, $p < .001$. Means indicate that participants reacted more empathically to the central emotions ($M = 4.77$, $SD = .13$) than to peripheral emotions ($M = 3.68$, $SD = .14$). The interaction plots reveal that there is a linear relationship for empathy, where participants have engaged in perspective taking and experienced emotional empathy for central emotions than peripheral emotions, regardless of temporal distance (time condition). No other significant effects were found $p > .05$, indicating that for Erika time did not have an significant effect on either empathy or goal relevance. However, means indicate a non significant tendency that emotional empathy (Near Future(NF); $M = 3.66$, $SD = 1.75$ & Distant Future (DF); $M = 3.23$, $SD = 1.72$) and perspective taking (NF; $M = 4.08$, $SD = 1.86$ & DF; $M = 3.76$, $SD = 2.12$) for peripheral emotions are greater in the near

future condition than for the distant future condition. Indicating an empathic tendency for peripheral emotions in the near future partially consistent with H1 and H2.

It is worth mentioning that when the between-subjects variable Context was included a main interaction between Emotion relevance and Context was found $F(1, 118) = 25.33$, $p < .05$. The means for central emotion in Context B ($M = 5.03$, SE = 0. 18) were much higher whereas for peripheral emotion in Context B ($M = 3.14$, SE = 0.19). This indicates that participants have empathically reacted more to the story about the dog than the swimming results. Despite this unbalance in the contextual vignettes, there still remained a strong significant main effect for both empathy $F(1, 118) = 11.66$, $p < .001$ and for emotion relevance $F(1, 118) = 44.77$, $p < .001$. This indicates that context inequalities don't influence the credibility of the abovementioned results.

Vignette Anna: For the vignette Anna there was a strong significant main effect for emotion relevance $F(1, 120) = 57.67$, $p < .001$. A similar linear relationship to vignette Erika was found for emotion relevance, where participants engaged in perspective taking and experienced emotional empathy when the emotion was central ($M = 5.36$, $SD = .12$) the vignette than when the emotion was peripheral ($M = 4.16$, $SD = .14$) regardless of the time condition. No other significant main effects were found, indicating that for vignette Anna time did not have a significant effect on empathy or emotion relevance. However, as for vignette Erika means indicate a non significant tendency that emotional empathy (NF; $M = 4.48$, $SD = 1.86$ & DF; $M = 3.85$, $SD = 1.64$) and perspective taking (NF; $M = 4.29$, $SD = 1.86$ & DF; $M = 4.05$, $SD = 1.79$) for peripheral emotions are greater in the near future condition than for the distant future condition.

Noting that when the between-subjects variable Context was included a three way interaction effect was found for Empathy x Emotion relevance x Context $F(1, 118) = 56.79$, $p < .05$. The means indicate that participants experienced empathy (regardless of type) more for central emotions (EE; $M = 5.05$, $SE = .20$ & PP; $M = 5.35$, $SE = .20$) than for peripheral emotions (EE; $M = 4.10$, $SE = .20$ & PP; $M = 3.96$, $SE = .23$) in Context A. For Context B the means also indicate that participants experienced empathy (regardless of type) more for central emotions (EE; $M = 5.65$, $SE = .20$ & PP; $M = 5.39$, $SE = .19$) than for peripheral emotions (EE; $M = 4.23$, $SE = .22$ & PP; $M = 4,37$, $SE = .23$) in Context B. Despite this interaction there still remained a strong significant main effect for emotion relevance $F(1, 118) = 56.79$, $p < .001$

Vignette Tommy: For the vignette Tommy there was a significant main effect for empathy $F(1, 120) = 7.55$, $p < .01$ and means indicate that participants engaged more in perspective (M =4.36, SD = 13) taking than experience emotional empathy ($M = 4.06$, $SD = .12$). Also a strong significant main effect was for emotion relevance $F(1, 120) = 28.22$, $p < .001$. Similar to the results from the previous vignettes, the means indicate that participants reacted more empathically to central emotions ($M = 4.71$, $SD = .14$) than to peripheral emotions ($M = 3.71$, $SD = .15$). New to this vignette, a desired significant interaction effect was found between time and empathy $F(1, 120) = 6.01$, $p < .05$. Means reveal a difference between emotional empathy and perspective taking in the distant future, where participants engaged more perspective taking ($M = 4.27$, $SD = .19$) than experienced emotional empathy ($M = 3.70$, $SD = .17$). This was found regardless of emotion relevance, partially consistent with the ADTD. However, the means indicate that there was no difference between perspective taking ($M = 4.46$, $SD = .18$) and emotional empathy ($M =4.42$, $SD = .17$) in the near future, inconsistent with the ADTD, see the interaction graph (see Figure 1). Also, no significant interaction effect was found for emotion relevancy x empathy x time.

***Figure 1**:* Means for emotional empathy and perspective taking in distant future condition.

However, as for vignettes Erika and Anna means indicate a non significant tendency that emotional empathy (NF; M = 3.79, SD = 1.83 & DF; M =3.33, SD = 1.81) and perspective taking (NF; M = 4.00, SD = 1.94 & DF; M =3.75, SD = 2.03) for peripheral emotions are greater in the near future condition than for the distant future condition. Indicating empathic tendencies towards peripheral emotions in the near future which is partially consistent with H1 and H2.

It is also worth noting that there was a significant main effect for Emotion relevance and Context $F(1, 118) = 6.85$, $p < .05$. The means for central emotion in Context B (M = 5.02, SE = .22) were slightly higher than in context A for central emotions (M = 4.40, SE = .20). Indicating that participants reacted more empathically for when Tommy's bike got stolen than when he didn't get the role in his school's musical. A three way interaction effect was also found for Emotion relevance x Empathy x Context $F(1, 118) = 8.88$, $p < .05$, The means indicate that perspective taking in Context B for central emotions was the highest (M = 5.37, SE = .22) and the lowest mean was for emotional empathy in Context B for peripheral emotions (M = 3.46, SE = .23), indicating that participants had a hard time experiencing emotional empathy for Tommy not getting a role in the schools musical (peripheral emotion in Context B). This is partially consistent with hypothesis 2 because it was expected that central emotions should be linked to perspective taking. Despite interference from the Contexts the original main effects remained significant, empathy $F(1, 118) = 7.40$, $p < .05$, for emotion relevance $F(1, 118) = 29.64$, $p < .05$ and for the interaction effect between time and empathy $F(1, 118) = 6.09$, $p < .05$.

For vignettes Erika and Tommy, participants engaged significantly more in perspective taking than experienced emotional empathy. The affect-dependent time discounting hypothesis predicts that more perspective taking should take place than emotional empathy in the distant future, but no significant difference in empathy in relation to time was established for vignette Erika or Anna. However further detailed analysis revealed a desired main effect for the vignette Tommy, participants engaged in more perspective taking in the distant future than experienced emotional empathy. However a desired opposite effect was not established, participants did not experience emotional empathy more than perspective taking in the near future, confirming only half of the study's main hypothesis. All three vignettes revealed that participants reacted significantly more empathically for central emotions than for peripheral

emotions. This is partially consistent with H1 and H2, which predicted that participants would react more to central emotions than to peripheral emotions but more so in the distant future condition. The means for all vignettes indicated a tendency for empathic reactions for that peripheral emotions to decrease with temporal distance. All empathic responses for peripheral emotions were greater in the near future than in the distant future, partially consistent with H1 and H2. However as peripheral emotions decrease it was expected that means for central emotions would increase with temporal distance and this effect was not established.

Although a context dependency was revealed, the significant main effects for empathy, emotional relevancy and empathy and time interaction remained stable, concluding that which context the participants received was irrelevant for the results.

General Discussion

Although previous research has investigated psychological distance's influence on empathic reactions, the relationship between temporal distance and empathy has not been examined. Therefore the present study's main aim was to investigate the construct empathy in relation to CLT and ADTD by Liberman & Trope (2000). The study's two main hypotheses were; firstly, that cognitive empathy (perspective taking) retains high-level construals and is therefore more prominent in the distant future, and emotional empathy retains more low-level construals and is more prominent in the near future. Secondly, when two target emotions are presented, where one is relevant to the situation and the other emotion is irrelevant, emotional empathy towards the relevant emotion retains high-level construals and therefore is equally prominent in the distant future as perspective taking for the same relevant emotions, against ADTD. To test these hypotheses, three experiments were conducted, participants were to either imagine empathic evoking scenarios to take place in the future or in the present and then they were requested to report the degree which they experienced emotional empathy and engaged in perspective taking. A short summary of the results are demonstrated below.

Experiment 1 revealed no differences between experiencing the same emotions as the target person and experiencing some kind of emotion towards the target person. Identical results were found for perspective taking and Batson's et al., (1997) distinction between imagining oneself in their position or imagining how they experience the situation. Overall there was a non significant tendency to be more emotionally empathic and use perspective taking in the distant future compared to the near future. This is partially consistent with

ADTD. What's more, merely one significant effect was found in experiment 1, participants responded experiencing the same emotion as the target Hans in the Hans vignette significantly more in the future condition than in the near condition. More optimistic and desired results were established for experiment 2, participants demonstrated non significant tendencies to experience more emotional empathy in the near future than in the distant future. Also consistent with experiment 1 and as expected participants demonstrated non significant tendencies to engage in more perspective taking in the distant future than in the near future. This is fully consistent with ADTD. Noting that vignette Vaccination showed opposite non significant tendencies. Moreover, the outcome in experiment 2 points to that when people imagine distant future scenarios they concentrate on the cognitive information. Whereas people who imagine near future scenarios concentrate on the emotional information. Pointing to that temporal distance influences the focus of attention.

For experiment 3 the hypothesis was altered in accordance with the occurrence of goal relevant information presented with the target emotions in the vignettes. Liberman & Trope (2000) suggested that ADTD should be disregarded when emotions involve goal relevant information, because goal relevant aspects make them high level and the weight of their value increases with temporal distance. Expecting that both types of empathy towards the target emotions classed as central to the scenarios (goal relevant) to increase with temporal distance. Experiment 3 demonstrated that participants overall engaged in significantly more perspective taking than emotional empathy. For the vignette Tommy, participants engaged in more perspective taking in the distant future than experienced emotional empathy, along the lines of ADTD. An overall significant participant empathic engagement in central emotions compared to peripheral emotions was exhibited and a non significant empathy tendency for peripheral emotions decreased with temporal distance, which is consistent with Liberman & Trope (2000). Summary of the influence of temporal distance on perspective taking and emotional empathy in relation to past research is clarified below.

Perspective taking

Consistent throughout all three experiments, perspective taking was more prominent in the distant future conditions than in the near future, partially confirming the current main hypothesis. This provided support for the link between perspective taking and psychological distance, which is consistent with past research on physical distance and empathy, where psychologically distant empathic events evoke perspective taking (e.g. Mano et al, 2010).

Also a consistency was found with people who score high on perspective taking scales use extensive reasoning when provided with empathic evoking scenarios together with physical distance information, similar to our results (Mencl & May, 2008). Moreover the current results are consistent with past research stating that perspective taking is linked to abstract thought when thinking about socially distant others (Liviatan et al., 2008 & Levy et al, 2002). Concluding from the construal level theory and temporal distance, further support is provided for linking perspective taking with abstract thinking. Reminding that CLT proposes that the larger the psychological distance is from the event, the higher levels of construals are used to represent that event. Hence, the temporally distant events were represented in high-level construals and therefore participants engaged in more cognitive empathy than experienced the "cognitively undemanding" emotional empathy. Noting it is not only the event that makes the person engage in high-level thought but it is also the actual response to event itself that be high-level which is necessitated by the psychological distance condition. This is a complex relationship were many variables can influence which level of construal entities are mentally represented in.

The affect dependent discounting effectpredicts that perspective taking should always be prominent in the distant future. However experiment 3 hypothesis proposes that perspective taking for peripheral emotions should be more prominent in the near future. Perspective taking tendencies for peripheral emotions in the near future were established as predicted. Participants were asked to assess the degree of their engagement in perspective taking for the irrelevant (peripheral) emotion to the target's main situation. The relevancy of the emotion becomes the critical deciding factor for the level of construal and not just the cognitive empathic response. This confirms that the degree of perspective taking will not only depend on temporal distance but also on relevancy of what the person is perspective taking in, for example the emotion and the situation of the target. Furthermore, confirming similar results found in Liberman & Trope (2000) and providing further support that peripheral information when place with cognitive reasoning can retain low-level construals.

No differences were found between Batson's et al., (1997) distinctions of perspective taking, that is; imagining oneself in the targets position (imagine-self perspective) or imagining how they experience the situation (imagine-other perspective) in the near future or in the distant future. However, according to Pronin et al., (2008) engaging in perspective taking for self in the present should evoke different mental representations than engaging in

perspective taking for other in the present. Moreover engaging in perspective taking for self and others in the future should evoke similar mental representations. Recalling that Pronin (2008) and colleagues suggest that people view themselves as others (e.g. as strangers) in the future and therefore make similar decisions for them as for their future selves. Whereas people do not view themselves as others in the present, nor make similar decision for them. In this experiment participants that placed themselves in another person's situation in the future thought about their future selves. Making an interesting point of even though participants engaged in the same amount of perspective taking for imagine-self and imagine-other in the present, their thoughts of how they would feel (imagine-self perspective) versus how the other's would feel (imagine-other perspective) should be involve different thoughts in near future then and similar thoughts similar in the distant future.

Emotional empathy

Unlike the results for cognitive empathy, emotional empathy demonstrated less result-consistency throughout the experiments. Participants experienced an emotional empathic tendency more so in the distant future than in the near future in experiment 1. Experimental errors were corrected and a desired prominent emotional empathic tendency in the near future condition was exhibited, consistent with ADTD. Past research on emotional empathy's relation to psychological distance is limited and unfortunately inconclusive. What research on emotional empathy does put forward is that it is a somewhat automatic and intense empathic response towards a situation and therefore here conclusions are drawn that it retains low-level construals. This may still be the case, however the current non significant results can only point in the direction of emotional empathy retaining low-level construals then providing indisputable evidence for this case.

As predicted, emotional empathy tendencies were exhibited for peripheral emotions in the near future condition (for all vignettes in experiment 3). Consistent with the CLT and affect dependent time discounting effect irrelevant emotions should retain low-level construals, and therefore emotional empathic responses should decline with temporal distance. Also consistent with Liberman & Trope (2000, study 5) that preferences for films with affective and irrelevant value decreased with temporal distance. Whereas the opposite desired effect (H2) that emotional empathy for central emotions would increase with temporal distance was not exhibited and remained stable across the time conditions. These current results together

with abovementioned results mark an unconvincing case for emotional empathy's susceptibility for temporal distance.

Implementation and future research

Deducing from past research (Livitan et al., 2008 & Liberman & Trope, 2000) empathy for central emotions should be more prominent in the future because goal relevant information is retained, making emotions high-level. Despite this, empathy (cognitive and emotional) towards central emotions remained consistent over both time conditions. Also a significant difference was found between central emotions and peripheral emotions, where participants experienced more empathy towards the target's central emotions then the target's peripheral emotions. Two likely explanations for these results are brought forward. The most appropriate explanation for this is simply because more information was provided for the situation surrounding the central aspects of the events, compared to the information surrounding the peripheral aspects of the events. Hence, the participants reacted more emphatically for the central emotions simply because they were more vividly consumed. Secondly, the participants made an educated guess after reading the first scenario and wrongly assessed the study's hypothesis. Guessing that more emotional empathy and perspective taking should be felt for the central emotions than for peripheral emotions and responded accordingly on the remaining questionnaire. To prevent these types of complications, emotions can themselves be high-level or low-level, for example recalling back to that guilt and disappointment are proposed to retain high-level construals and basic emotions are low-level (Liberman et al, 2007) making them vulnerable to the temporal distance.

Validity of these measures can seem suspect, since it appears likely that a range of other factors may contribute to scores on these measures. For example, experiment 1 struggled with the balance of cognitive and emotional information in the vignettes. Also the type of empathic evoking contexts were imbalanced in experiment 3. People that are forced to direct their focus on information will generally focus on the more emotionally disturbing information. In the case of the vignette Hans (experiment 1) and vignette Erika (experiment 3) which both had strong pain components to them, peoples' focus lay on the more extreme scenarios, which could have potentially distorted or blurred out the time conditioning. Alternatively, requesting participants to imagine an event happening in 10 years time is cognitively more demanding than them imagining an event happening in a week's time. The participants therefore took the imagination of future condition more seriously and experienced significantly more emotion in

the Hans vignette in the distant future because they spent more capacity on imagining the scenario than in the near future scenario. This is also a likely explanation as to why all the participants empathic reactions were greater in the distant future than for the near future for experiment 1.

It is worth pointing out that investigating empathy in relation to the affect- time discounting hypothesis is additionally difficult than investigating affects from a first person perspective. For example a first person's preference for affects and cognitions have been proven to be susceptible to ADTD. But once the person's emotions and thoughts "jump" a step, i.e. a second person has to evaluate someone else's emotions, then logically more demands on mental capacity are to take place. The person is not only experiencing their own emotion/reaction but also someone else's emotions. Therefore empathy should always involve high-level processing or construals, and hence it may seem more difficult to find a significant effect between affect dependent time discounting hypothesis and emotional empathy. This criticism may seem devastating towards the main hypothesis, however, as mentioned before emotional empathy is defined as a direct and non reflective mechanism and therefore it takes a similar amount of mental capacity as any emotion experienced by the self. Therefore empathy should be as susceptible to ADTD as any other first person emotion or cognition. Moreover, no ceiling or floor effects were present, indicating that cognitive and emotional empathy are experienced at similar rates. Bringing us to our next issue when investigating empathy in relation to psychological distance, which is the influence of social distance.

This study included a social distance component due to the participants had no relation with the target person in the empathy evoking scenarios. In these three experiments, participants read about people that were what past research classes as socially distant to them (they were strangers). Perspective taking is something people engage in when thinking about socially distant people. The critic towards this study then lies in that people should overall engage more in perspective taking than experience emotional empathy because the targets were socially distant from them regardless of temporal distance. However, implementations of social distance in the present study can be defended through two points. Firstly, that people did experience emotional empathy towards these people and not only engage in perspective taking and secondly, no floor and ceiling effects originated. Past research has touched upon the parallel between temporal distance and social distance (e.g. Levy et al., 2002) and has established that social distance and temporal distance have similar influential status on

decision making. The present outcome points to that when temporal distance and social distance are examined together in relation to empathy, temporal distance will dominate and influence the type of empathy experienced. Similar to when goal relevant information is put together with affect, it is the goal relevant information that decides its level of construal and not the affect.

The participant responses on the vignettes were analyzed individually. This was carried out to enable possible differences among each scenario. Due to the novelty of these scenarios, it was crucial to investigate if certain emotions provoked undesirable empathic responses. As a result of this method of analysis, pain was found to evoke strong emotional empathic reactions. Also, context analysis in experiment 3 could expose that a child's sick dog and losing a professional swimming contest for children was incomparable. That is, the valence of the scenarios were imbalanced. These inequalities are very important to discover when making use of a vignette method, variance among the participant responses should depend on the time manipulation and not the information provided in the vignettes. In favor of this technique lies a detailed analysis. In opposition to this technique, significant results are difficult to obtain and also analysing the vignettes collectively in each experiment may expose more robust results. Suggesting that for future research, reliable and valid scenarios can be analysed collectively for more robust results.

With this empirical investigation, we have only begun to unravel the relationship between psychological distance and empathy. The complexity of the empathy construct and the many variables that influence the level of construal on emotions make this relationship difficult to investigate, let alone obtain desired results. Despite this implementation, some very interesting results were exhibited. Throughout the three experiments perspective taking was found to be associated with temporally distant empathic evoking events more than emotional empathy. Unfortunately not as strong evidence was found for emotional empathy to be influenced by temporal distance in the desired opposite way. However, emotional empathy doesn't necessarily have to be perspective takings antipole and just because perspective taking increases, emotional empathy doesn't have to decrease in a likewise opposite manner. Concluding that cognitive empathy is augmented over temporal distance. As for ADTD, the current investigation has provided support that affect is not the only component that will decide the level of construal, but also the relevancy of that affect in relation to empathy. Therefore effect of temporal distance on affect at least in relation to emotional empathy isn't

as clear as the affect dependent time discounting hypothesis claims. Furthermore, this investigation provides support that people can experience emotional empathy and engage in perspective taking for narrative hypothetical scenarios using a vignette method. More research on empathy and temporal distance is needed to untangle its complex relationship, but this current study has provided some very crucial building blocks for the cognitive empathy-temporal distance dimension.

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Appendix A: Experiment 1, Questionnaire 1 near future condition

Tack för att du deltar i min studie som handlar om människans empatiska upplevelser i olika sammanhang. Studien består av tre korta berättelser som var och en följs av tre frågor. Att delta i studien är helt frivilligt och dina svar kommer att hanteras anonymt.

Instruktioner

Nedan kommer du att få läsa tre berättelser **som du ska föreställa dig inträffar i nästa vecka** och det är viktigt att du försöker **sätta dig in i situationerna** så ingående som möjligt. Varje berättelse följs av tre frågor som du ska besvara så uppriktigt du kan.

Föreställ dig att följande inträffar nästa vecka:

Andrea har alltid drömt om att bli en skicklig gitarrist och att spela sin musik för andra är hennes största passion. Andrea är med i ett band som har fått allt fler spelningar och hennes dröm börjar gå i uppfyllelse. Plötsligt drabbas Andrea av en obotlig tinnitus och tvingas därför sluta i bandet. Andrea är ledsen och deprimerad över händelsen.

Skatta följande påståenden så uppriktigt du kan:

1. Jag blev berörd av att läsa att Andrea är ledsen och deprimerad

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

2. Jag kände en viss ledsamhet när jag läste om Andrea

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

3. Jag försökte sätta mig in i Andreas situation genom att ta hennes perspektiv

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

4. Jag försökte sätta mig in i Andreas situation genom att tänka hur jag själv hade känt

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

5. Jag upplevde framförallt en emotionell reaktion när läste om Andrea — *Jag tänkte mig framförallt in i hur Andrea upplevde situationen*

1 2 3 4 5 6 7

<u>Föreställ dig att följande inträffar nästa vecka:</u>

Patrik har arbetat på den lokala ICA-butiken i tio år när han blir felaktigt anklagad för att ta pengar ur kassan. När chefen kontrollräknar Patriks kassa saknas det 5000 kronor . I själva verket är det chefens sommararbetande dotter som tar pengarna under Patriks lunchpaus. Då det har förekommit ett flertal stölder tidigare har ledningen bestämt att man ska vidta kraftfulla åtgärder nästa gång det inträffar. Patrik får sparken och får svårt att hitta ett nytt jobb då han inte heller kan räkna med någon referens från sin tidigare arbetsgivare. Patrik tänker att han har blivit orättvist behandlad och känner sig väldigt frustrerad och arg.

Skatta följande påståenden så uppriktigt du kan:

1. Jag blev berörd av att läsa att Patrik är arg

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

2. Jag kände en viss ilska när jag läste om Patrik

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

3. Jag försökte sätta mig in i Patrik situation genom att ta hans perspektiv

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

4. Jag försökte sätta mig in i Patrik situation genom att tänka hur jag själv hade känt

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

5. Jag upplevde framförallt en emotionell reaktion när läste om Patrik — *Jag tänkte mig framförallt in i hur Patrik upplevde situationen*

1 2 3 4 5 6 7

<u>Föreställ dig att följande inträffar nästa vecka:</u>

Börje jobbar på en kemikaliefabrik. Varje dag arbetar Börje med flytande syra, han är väldigt försiktig och följer säkerhetsföreskrifterna noggrant. Börje får en släng av vinterkräksjukan och när han återvänder till jobbet upptäcker han att någon har använt sig av hans arbetskläder. Därför kollar han noggrant att det inte finns några hål i dem. När han häller frätande syra från en behållare till en annan så känner han sig yr och tappar behållaren över ena benet. Han känner en brännande smärta i benet och upptäcker att det faktiskt fanns ett hål i byxorna som syran kommit åt. Han ger ifrån sig ett vrål av en genomträngande och pulserande smärta.

Skatta följande påståenden så uppriktigt du kan:

1. Jag blev berörd av att läsa att Börje känner smärta/ har ont

Stämmer inte alls	1	2	3	4	5	6	7	Stämmer mycket väl

2. Jag kände en viss smärta när jag läste om Börje

Stämmer inte alls	1	2	3	4	5	6	7	Stämmer mycket väl

3. Jag försökte sätta mig in i Börjes situation genom att ta hans perspektiv

Stämmer inte alls	1	2	3	4	5	6	7	Stämmer mycket väl

4. Jag försökte sätta mig in i Börjes situation genom att tänka hur jag själv hade känt

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

5. Jag upplevde framförallt en emotionell reaktion när läste om Börje

Jag tänkte mig framförallt in i hur Börje upplevde situationen

1 2 3 4 5 6 7

Enligt instruktionerna skulle du föreställa dig att berättelserna utspelar i en specifik tid. När utspelar sig berättelserna? _____

Jag är: Man ❑ Kvinna ❑

Ålder: _____

Vad tror du att denna undersökning handlar om?

_____

_____

Tack för att ni medverkade i min studien

Appendix B**: Experiment 2, Questionnaire 2 distant future condition**

Tack för att du deltar i min studie som handlar om empatiska upplevelser i olika situationer. Du ska få läsa om fyra korta händelser som var och en följs av tre frågor. Att delta i studien är helt frivilligt och dina svar kommer att hanteras anonymt.

Studien beräknas ta ca 5 minuter. Det är viktigt att du lever dig in i de händelser som beskrivs och att du svarar spontant på de efterföljande frågorna.

Instruktioner

Följande händelser utspelar sig i framtiden. Försök tänka dig in i berättelserna utifrån när de utspelar sig och hur du skulle reagera. Föreställ dig att **året är 2020, alltså om 10år.**

A. Året är 2020 och du står i incheckningskön på Kastrups flygplats. Framför dig står en frustrerad äldre kvinna som just har fått reda på att hennes flyg är inställt. Flygbolaget bokar om henne på nästa flyg. När hon får reda på att hon måste betala själv blir hon röd i ansiktet, höjer rösten och blir väldigt arg. Hon tycker att det är felaktigt av flygbolaget att ha den policyn och bestämmer sig för att bojkotta bolaget.

Tänk på att händelsen utspelar sig år 2020 och skatta följande påståenden så uppriktigt du kan:

1. Jag blev emotionellt berörd av händelsen

Stämmer inte alls	1	2	3	4	5	6	7	Stämmer mycket väl

2. Jag försökte sätta mig in i hur kvinnan resonerade

Stämmer inte alls	1	2	3	4	5	6	7	Stämmer mycket väl

3. Jag blev framförallt emotionellt berörd — *Jag försökte framförallt tänka mig i in hur hon tänkte*

1	2	3	4	5	6	7

B. Året är 2020 och du är i simhallen och tittar på en lokal simtävling för pojkar. En tränare kritiserar en av pojkarna för att han misslyckandes i tävlingen. På en kompis fråga berättar pojken att han gjorde sitt bästa, men om det fortsätter att gå såhär dåligt och tränaren förblir missnöjd så slutar han med simningen. Han ser väldigt ledsen ut och börjar gråta.

Tänk på att händelsen utspelar sig år 2020 och skatta följande påståenden så uppriktigt du kan:

1. Jag blev emotionellt berörd av händelsen

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

2. Jag försökte sätta mig in i hur pojken resonerade

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

3. Jag blev framförallt emotionellt berörd *Jag försökte framförallt tänka mig in i hur han tänkte*

1 2 3 4 5 6 7

C. Året är 2020 och du sitter på en bar. En ung kvinna som sitter bredvid dig råkar spilla sin drink så att en man får den på sig. Kvinnan får en rejäl utskällning inför alla på puben och säger till sitt sällskap ”Nu kan jag inte gå hit längre, alla kommer att känna igen mig på grund av detta”. Mannen fortsätter skälla och efter en stund blir hon gråtfärdig, ledsen och springer därifrån.

Tänk på att händelsen utspelar sig år 2020 och skatta följande påståenden så uppriktigt du kan:

1. Jag blev emotionellt berörd av händelsen

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

2. Jag försökte sätta mig in i hur kvinnan resonerade

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

3. Jag blev framförallt emotionellt berörd *Jag försökte framförallt tänka mig in i hur hon tänkte*

1 2 3 4 5 6 7

D. Året är 2020 och du väntar på att bli vaccinerad. Mannen som sitter bredvid dig ska också vaccineras och berättar att han har nålfobi och känner en extrem ångest inför att ta sprutan. Han resonerar kring om vaccinationen är värd de jobbiga känslorna. Han kommer fram till att hans Kinaresa för att volontärarbeta är viktigare än några sekunders smärta från en spruta. Trots detta resonemang är han skakig, svettig och har fortfarande ångest.

Tänk på att händelsen utspelar sig år 2020 och skatta följande påståenden så uppriktigt du kan:

1. Jag blev emotionellt berörd av händelsen

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

2. Jag försökte sätta mig in i hur mannen resonerade

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

3. Jag blev framförallt emotionellt berörd *Jag försökte framförallt tänka mig in i hur han tänkte*

1 2 3 4 5 6 7

Enligt instruktionerna skulle du föreställa dig att händelsen utspelar i en specifik tid. När utspelar sig händelserna? _____

Jag är: Man ❑ Kvinna ❑

Ålder: _____

Vad tror du att denna undersökning handlar om?

_____

_____

_____

Tack för att du medverkade i min studie!

Appendix C: Experiment 3, Questionnaire 3, context A and distant future condition

Tack för att du deltar i min studie som handlar om empatiska upplevelser i olika situationer. Du ska få läsa om tre korta händelser som var och en följs av fyra frågor. Att delta i studien är helt frivilligt och dina svar kommer att hanteras anonymt.

Studien beräknas ta ca 5 minuter. Det är viktigt att du lever dig in i de händelser som beskrivs och att du svarar spontant på de efterföljande frågorna.

Instruktioner

Följande händelser utspelar sig i framtiden. Försök tänka dig in i berättelserna utifrån när de utspelar sig och hur du skulle reagera. Föreställ dig att **året är 2020, alltså om 10år.**

Året är 2020 och Erika är i simhallen tillsammans med sin mamma för att delta i en elitsimtävling för barn. Hon har tränat hårt och länge inför tävlingen och hoppas på en förstaplats. Trots den hårda träningen kommer hon sist i tävlingen. Erika är arg och besviken på sig själv för att hon inte presterade bättre. Genom simhallens fönster ser hon en hund och blir påmind om sin egen som är sjuk. Detta gör att hon känner sig ledsen och orolig.

Tänk på att händelsen utspelar sig år 2020 och skatta följande påståenden så uppriktigt du kan:

1. Jag blev berörd av att Erika är ledsen och orolig för sin hund

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

2. Jag blev berörd av att Erika är arg och besviken över sitt simtävlingsresultat

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

3. Jag försökte sätta mig in i Erikas simsituation

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

4. Jag försökte sätta mig in i Erikas hundsituation

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

Året är 2020 och Anna har just kommit hem från sin semester. När hon kommer till dörren ser hon att den är uppbruten och att hon haft inbrott. Inbrottstjuvarna verkar ha gått igenom hela huset efter värdesaker. Mycket har blivit förstört och flera av hennes ägodelar är försvunna. Hon känner sig förbannad och kränkt. En av de poliser som undersöker brottsplatsen liknar hennes pappa. Pappan har svikit henne under uppväxten, och hon känner sig ledsen och sårad.

Tänk på att händelsen utspelar sig år 2020 och skatta följande påståenden så uppriktigt du kan:

1. Jag blev berörd av att Anna känner sig förbannad och kränk av inbrottet

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

2. Jag blev berörd av att Anna känner sig ledsen och sårad över papparelationen

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

3. Jag försökte sätta mig in i Annas pappasituation

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

4. Jag försökte sätta mig in i Annas inbrottssituation

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

Året är 2020 och Tommy går in på skolans teater för att få besked om han får en roll i skolans musikal. Tommy är duktig på att sjunga och hoppas på att få huvudrollen. Han får reda på att han inte är vald till någon roll överhuvudtaget. Han blir besviken och ledsen. Bland rekvisitan på scenen står en cykel och Tommy blir påmind om att hans egen cykel blivit stulen, vilket gör honom arg och förbannad.

Tänk på att händelsen utspelar sig år 2020 och skatta följande påståenden så uppriktigt du kan:

1. Jag blev berörd av att Tommy är arg och förbannad över sin stulna cykel

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

2. Jag blev berörd av att Tommy är besviken och ledsen för att han inte fick en roll

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

3. Jag försökte sätta mig in i Tommys musikalsituation

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

4. Jag försökte sätta mig in i Tommys cykelsituation

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

Appendix D: Experiment 3, Questionnaire 3, context B and distant future condition

Tack för att du deltar i min studie som handlar om empatiska upplevelser i olika situationer. Du ska få läsa om tre korta händelser som var och en följs av fyra frågor. Att delta i studien är helt frivilligt och dina svar kommer att hanteras anonymt.

Studien beräknas ta ca 5 minuter. Det är viktigt att du lever dig in i de händelser som beskrivs och att du svarar spontant på de efterföljande frågorna.

Instruktioner

Följande händelser utspelar sig i framtiden. Försök tänka dig in i berättelserna utifrån när de utspelar sig och hur du skulle reagera. Föreställ dig att **året är 2020, alltså om 10år.**

Året är 2020 och Erika och hennes mamma är hos veterinären med sin hund Max som har betett sig annorlunda på sistone. Veterinären berättar att Max är svårt sjuk. Erika tycker att det är jobbigt då hunden är hennes bästa vän, hon är ledsen och orolig. Hon ställer många frågor om hur man kan bota Max sjukdom. Genom fönstret ser hon en reklambild på en simmare och hon blir påmind om hur dåligt det gick för henne på elitsimtävlingen senast. Hon blir arg och besviken på sig själv.

Tänk på att händelsen utspelar sig år 2020 och skatta följande påståenden så uppriktigt du kan:

1. Jag blev berörd av att Erika är ledsen och orolig för sin hund

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

2. Jag blev berörd av att Erika är arg och besviken över sitt simtävlingsresultat

Stämmer inte alls	1	2	3	4	5	6	7	Stämmer mycket väl

3. Jag försökte sätta mig in i Erikas simsituation

Stämmer inte alls	1	2	3	4	5	6	7	Stämmer mycket väl

4. Jag försökte sätta mig in i Erikas hundsituation

Stämmer inte alls	1	2	3	4	5	6	7	Stämmer mycket väl

Året är 2020 och Anna kommer hem till sin pappa som hon inte har träffat på väldigt länge. Hon har en hetsig diskussion med honom angående hur han har svikit och negligerat henne och hennes syskon. Hon har vid upprepade tillfällen försökt förbättra kontakten men det har inte hjälpt. Hon är ledsen och sårad. När hon vrider om nyckeln i ytterdörren blir hon påmind om inbrottet i hennes hem och känner sig förbannad och kränkt över detta.

Tänk på att händelsen utspelar sig år 2020 och skatta följande påståenden så uppriktigt du kan:

1. Jag blev berörd av att Anna känner sig förbannad och kränk för inbrottet

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

2. Jag blev berörd av att Anna känner sig ledsen och sårad över papparelationen

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

3. Jag försökte sätta mig in i Annas pappasituation

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

4. Jag försökte sätta mig in i Annas inbrottssituation

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

Året är 2020 och Tommy har fått en cykel i födelsedagspresent. Han har alltid fått ärva sin storasysters cyklar och därför är det extra speciellt att få en helt ny cykel. När han ställer ifrån sig cykeln för att prata med en kompis kommer det en man och stjäl den. Tommy blir arg och förbannad. Han hör någon sjunga och blir påmind om att han inte fick en roll i skolans musikal. Han känner sig besviken och ledsen över detta.

Tänk på att händelsen utspelar sig år 2020 och skatta följande påståenden så uppriktigt du kan:

1. Jag blev berörd av att Tommy är arg och förbannad över sin stulna cykel

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

2. Jag blev berörd av att Tommy är besviken och ledsen för att han inte fick en roll

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

3. Jag försökte sätta mig in i Tommys musikalsituation

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl

4. Jag försökte sätta mig in i Tommys cykelsituation

Stämmer inte alls 1 2 3 4 5 6 7 Stämmer mycket väl