

Infrahumanization and Mental Travel: Effects of Temporal Orientation on Perceived Humanness

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According to the self-centric future hypothesis, mental simulations of future events, future-oriented mental time-travel may incorporate mental representations of the self. This experiment tests the self-centric future hypothesis in the context of infrahumanization. Mental simulations with current self-knowledge are constructed when people think of the future, which may influence the level of humanness they would attribute to strangers. It was predicted that participants in a future-oriented mindset, given their self-centric mental representation of the future, would be less likely than participants in a past-oriented mindset to infrahumanize strangers. There was not a significant direct effect of temporal focus on perceived humanness found. Effects of temporal focus on level of rated humanness were moderated by valence of emotional experiences attributed to others, such that the hypothesis was supported for negatively valenced emotional experiences only. Perceived humanness ratings were significantly higher in the future-oriented than in the past-oriented condition for negatively valenced indicators.

Keywords: dehumanization, infrahumanization, self-centered-future, intergroup, construal

Selon l'hypothèse autocentrique de l'avenir, les simulations mentales des événements futurs, les voyages temporels mentaux axés sur l'avenir peuvent incorporer des représentations mentales du soi. Cette expérience teste l'hypothèse autocentrée de l'avenir dans le contexte de l'infra humanisation. Des simulations mentales basée sur la connaissance de soi actuelle sont construites quand les gens pensent à l'avenir, ce qui peut influencer sur le niveau d'humanité qu'ils attribueraient aux étrangers. Il a été prédit que les participants ayant une mentalité orientée vers l'avenir seraient moins susceptibles que les participants axés sur le passé à infra humaniser les étrangers. Il n'y a pas eu d'effet direct important de la focalisation temporelle sur l'humanité perçue. Les effets de la focalisation temporelle sur le niveau de perception de l'humanité ont été modérés par la valence des expériences émotionnelles attribuées aux autres, de sorte que l'hypothèse était soutenue uniquement pour les expériences émotionnelles de valence négative. Les scores d'humanité perçue étaient significativement plus élevés dans la condition d'état d'esprit axé sur l'avenir que dans la condition axée sur le passé, pour les indicateurs de valence négatives.

Mots-clés : déshumanisation, infra-humanisation, futur centré sur soi, intergroupe, interprétation

Instances of people denying humanness to others are ubiquitous. For example, a person denying a homeless man spare change in the city streets may be the result of feelings of disgust and dehumanization (Harris & Fiske, 2006).

Dehumanization was originally addressed in the context of mass violence, particularly in the context of genocidal conflicts referred to as “sanctioned massacres” (Kelman, 1973). Kelman (1973) describes the violence facilitated by dehumanization as an act that “lacks the conditions normally perceived as providing some degree of moral justification for violence” (p. 25). Specifically, dehumanization is described as the victimizer denying identity and community to the victim. Identity refers to one's

distinct individuality and community refers to his or her belonging to a network of individuals (Kelman, 1973).

A denial of humanness, may be seen as a harsh punishment, or as a facilitator of mass violence and intergroup conflict. Though the phenomena of dehumanization has been studied extensively throughout history, it has not thoroughly been looked at through the lens of temporal construal. If infrahumanization is a function of time, we may gain insight into how to manipulate dehumanization and infrahumanization by altering the temporal context in which we envision other people.

For example, it may be the case that a person would dehumanize another person more or less as a result of thinking of that person in the context of the past compared to the future. Shedding light on the processes that cause dehumanization may lead to measures and practices that will help to mitigate such unjustified actions.

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Infrahumanization, is a lesser form of dehumanization (Leyens et al., 2000). This concept is not attributed to mass violence, but to subtler, perhaps more implicit discriminatory behavior (Pereira, Vala, & Leyens, 2009). This type of behavior is more common in an era when legal segregation and discrimination are progressively becoming things of the past, and subtler, unconscious discriminatory practices are replacing them.

In order to examine the effect of time on infrahumanization, we first propose to define and operationalize the two variables: infrahumanization, and temporal construal. Second, we look at the relationship between these two variables through an experimental study.

Subtle Denial of Humanness: Infrahumanization

Dehumanization is an extreme phenomenon (Haslam & Loughnan, 2014). It enables and facilitates violence, therefore, as aforementioned, most of the research done on dehumanization is centered around mass violence. This project studies infrahumanization which is subtler form of dehumanization.

Although infrahumanization by definition does not directly cause violence in the same magnitude the more powerful phenomenon of dehumanization does, mass violence and infrahumanization are related. Indeed, infrahumanization is a process linked to ingroup preference and assists in the rationalization of mass killings. Infrahumanization has been linked to discrimination and symbolic threat (Pereira et al., 2009). Symbolic threat refers to “perceived group differences in morals, values, standards, beliefs, and attitudes” (Oskamp, 2000, p.42). Discrimination refers to the preferential treatment of one’s ingroup (Brewer, 1999). A reduction in infrahumanization may pragmatically result in a reduction in discrimination. This, as essentially a reduction of attitudes of inequality, can lead to more egalitarian standards within society at large.

Leyens and colleagues (2000) found three different measures for humanness by asking several samples of Latin-language (Spanish and Canarian Spanish) speaking students. Intelligence, language, and sentiments (or refined emotions) were the most common answers. Specifically, what Leyens and colleagues argue is that what distinguishes humans from non-humans is the capacity of humans to have emotions, which require a level of reflection and thought that non-humans do not have. Therefore, Leyens and colleagues describe two types of emotions: primary and secondary.

Primary emotions are more basic emotions; they appear earlier in age, are of shorter duration, and are

more frequent (Ekman, 1992). Six commonly cited primary emotions are named: anger, surprise, fear, joy, sadness, and disgust (Leyens et al., 2001). Non-human animals have the ability to feel these primary emotions. One may be inclined to agree that a dog could feel fear; most dog owners with a vacuum cleaners can vouch for this. A dog could be perceived to express happiness when it is being fed or when its tail is wagging. Primary emotions are also present early in human life. An infant can show fear in a visual cliff paradigm (Walk & Gibson, 1961).

Secondary emotions are peculiar to humans. Non-human animals do not have secondary emotions. Secondary emotions are more complex; they are described as the emotional response resulting from different social interactions (Kemper, 1987). Secondary emotions involve a level of reflection and thought that primary emotions do not incorporate. A secondary emotion involves a layer of consideration and reflection that is specific to humans. Admiration, fondness, contempt and conceit are examples of secondary emotions (Leyens et al., 2001). Leyens and colleagues found that ingroup members were being ascribed more secondary emotions, while outgroup members were not. This extended from the idea that outgroups are subtly denied humanness (therefore, they are infrahumanized) and the denial of secondary emotions is dependent on infrahumanization. This same measure, primary vs. secondary emotions, has also been used to examine sexism, which is a form of infrahumanization (Viki & Abrams, 2002).

Although much research has focused on mass violence when studying infrahumanization, little research has looked at the cognitive processes that explain why some people infrahumanize. Understanding the different cognitive processes that lead some to consider others as less human could result in concrete interventions that could help people alleviate those thoughts.

We propose that infrahumanization involves construal. Construals are the result of how one would perceive and interpret the world around him- or herself. Therefore, how individuals construct the world around them will lead to higher or lower levels of infrahumanization.

Construal Level Theory

According to Construal Level Theory (Trope & Liberman, 2003) individuals can construct the world around them through high or low level construals. High level construals are more abstract, simple, structured, coherent, decontextualized, and goal-relevant. Comparatively, low level construals are more concrete, complex, unstructured, contextualized, and less goal-relevant. Therefore, low level construals are

richer in detail, while high level construals are more parsimonious.

An example to elucidate this difference can be illustrated by a driver being overtaken or cut-off by another driver during his morning commute. A high level construal would contain a simpler decontextualized explanation (e.g., the person that cut me off is a bad driver) rather than a complex contextualized one (e.g., there may be a reason he cut me off or he might be rushing to the hospital). The higher level of construal would also be goal-relevant (e.g., the driver cut me off to ruin my day) compared to a lower level goal irrelevant explanation (e.g., there was no personal reason he cut me off; it simply happened).

Besides the level of construal (high or low), other aspects can influence our cognition, such as time. Temporal construal adapts construal level theory to the realm of time. Time becomes one dimension of psychological distance. Research has found that perceptions of the distant future are more abstract compared to the near future (Lieberman, Sagristano, & Trope, 2002). Greater temporal distance yields more abstract, higher level construals, a perceived essence of events rather than concrete, and incidental details are remembered when there is more distance between the person and the perception that is being construed (Trope, & Liberman, 2003).

Temporal construals have an effect on how individuals make decisions and perceive choices. For example, temporal distance between a person and a goal influences how valuable the reward may be. A reward perceived in the more distal future may have more value, like the value of having houseguests (Trope & Liberman, 2003).

Construals may play a role in the underpinning of infrahumanization since it has been proposed that egocentrism and perceiving the world more abstractly (i.e., higher level construal) may promote infrahumanization (Haslam & Bain, 2007). Psychological distance positively correlates with decontextualization and abstraction: two pillars of high level construal. People who are more psychologically or temporally distant to the perceiver are more likely to be perceived with abstract traits rather than specific behaviors or beliefs. People are perceived in simple and impoverished ways when there is more psychological distance between them and the perceiver (Trope & Liberman, 2003). This is to say that the more social distance there is between an individual and a person that the individual is thinking about, the more basic are the behaviors that are ascribed to that person.

Though the effect of level of distance on infrahumanization has been explored, and reviewed above, temporal direction (past vs. future) has not been as thoroughly investigated. If a person thinks of another in the past, compared to thinking of the other in the future, which representation of the other would better resist infrahumanization? Future-oriented mental time travel (prospection) may be functionally different from past-oriented time travel (Freitas, Clark, Sweeney, & Culcea, 2017). It is also important in behavior and decision making in a way that past-oriented time-travel is not (Seligman, Railton, Baumeister, & Sripada, 2013) as explained in the below discussion of the self-centric future hypothesis.

The self-centric future hypothesis is defined as the culmination of a general tendency to relate mental simulations of future events to one's self-knowledge by repeated experiences of using elements of one's self-concept to construct future-oriented mental simulations (Freitas et al., 2017). In other words, a person must go through prospection with the help of his or her current self-concept. He or she must input him- or herself into the future in order to make a prediction of what may happen. On the other hand, past-oriented mental simulations do not require a construction of a future-self to coordinate present capabilities with future goals in the way that prospection may.

In a series of five experiments, Freitas and colleagues' (2017) self-centric future hypothesis identified that future-oriented mental simulations were more likely to draw on self-referential information relative to past- or present-oriented mental simulations. One would need to construct a future self and anticipate his or hers needs and goals when prospecting (Freitas et al., 2017; Simon, 1995; Suddendorf & Corbalis, 1997). Using the self to construct mental simulations of others may warrant a representation of another person that is similar to oneself. Since the future simulation and not the past simulation calls for one to draw on self-referential information to create a representation of the other, one may hypothesize that there is reduction in psychological distance between the construer and the one being construed. This may well fit in to Construal Level Theory. The psychological distance between the self and the other is reduced because facets of the self are used to create a future-representation of the other. This reduction in distance would reduce the level of construal. In essence, if a person thinks of someone else in the future, it will be a less construed thought than thinking of someone in the past. A reduction of the level a person construes another one should increase the level of humanness attributed to them.

The self-centric future hypothesis is a new idea proposed by Freitas and colleagues (2017). It details that thinking about the future or prospection may entail a more egocentric way of thinking. This specific type of thinking may be explored in the realm of infrahumanization by specifically measuring how thinking of others in the future context may contribute to attributing more humanness to them by reducing psychological distance between the two.

Current Research

This experiment hopes to quantify the level of humanness attributed to two temporally distinct conditions: the past and the future. In conjunction with the self-centric future hypothesis, thinking about another person in the mental context of the future should result in attributing more humanness to the other person. This is a result of creating a simulation of oneself when prospecting. Our main hypothesis predicts that individuals will attribute more humanness (higher secondary emotions than primary emotions) when they focus on the future compared to when they focus on the equidistant past.

Method

Participants

One hundred twenty undergraduate psychology students from Stony Brook University participated in this study (female participants, $n = 61$, $M_{\text{age}} = 20.83$; male participants, $n = 59$, $M_{\text{age}} = 20.58$). They received credit via Stony Brook University's Psychology Department Experiment Management System (SONA) in return. Data were collected over the summer and fall semester. Participants who did not select English as their primary language were omitted from the statistical analysis.

Procedure

Participants were grouped by random assignment into either the future condition or past condition upon arrival to the lab. Participants were given instructions on the first screen. For the future condition ($n = 61$), participants read: "*On the following screens, we will show you photos of different people. For each person, try to construct an image of how you think this person will feel in the future.*" For the past condition ($n = 59$), participants read: "*On the following screens we will show you photos of different people. For each person,*

try to construct an image of how you think this person has felt in the past." Participants were then showed one of eight photos, each portraying an individual. These photos were drawn from the neutral images of the NimStim stimulus set. Under each image, participants were asked whether the individual in the photo had experienced (in the past condition) or will experience (in the future condition) one of twelve emotions (six positive and six negative emotions; see Materials section below). For instance, a participant in the future condition was shown the picture of a white female with a question below the picture asking "*In the future this person will experience pleasure...*"; the participant then answered how often this emotion was experienced by the person in the picture. Each picture was presented twelve times as there was a total of twelve emotions (six positive and six negative emotions), and only one emotion was presented per photo viewing. The pictures and emotions were presented in a random order.

Materials

The emotion questions asked for every photo were adapted from a questionnaire used in a previous study (Viki & Abrams, 2003). This questionnaire asks how often individuals experience twelve emotions (see Table 1 for the complete list) using a 5-point Likert scale ranging from 1 (*extremely rarely*) to 5 (*extremely often*). Three of the emotions are positive secondary emotions, three are negative secondary emotions, three are positive primary emotions and three are negative primary emotions. The distinction between primary and secondary emotions was derived from an earlier study (Leyens et al., 2001). As mentioned in the introduction, primary emotions indicate a lower level of humanness compared to the secondary emotions, which imply within them a unique human layer of reflection.

Results

Main Analysis

A 2 x 2 (Past condition versus Future condition * Primary emotions versus Secondary emotions) mixed analysis of variance (ANOVA) was conducted to see whether participants in the future condition would attribute more secondary emotions (both positive and negative emotions) to individuals than primary emotions (showing lower infrahumanization),

Table 1

Emotions Used in the Present Study

Positive Primary	Positive Secondary	Negative Primary	Negative Secondary
Pleasure	Compassion	Fear	Melancholy
Surprise	Hopefulness	Aversion	Guilt
Happiness	Nostalgia	Anger	Resignation

Note. Adapted from Viki and Abrams (2002). Secondary emotions indicate a level of reflection unique to humans.

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compared to participants in the past condition. This original hypothesis was not supported; the interaction between condition (future versus past conditions) and level of emotion (primary versus secondary emotions) was not statistically significant ($F(1, 118) = 0.86, p = .35$). These results indicate that asking participants to concentrate on how the other would feel in the future did not lead participants to lower their inhumanization (higher frequency of secondary emotions than primary emotions) compared to the participants who focused on the past. The main effect of condition was also non-significant ($F(1,118) = 2.11, p = .149$; M future condition = 3.03; M past condition = 2.97), which means that the condition did not affect frequency of reported emotions. However, the effect of type of emotion was significant ($F(1, 118) = 6.97, p = .009$; M primary emotions = 2.90; M secondary emotions = 3.09), indicating that participants reported in general more secondary emotions (and humanness) than primary emotions.

Interaction of Valence and Temporal Condition

Supplementary analyses were done in order to further understand the present data. Considering that positive and negative emotions are different from each other, it is possible for the conditions and level of emotions to have different roles for positive versus negative emotions. The results presented below examine whether perceiving someone in the past or in the future influenced the participants' interaction with the valence of emotions (Positive or Negative) and

the level of emotions (Primary or Secondary). Results of a mixed 2 x 2 (Past versus Future condition * Primary versus Secondary emotions) X 2 (Positive versus Negative emotions) ANOVA show that there was a significant interaction effect, Wilk's $\Lambda = 0.95, F(1, 118) = 5.72, p = .018$). These results indicate that perceiving someone in either the past or future affects the valence of the emotions and the emotions that the participants will feel towards the person in the photo.

To further understand this triple interaction, further analyses were done to test the effects of the conditions (Past versus Future) and the level of emotion (Primary versus Secondary) for each of the valence in the emotions. In other words, two additional 2 x 2 (Past versus Future * Primary versus Secondary emotions) ANOVAs were executed, one for positive emotions and another for negative emotions. Results for the positive emotions ANOVA show that the conditions did not affect differently the way that people felt about their primary and secondary emotions $F(1, 118) = 0.69, p = .041$; Wilk's $\Lambda = 0.99$, partial $\eta^2 = .006$ (see Table 2 for means and standard deviations). That is, individuals in both past and future conditions reported similar frequency of primary positive emotions and secondary positive emotions. However, for the ANOVA examining the effects of the conditions on the negative primary and negative secondary emotions, a significant effect was found Wilk's $\Lambda = 0.96, F(1, 118) = 4.72, p = .032$ (See Table 3 for means and standard deviations). This significant interaction indicates that thinking about the

Table 2
Means and Standard Deviations of the Positively Valenced Emotions Across Each Condition

Condition	Positive primary emotions		Positive secondary emotions		Total (primary and secondary)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Past	2.79	0.42	2.96	0.38	2.88	0.40
Future	2.88	0.39	3.01	0.32	2.96	0.36
Total	2.84	0.41	2.98	0.35	2.91	0.38

Note. $N = 120$.

Table 3
Means and Standard Deviations of the Negatively Valenced Emotions Across Each Condition

Condition	Negative primary emotions		Negative secondary emotions		Total (primary and secondary)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Past	3.10	0.42	3.01	0.39	3.06	0.41
Future	3.11	0.32	3.13	0.29	3.12	0.31
Total	2.11	0.37	3.07	0.35	3.09	0.36

Note. $N = 120$.

past versus the future impacted the frequency at which negative primary and secondary emotions were reported. These results, however, do not detail if the difference between past and future is due to the primary negative emotions or to secondary negative emotions.

To see whether the conditions affected the negative primary emotions or the negative secondary emotions, two *t*-tests were conducted. The first *t*-test examined whether there was a difference in secondary negative emotions between the conditions. Results indicate a significant difference between conditions for the secondary negative emotions $t(1,118) = -1.98$, $p = .005$. An examination of Table 3 show that participants in the future condition reported higher frequency of negative secondary emotions than participants in the past condition. The second *t*-test examined whether there was a difference in primary negative emotions between conditions. This *t*-test was not significant, $t(1,118) = -.072$, $p = 0.094$.

Overall, results show that the participants who were asked to describe the emotions of individuals in terms of the future attributed more negative secondary emotions (i.e., melancholy, guilt and resignation) than the participants that were in the past condition. The same pattern was not found for positive secondary emotions (i.e., compassion, hopefulness and nostalgia).

Discussion

The present research investigated the relationship between temporal construal and dehumanization, by studying how infrahumanization, a subtle common form of dehumanization, is influenced by the variables of temporal orientation. Though it is a concept comprised of many behaviors and phenomena, in this experiment it was operationalized as the denial of the attribution of uniquely human emotions (i.e., secondary emotions) (Leyens et al., 2000). This experiment was also inspired by the self-centric future hypothesis (Freitas et al., 2017) which states that during prospection, one creates a mental simulation of him- or herself and coordinates present capabilities with future aims, in order to complete tasks and reach goals. This hypothesis implicates that this cognitive mechanism unique to prospection may culminate in a tendency for one to relate future events to self-knowledge. This link between one's self concept and prospection was examined in this experiment.

The a priori hypothesis of this experiment — that there will be an effect of temporal orientation on infrahumanization — was not shown to be significant in the data analysis. In the confines of this experiment, future-oriented thinking compared to past oriented thinking does not have a general humanizing effect.

However, though there was no general effect, the hypothesis was confirmed when only the ratings of the negative emotions were considered for analysis. Negative secondary emotions were shown to be significantly higher in the future condition than in the past condition. This leads us to believe that there may be a special quality in the negative secondary emotions that facilitates participants to attribute a higher level of humanness to portraits in the future condition. Melancholy and resignation are emotions that may be viewed in tandem with a subdued person. A person feeling melancholy, guilt, or resignation would likely be calmer than a person feeling compassion, hopefulness, or nostalgia.

This raises the idea of appraising these emotions in the context of perceived interpersonal implications. Dealing with another person in the emotional state of melancholy, guilt, or nostalgia may not elicit evolution-based protective reactions. In several previous studies, perceived threat has been linked with dehumanization (e.g., Goldenberg et al., 2009; Maoz & McCauley, 2008; Viki et al., 2006; Vaes et al., 2010; Vaes & Muratore, 2013). These negative secondary emotions and the subdued quality that may be attributed to them could make these emotions more difficult to link with violence. In terms of interpersonal threat, it may be difficult to consider someone feeling resignation, for example, to be dangerous. These emotions could be compared to the ones used in the negative primary list (i.e., fear, anger, aversion). These emotions, especially fear and anger, may have neural correlates similar to those of threat (Pichon, de Gelder, & Grezes, 2009). Threat may have moderated and augmented the difference between the past and present conditions of these primary and secondary negative emotions.

Our results imply that there is no general difference between the effect future- and past-oriented thinking has on infrahumanization. However, there is a small effect only on the negative attribution of humanizing emotion. This can warrant further investigation on the difference between negative and positive humanizing attributes (i.e., the secondary emotions used in this experiment). A direction of interest would be to conduct a study that considers a much larger number of secondary negative versus primary negative emotions in the context of infrahumanization. In fact, a limitation of this study is that only three examples of each type of emotion were used. Examining a much larger number of each type of emotion may show different effects and control for variables such as the before-mentioned threat.

Other limitations of this study may include that the faces used were photographs of real people. This may have produced uncontrolled effects from participants'

perceptions of the faces (e.g., attractiveness, hostility and threat). Perhaps a further direction for this study would include using composite faces to rule out the possibility of any confounding factors found within differences between portraits other than race and gender.

Because participants were recruited through convenience sampling, they were all Stony Brook University undergraduate students. Perhaps a further direction of this study would be to gather participants from a vast and diverse population. Quota sampling could be employed in future studies to ensure that races are represented proportionally to the population. This may make the results more generalizable. Only two races were evaluated in this study (Black and White). In a future study, other races should also be evaluated, in order to have information that is generalizable to the population.

This study found that there is a significant difference in attributing humanness to others as a function of temporal orientation, only when emotions are negatively valenced. The finding shows a nuance in the cognitive underpinning of dehumanization. The main hypothesis of this experiment was predicated on the idea that thinking towards the future causes one to merge his or her self-construct with an anticipated goal or action (Freitas et al., 2017). This small effect found in negative emotions may be the right direction to understanding the cognitive underpinnings of dehumanization.

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