Not All 'Intouchables': Variations in Humanness Perceptions between Physical and Mental Disability

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RESEARCH ARTICLE

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ABSTRACT

People with disabilities remain discriminated against, especially those living with mental disabilities compared to those living with physical disabilities, which might be rooted in a dehumanization process. Because there is evidence pointing to a tendency to dehumanize people with mental disabilities, the aim of this research (N = 559) was to demonstrate the differences in humanness attributions to people with mental and physical disabilities. The results showed that people with mental disabilities are perceived as being less human than people with physical disabilities, whether it be on blatant or subtle measures of dehumanization. More specifically, whereas dehumanization was clearly evidenced for people with mental disabilities, there was no evidence found concerning the dehumanization of people with physical disabilities. The latter were even attributed more humanness-related characteristics than people without physical disabilities. Therefore, contrasted humanness attributions between people labeled as having mental or physical disabilities should be taken into consideration if the image of people with disabilities is to change.

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INTRODUCTION

'It is better that the disabled disappear': this is the explanation given to the police by a man who murdered 19 people and injured 26 others living in a home for disabled people on the outskirts of Tokyo on July 26, 2016 (Adams, 2016). Interestingly, besides being Japan's deadliest mass killing since World War II, this tragic event was hardly broadcast at all. One reason for this and, more generally, for the discrimination to which people with disabilities are still exposed today (Dammeyer & Chapman, 2018; Temple et al., 2018) could be that they are not perceived as being fully human (i.e., they are dehumanized) (for a review, see Haslam & Loughnan, 2014). Indeed, research has evidenced a dehumanization process of people living with mental disabilities (e.g., Parker, Monteith & South, 2020). Yet this assumption remains to be confirmed for people with physical disabilities. Because a general preference has been found between these two types of disability in favor of people with physical disabilities (Rohmer & Louvet, 2011), this article seeks to determine 1) whether attributions of humanity also differ between people with mental disabilities and physical disabilities and 2) whether people with physical disabilities are actually dehumanized.

DEHUMANIZATION

Recently, a growing interest has emerged among researchers to better understand how people might view others as being less than fully human (for recent reviews, see Haslam & Loughnan, 2014; Haslam & Stratemeyer, 2016). What seems at first glance to be an obvious categorization error is actually a pervasive phenomenon (see Haslam, 2006). Far from simply explaining extreme antisocial situations, dehumanization also follows a subtler path (Leyens et al., 2007). This broadening of the concept has been made possible thanks to Leyens and his colleagues (2000), who introduced the term 'infrahumanization' to emphasize the relative denial of humanness that occurs in intergroup relations. Their consideration of humanness focused on the attribution of emotional experience through the attribution of uniquely human emotions in favor of the ingroup compared to various outgroups. In other words, infrahumanization occurs when people attribute more secondary emotions (e.g., nostalgia)—perceived as being not shared with other species—to the ingroup than to the outgroup (Leyens et al., 2001). Such differential attribution between ingroup and outgroup(s) does not occur in the case of primary emotions (e.g., sadness)—perceived as being shared with other species.

This approach was further extended by Haslam and colleagues' proposition (2005) to consider this form of humanness denial through the denial of uniquely human (UH) attributes, such as secondary emotions or broad-mindedness (i.e., references to refinement and civility), and, additionally, the denial of the attributes related to human nature (HN), such as helpfulness or curiosity (i.e., references to a general emotionality). The privation of UH attributes would lead to an animalistic dehumanization, in which targeted dehumanized individuals are compared with animals (e.g., Gypsies, Haitians); whereas, the privation of HN attributes would generate mechanistic dehumanization, leading to a comparison with machines or objects (e.g., Germans, Japanese) (Andrighetto et al., 2014; Loughnan & Haslam, 2007). The willingness to reserve such attributes, whether it be UH or HN characteristics, to the ingroup can be conceptualized as a subtle form of dehumanization.

Other indirect measures have been developed, such as the denial of universal human rights, which measures the exclusion of a target group from the moral community (Albarello & Rubini, 2012), or more blatant measures, such as the denial of the evolution of a group of people (the 'Ascent of Man') (Kteily et al., 2015).

These works are in line with those conducted by Fiske and colleagues (2002) on the stereotype content model (SCM) (for an overview, see Fiske, 2015). They have shown that social judgments occur based on two fundamental dimensions: warmth and competence (see also Cuddy et al., 2007). Although not strictly speaking a model of dehumanization, the SCM is closely related to the process of dehumanization. Indeed, the groups perceived as both incompetent and cold are most often dehumanized (e.g., drug addicts) (Harris & Fiske, 2006; Vaes & Paladino, 2010).

The type of humanness denied (i.e., human uniqueness, human nature) and its subtlety versus blatancy are two of the three main dimensions on which humanness denial occurs (Haslam, 2014). The last considers the relativeness versus absoluteness of dehumanization. On the one hand, dehumanization can occur in intergroup comparisons (e.g., attributions to Anglo-Australian and ethnic Chinese people) (Bain et al., 2009) in such a way that one group is perceived as being more or less human than another group. On the other hand, one group may also be perceived as lacking humanness in an absolute sense (e.g., patients in medical settings) (Haque & Waytz, 2012).

DEHUMANIZATION OF PEOPLE WITH DISABILITIES

Several impairments are grouped under the term 'disability'. For instance, the French Law recognizes the physical, sensory, cognitive, mental, psychical, 'polyhandicap', and disabling diseases as being the different types of disability (see Loi n°2005-102 du 11 février 2005, J.O. 12 février 2005). This is also true for US law, but with a focus on mental and physical impairments

(see 42 U.S. Code § 12102). This distinction is important because people with mental and physical disabilities do not seem to have experienced discrimination in the same way (Dammeyer & Chapman, 2018; Temple et al., 2018).

This distinction among disability types should also be made in the study of dehumanization affecting people with disabilities. Indeed, research evidenced the subtle dehumanization of people with developmental disability. In three studies, Capozza and her colleagues (2016) demonstrated that professional educators assign less UH attributes to individuals with cognitive disabilities (also called intellectual and developmental disabilities). In doing so, they replicated similar former results evidenced among lay people (Falvo et al., 2014). Parker and colleagues (2020) showed that this dehumanization process also affected people living with developmental disabilities, when presented through specific pathologies (i.e., Down syndrome, autism). They revealed that the subtle dehumanization process of the latter was related to prejudices and negative social policy attitudes toward them.

More generally, it would seem that people with mental disabilities are dehumanized (Boysen et al., 2020a; Boysen et al., 2020b; Martinez et al., 2011; Martinez, 2014). People subtly and blatantly dehumanize those suffering from a mental illness (Boysen, et al., 2020b, study 1). The extent to which people with mental illness are dehumanized varies depending on the kind of disorders, with people suffering from pedophilia being the most dehumanized, while those with depression or anxiety are dehumanized the least (Boysen et al., 2020b, study 2). Accordingly, studies focusing on specific pathologies have demonstrated the dehumanization of people with schizophrenia (Pavon & Vaes, 2017), autism (Cage et al., 2019), neurotic and psychotic diseases (Svoli et al., 2018), or an alcohol use disorder (Fontesse et al., 2019).

On the whole, although research has shown various degrees of subtle and blatant dehumanization of people with diverse mental-related disabilities, there is a lack of research regarding the dehumanization of people with physical disabilities. People with disabilities are perceived in an ambivalent fashion (i.e., they are perceived as warm but incompetent) (Fiske et al., 2002; Louvet et al., 2009). This is especially true for people with physical disabilities in comparison to people with mental disabilities, for whom warmth may be denied depending on the pathology (Sadler et al., 2012). Generally speaking, people feel more compassionate and express more help-giving tendencies toward physical stigmas than toward mental–behavioral stigmas (Weiner et al., 1988) and are less willing to interact with the latter (Cacciapaglia, Beauchamp & Howells, 2004). Because people with physical disabilities benefit from more positive stereotypes (e.g., bravery, warmth) in comparison to those with mental disabilities (see Rohmer & Louvet, 2011; Sadler et al., 2012), it seems plausible that these variations in social judgments would also be found in humanness attributions.

Accordingly, some studies have evidenced that people labelled 'mentally ill' are ascribed fewer UH traits when compared to people with a general physical illness (Martinez et al., 2011). Moreover, people with mental disabilities and people with physical disabilities differ in terms of threat perceptions: whereas the former are seen as dangerous and unpredictable, the latter are depicted as honest, gentlehearted, and helpless (Fichten & Amsel, 1986; Martinez et al., 2011). Yet, given the importance of threat in the relationship between dehumanization and discrimination, the difference between these two types of disability in terms of potential threat may have played a role in the gap of humanity ascriptions too (for reviews see Haslam & Loughnan, 2014; Vaes et al., 2012).

DEHUMANIZATION OF PEOPLE WITH PHYSICAL DISABILITIES?

Although it is expected that people with physical disabilities experience better treatment than people with mental disabilities, a general lack of interest in research hinders us from making a clear hypothesis about the dehumanization of people with physical disabilities. However, a dehumanization process of people with physical disabilities is not straightforward. Indeed, they benefit from much more positive social judgments compared to people with mental disabilities (Rohmer & Louvet, 2011). They are perceived as brave and willing to make efforts (Louvet & Rohmer, 2016). They even inspire admiration (Nario-Redmond et al., 2019).

Yet the groups perceived as lacking competence but not warmth are often perceived as lacking UH characteristics (e.g., elderly, artists) (Boudjemadi et al., 2017; Li et al., 2014; Loughnan & Haslam, 2007), although not consistently (Vaes & Paladino, 2010). Moreover, people labeled as 'disabled' are perceived as lacking UH traits, albeit to a lesser extent in comparison to people labeled 'mentally ill' or even 'retarded' (Bastian et al., 2011). Because the generic category 'disabled' generally overlaps with the subcategory 'physical disabilities', it is reasonable to assume that this lack in UH traits could also be true for people with physical disabilities (Rohmer & Louvet, 2011).

Mechanistic dehumanization should not be excluded in the case of people with physical disabilities. Indeed, in a qualitative study exploring the experiences of ableism among people with disabilities, Nario-Redmond and her colleagues (2019) revealed that dehumanization manifested itself through depersonalization when being referred to as 'a wheelchair', or through physical invasion when being pulled like a 'piece of luggage'. These experiences could find their roots in a lack of perception of HN traits.

OVERVIEW OF THE STUDY AND HYPOTHESES

The present research thus aimed at determining whether people with physical disabilities were actually dehumanized while 1) investigating whether the preference for people with physical disabilities over people with mental disabilities would also be found in humanness attributions on various scales and 2) exploring the humanness attributions to both people with physical disability and people with mental disabilities in comparison to people without such disabilities.

Considering the relative dehumanization of both disability types, we expected that people with mental disabilities would be attributed less positive social judgments than people with physical disabilities and that it should also be true for humanness-related ascriptions, especially UH traits, whether it be subtly or blatantly. We thus expected a main effect of the disability target group.

Considering the absolute dehumanization of each disability type, we first sought to determine whether people labeled as being 'with mental disabilities' were subject to social judgments akin to people labeled as being 'mentally ill'. We thus assumed that the former would endure negative social judgments—especially on the competence dimension—and animalistic dehumanization, whether it be subtly or blatantly (Boysen, et al., 2020b; Sadler et al., 2012). In parallel, we investigated the dehumanization of people with physical disabilities. We expected ambivalent social judgments, and we wished to explore humanness-related ascriptions, especially the subtle ones.

In order to explore how people without disability can express more or less indirect or blatant dehumanization, several complementary approaches of humanity attributions were considered in the protocol. We chose to combine different measures in order to precisely capture this dehumanization process. More specifically, we decided to use measures of SCM, measures of subtle and blatant dehumanization, with direct and indirect measures for the latter. As the ingroup is theoretically a humanness prototype (Leyens et al., 2001), we decided to measure humanness-related ascriptions to the ingroup as a baseline measure for the comparison with the outgroup with disabilities.

METHOD

PARTICIPANTS

All students beginning their final year of undergraduate studies in Psychology were asked to participate. As these students may at mid-term (three years after) accompany people with disabilities, their profile was considered of high interest for our purpose. A total of 559 participants were included in the study during three consecutive academic years (September 2016; September 2017; September 2018; see Table 1 for demographic details).[1]

		2017	2018	2019	TOTAL
Sample	All conditions	193	186	180	559
	Mental	95	78	92	265
	Physical	98	108	88	294
Age (years)	Mean	21.57	21.38	20.85	21.27
	SD	3.72	3.25	2.60	3.24
Female participant (%)		81	80	85	82
Removed data		4	7	18	33

Table 1 Participant's age, gender, removed data, and total sample size through the three years of the study.

Note: Were excluded from the data participants who reported having a disability and those who did not fill at least one entire measure.

This design allowed us both to attest to the stability of the effect and to have a large number of participants. Indeed, as no previous study investigated the dehumanization of physically disabled people, we had no idea of the effect size and therefore of the sample size required. A post hoc power analysis was conducted using the G*Power software package (Buchner et al., 2017). The sample size of 180 (minimum number of participants obtained per year) was used for the statistical power analysis. For a medium effect size ($f = 0.25$) and standard parameters of $\alpha = 0.05$, the post hoc power analysis indicated a power to detect the obtained effects $1 - ß = 0.91$, for a mixed ANOVA with repeated measure and within-between interactions.

MATERIAL AND PROCEDURE

Participants were invited to participate in a study that was presented as part of a program on 'Perceptions of Various Social Groups'. They were randomly assigned to one of two conditions of our unique between-subject factor: disability type. Thus, participants had to focus either on mental disability or on physical disability.

After providing written informed consent, participants received a set of paper-and-pencil questionnaires. For almost each measure described below, they were asked to complete the measures twice: first for 'people with mental (physical) disabilities', second for 'people without mental (physical) disability'. For the Alienability of Human Rights scale, participants evaluated only people with disabilities (following the procedure of Albarello & Rubini, 2012).

After the experimental session, participants were informed about the aims of the research and later about the results. Finally, they were all thanked for their participation.

Materials and data for this study are available on the Open Science Framework (https://osf.io/sdfwa/?view_only=fe49a128df7f41338f57eaf7865ebbfb).

MEASURES

First, in order to underpin variations in social judgment, the SCM framework was used. Second, in order to investigate subtle, indirect, and blatant dehumanization, complementary approaches of humanness attributions were employed to test our dehumanization asymmetry hypotheses. Indeed, considering that humanness attributions can be expressed through a wide range of modalities, we used a measure of infrahumanization, a second measure of subtle indirect dehumanization (Subtle Indirect Animalistic Dehumanization), two measures of blatant indirect dehumanization (Blatant Indirect Animalistic and Mechanistic Dehumanization measures, and the Alienability of Human Rights measure), and one measure of blatant direct dehumanization (Ascent of Man measure).[2] Except for the Infrahumanization and Ascent of Man measures, a 7-point scale was used ranging from 1 ('not at all') to 7 ('extremely').

Measure of Social Judgment

SCM. Competence and warmth were assessed by a measure of the traits (Fiske et al., 2002; Louvet et al., 2009), including six items reflecting competence (e.g., 'competent' and 'skillful'; $\alpha = 0.85$) and six items reflecting warmth (e.g., 'warm' and 'friendly'; $\alpha = 0.92$). Participants were asked to indicate whether each item was typical of people with(out) disabilities.

Measures of Subtle Dehumanization

Infrahumanization. Participants were asked to mark listed emotional words they believed to be typical of the above-mentioned groups of people (Tam et al., 2007). The list was composed of seven positive primary emotions (e.g., 'surprise' and 'calmness'; $\alpha = 0.83$), seven positive secondary emotions (e.g., 'optimism' and 'love'; $\alpha = 0.86$), seven negative primary emotions (e.g., 'pain' and 'fear'; $\alpha = 0.79$), and seven negative secondary emotions (e.g., 'humiliation' and 'shame'; $\alpha = 0.89$). Participants were instructed to select as many emotions as they liked but only those that they found relevant to describe people with(out) disabilities. To control for the number of emotions selected in general, proportion scores were computed by dividing the number of emotions selected by the total number of emotions selected to control for this parameter.

Subtle Indirect Animalistic Dehumanization. Four uniquely human traits (UH; e.g., 'reasoning', 'rationality'; $\alpha = 0.71$) and four non-uniquely human traits (non-UH; e.g., 'instinct', 'impulsive'; $\alpha = 0.61$) were proposed to participants (Capozza et al., 2013). They were asked to indicate whether each item was typical of people with(out) disabilities.

Measures of Blatant Dehumanization

Blatant Indirect Animalistic and Mechanistic Dehumanization. Four blatant-UH items (e.g., 'refined and cultured', 'lacking self-restraint, like animals' (reverse-coded); $\alpha = 0.77$) and four blatant human nature items (blatant-HN; e.g., 'mechanical and cold, like robots' (reverse-coded), or 'open-minded, able to think clearly about things'; $\alpha = 0.72$) were proposed (Kteily et al., 2015). Participants were asked to indicate how well the items properly described people with(out) disabilities.

Alienability of Human Rights. This indirect measure of dehumanization was assessed following the procedure developed by Albarello and Rubini (2012). It included 10 statements taken from the Universal Declaration of Human Rights. Participants were asked to rate the extent to which the rights expressed in each statement were inalienable to people with disabilities on a 7-point scale ($\alpha = 0.87$).

Ascent of Man. Blatant dehumanization was also measured using the Ascent of Man measure developed by Kteily and colleagues (2015). It consists in presenting the Ascent of Man diagram, under which continuous sliders were represented next to the label of the above-mentioned groups. Participants were asked to indicate the extent to which they considered the average member of people with(out) disabilities to be evolved by marking it on the continuum. The ratings were computed by measuring (centimeters) the distance from the left extremity of the slider to the cross marked by the participant. A proportion score was computed for people with(out) disabilities.

ANALYTICAL STRATEGY

Mixed model analyses of variance (ANOVAs), including the type of disability (mental vs. physical) as between-subject factor, the presence of disability (with vs. without), and measure's dimensions as within-subject factors, were systematically conducted. For the measure Ascent of man, the mixed model ANOVA only included the factors of type of disability and presence of disability. Because the measure Inalienability of Human Rights only implied the variable type of disability, *t*-test for independent samples was performed in order to compare possible different attributions between people with physical disabilities and people with mental disabilities.

RESULTS

SOCIAL JUDGMENT OF PEOPLE WITH DISABILITIES

SCM of People with Mental and Physical Disabilities

There were main effects of type of disability, presence of disability, and SCM's dimensions (see Tables 2 and 3 for details). These main effects were better explained by two first order interactions (see also Figure 1).

Indeed, the interaction effect between type of disability and presence of disability revealed that participants attributed more traits to people without mental disabilities than to people with mental disabilities (all $p_{Bonferroni} < 0.001$), but no such difference occurred between people

		SCM		INFRAHUMANIZATION				INDIRECT ANIMALISTIC DEHUMANIZATION		BLATANT ANIMALISTIC AND MECHANISTIC DEHUMANIZATION		ASCENT OF MAN	ALIENABILITY OF HUMAN RIGHTS
TYPE OF DISABILITY	PRESENCE OF A DISABILITY	COMPETENCE	WARMTH	POSITIVE PRIMARY EMOTIONS	NEGATIVE PRIMARY EMOTIONS	POSITIVE SECONDARY EMOTIONS	NEGATIVE SECONDARY EMOTIONS	UH	NON-UH	BLATANT UH	BLATANT HN		
Mental	Yes	3.61 (0.83)	4.09 (0.90)	0.14 (0.16)	0.41 (0.24)	0.25 (0.21)	0.18 (0.17)	3.38 (0.97)	4.63 (0.89)	4.20 (0.97)	3.87 (0.84)	88.41 (12.59)	6.72 (0.60)
	No	4.89 (0.91)	4.31 (0.88)	0.41 (0.29)	0.13 (0.15)	0.31 (0.25)	0.10 (0.13)	4.42 (0.84)	4.03 (0.80)	4.30 (0.83)	4.42 (0.84)	90.76 (10.22)	/
Physical	Yes	4.08 (0.98)	4.52 (1.09)	0.15 (0.17)	0.30 (0.19)	0.37 (0.21)	0.16 (0.16)	4.53 (1.04)	3.65 (0.92)	4.74 (1.18)	4.45 (1.16)	89.17 (11.53)	6.86 (0.37)
	No	4.73 (1.00)	4.11 (0.99)	0.37 (0.28)	0.13 (0.17)	0.33 (0.26)	0.10 (0.16)	3.88 (0.83)	4.40 (0.93)	4.32 (1.05)	4.37 (1.04)	89.19 (12.53)	/

Table 2 Means (and standard deviations) of all measures. Per column, different subscripts indicate significant differences between means (according to Bonferroni's post-hoc, $p < 0.05$).

	SCM	INFRAHUMANIZATION	INDIRECT ANIMALISTIC DEHUMANIZATION	BLATANT ANIMALISTIC AND MECHANISTIC DEHUMANIZATION	ASCENT OF MAN
Main effects					
Type of disability [T]	$F(1,557) = 4.42$, $p = 0.04$, $\eta^2G = 0.005$	$F(1,557) = 0.51$, $p = 0.48$, $\eta^2_G = 0.00$	$F(1,557) = 0.001$, $p = 0.98$, $\eta^2_G = 0.00$	$F(1,557) = 14.05$, $p < 0.001$, $\eta^2_G = 0.02$	$F(1,553) = 0.21$, $p = 0.65$, $\eta^2_G = 0.00$
Presence of a disability [P]	$F(1,557) = 137.46$, $p < 0.001$, $\eta^2_G = 0.05$	$F(1,557) = 24.63$, $p < 0.001$, $\eta^2_G = 0.001$	$F(1,557) = 20.58$, $p < 0.001$, $\eta^2_G = 0.01$	$F(1,557) = 1.38$, $p = 0.24$, $\eta^2_G = 0.00$	$F(1,553) = 6.15$, $p < 0.05$, $\eta^2_G = 0.003$
Measure's dimensions	$F(1,557) = 11.93$, $p < 0.001$, $\eta^2_G = 0.001$	[E] $F(1,557) = 19.40$, $p < 0.001$, $\eta^2_G = 0.01$ [V] $F(1,557) = 196.29$, $p < 0.001$, $\eta^2_G = 0.06$	$F(1,557) = 24.08$, $p < 0.001$, $\eta^2_G = 0.005$	$F(1,557) = 38.64$, $p < 0.001$, $\eta^2_G = 0.003$	
First Order Interaction Effects					
Type of disability * Presence of a disability	$F(1,557) = 74.33$, $p < 0.001$, $\eta^2_G = 0.03$	$F(1,557) = 3.66$, $p = 0.06$, $\eta^2_G = 0.00$	$F(1,557) = 7.97$, $p = 0.005$, $\eta^2_G = 0.002$	$F(1,557) = 79.92$, $p < 0.001$, $\eta^2_G = 0.02$	$F(1,553) = 6.15$, $p < 0.05$, $\eta^2_G = 0.002$
Presence of a disability * Measure's dimensions	$F(1,557) = 453.83$, $p < 0.001$, $\eta^2_G = 0.07$	[E] $F(1,557) = 9.95$, $p = 0.002$, $\eta^2_G = 0.002$ [V] $F(1,557) = 326.50$, $p < 0.001$, $\eta^2_G = 0.10$	$F(1,557) = 2.15$, $p = 0.14$, $\eta^2_G = 0.001$	$F(1,557) = 86.19$, $p < 0.001$, $\eta^2_G = 0.01$	
Type of disability * Measure's dimensions	$F(1,557) = 0.82$, $p = 0.37$, $\eta^2_G = 0.00$	[E] $F(1,557) = 24.74$, $p < 0.001$, $\eta^2_G = 0.01$ [V] $F(1,557) = 16.37$, $p < 0.001$, $\eta^2_G = 0.005$ ([E] * [V]) $F(1,557) = 141.33$, $p < 0.001$, $\eta^2_G = 0.04$	$F(1,557) = 140.24$, $p < 0.001$, $\eta^2_G = 0.03$	$F(1,557) = 0.15$, $p = 0.70$, $\eta^2_G = 0.00$	
Second Order Interaction Effects					
Type of disability * Presence of a disability * Measure's dimensions	$F(1,557) = 0.01$, $p = 0.93$, $\eta^2_G = 0.00$	[E] $F(1,557) = 6.25$, $p = 0.01$, $\eta^2_G = 0.001$ [V] $F(1,557) = 22.63$, $p < 0.001$, $\eta^2_G = 0.01$ ([P]* [E] * [V]) $F(1,557) = 250.02$, $p < 0.001$, $\eta^2_G = 0.05$ ([T]* [E] * [V]) $F(1,557) = 1.60$, $p = 0.21$, $\eta^2_G = 0.00$	$F(1,557) = 320.25$, $p < 0.001$, $\eta^2_G = 0.15$	$F(1,557) = 1.54$, $p = 0.21$, $\eta^2_G = 0.00$	
Third Order Interaction Effects					
		$F(1,557) = 0.61$, $p = 0.44$, $\eta^2_G = 0.00$			

Table 3 Results of statistical tests conducted in the Study on the measures of SCM, subtle measures, and the Blatant Animalistic and Mechanistic Dehumanization measure.

Note: Concerning infrahumanization results, [E] is for the variable emotions' dimensions, [V] for the variable valence's dimensions, [T] is for the variable type of disability, and [P] is for presence of disability.

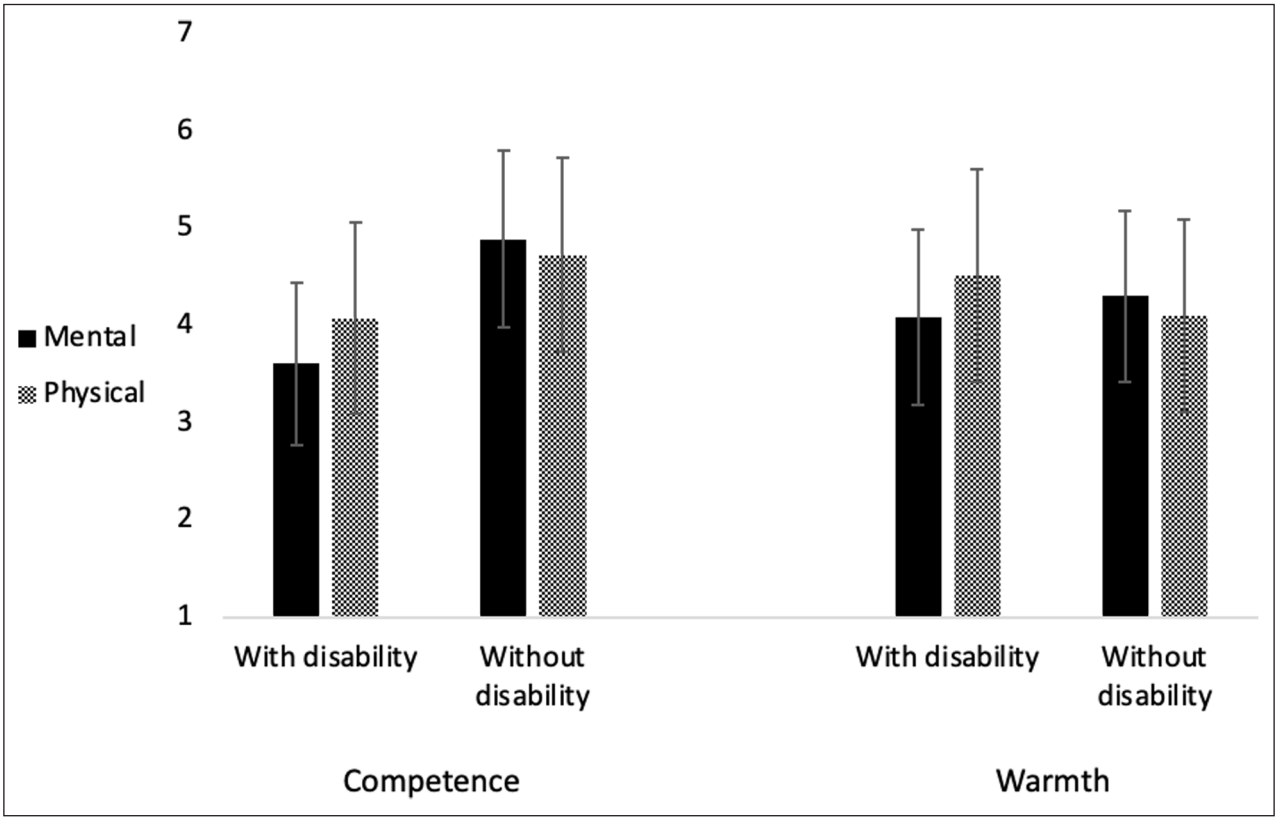

Figure 1 Mean attributions of SCM's dimensions depending on the Type of Disability and Presence of disability, with standard deviations.

with and without physical disabilities. In line with previous findings (Rohmer & Louvet, 2011), people with mental disabilities were less subject to positive social judgments than people with physical disabilities.

Furthermore, the interaction effect between presence of disability and SCM's dimension revealed that participants attributed more competence than warmth to people without disabilities, the reverse being observed for people with disabilities (all $p_{Bonferroni} < 0.001$).

The combination of these two interaction effects reveal that whereas people with mental disabilities endured negative social judgments, people with physical disabilities were, for their part, more subject to ambivalent social judgments.

SUBTLE DEHUMANIZATION OF PEOPLE WITH DISABILITIES

Infrahumanization of People with Mental and Physical Disabilities

There were main effects of presence of disability, emotions' dimensions, and valence's dimensions (see Tables 2 and 3 for details). There were also first order interaction effects between presence of disability and emotions' dimensions, between presence of disability and valence's dimensions, between type of disability and emotions' dimensions, between type of disability and valence's dimensions, and between emotions' dimensions and valence's dimensions. These effects were better explained by second order interaction effects (see also Figure 2).

Indeed, an interaction effect between type of disability, presence of disability, and emotions' dimensions showed that participants attributed more primary emotions than secondary emotions to people both with and without mental disabilities (all $p_{Bonferroni} < 0.001$), while no difference was evidenced between the two groups. Interestingly, participants attributed more secondary emotions to people with physical disabilities than to people without physical disabilities ($p_{Bonferroni} < 0.001$); whereas, no such difference was evidenced for primary emotions.

Moreover, an interaction effect between type of disability, presence of disability, and valence's dimensions revealed that participants attributed more positive than negative emotions to people without mental disabilities, the reverse being true for people with mental disabilities (all $p_{Bonferroni} < 0.001$). Besides, whereas participants attributed more positive than negative emotions to people without physical disabilities ($p_{Bonferroni} < 0.001$), no such difference occurred for people with physical disabilities.

Finally, an interaction effect between presence of disability and valence's dimensions and emotions' dimensions revealed that when the emotions were positive, participants attributed more primary than secondary emotions to people without disabilities, the reverse being true for people with disabilities (all $p_{Bonferroni} < 0.001$). When the emotions were negative, participants attributed more primary emotions than secondary emotions to people with disabilities ($p_{Bonferroni} < 0.001$);

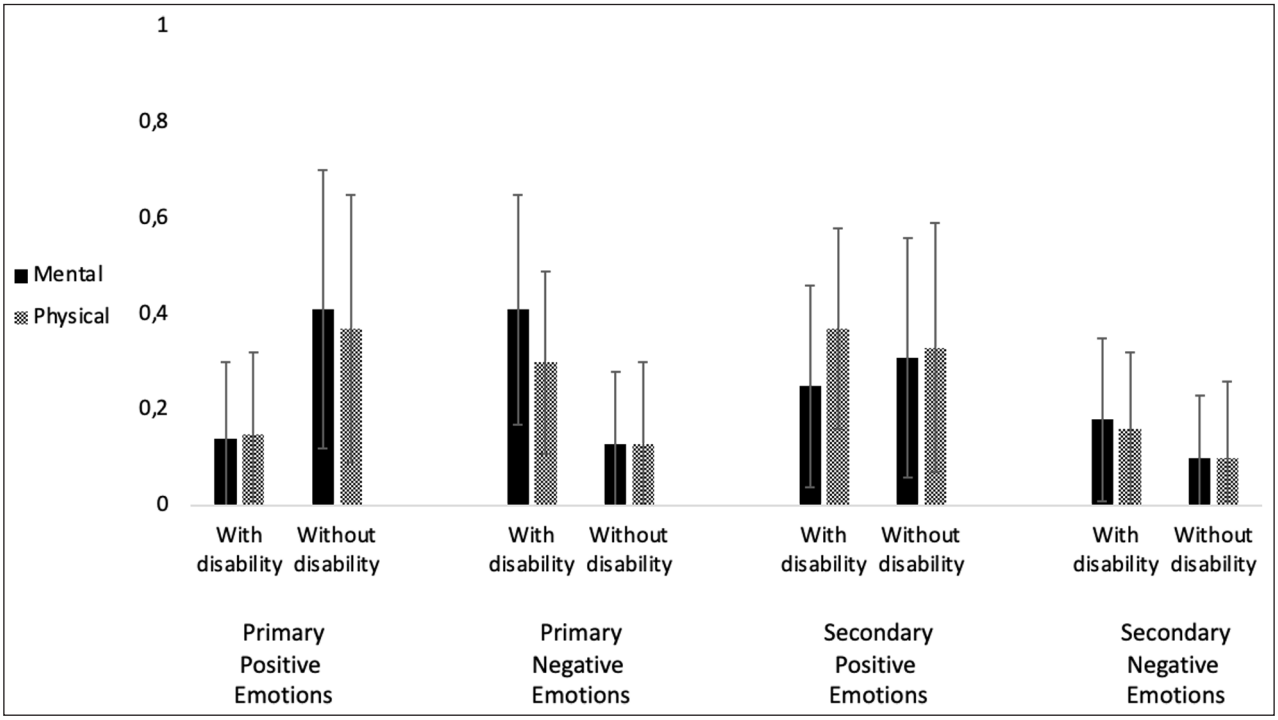

Figure 2 Mean attributions of Infrahumanization's dimensions (i.e., Emotions' dimensions and Valence' dimensions) depending on the Type of Disability and Presence of disability, with standard deviations.

whereas, no such difference occurred for people without disabilities.

Although people with physical and mental disabilities are not perceived in the same way, it is difficult to draw any conclusions on a relative infrahumanization. Indeed, these results do not support the hypothesis of an infrahumanization of people with disabilities in general because the people without disabilities did not receive more secondary emotions. On the contrary, humanizing attributions were even made in favor of people with physical disabilities. The findings are consistent with a favoritism bias in favor of people without disabilities and a devaluation bias in disfavor of people with disabilities, the latter being stronger against people with mental disabilities.

Subtle Indirect Dehumanization of People with Mental and Physical Disabilities

There were main effects of presence of disability and measure's dimensions, first order interaction effects between type of disability and presence of disability, and between type of disability and measure's dimensions (see Tables 2 and 3 for details). These effects were best explained by a second order interaction effect (see also Figure 3).

Indeed, an interaction effect between type of disability, presence of disability, and measure's dimensions revealed that participants attributed more UH traits than non-UH traits to people without disabilities, and more non-UH traits than UH traits to people with disabilities, but only when these were mental disabilities. Interestingly, the opposite pattern was observed for physical disabilities, because participants attributed more UH traits than non-UH traits to people with physical disabilities and more non-UH traits than UH traits to people without physical disabilities (all $p_{Bonferroni} < 0.001$).

These results hence showed that people with mental disabilities were more dehumanized than people with physical disabilities when considering a subtle form of animalistic dehumanization. Indeed, these findings confirmed an animalistic dehumanization of people with mental disabilities (see Boysen et al., 2020b) and a reverse effect for people with physical disabilities, benefiting from even more humanizing attributions.

BLATANT DEHUMANIZATION OF PEOPLE WITH DISABILITIES

Blatant Indirect Dehumanization of People with Mental and Physical Disabilities

There were main effects of presence of disability and this measure's dimensions (see Tables 2 and 3 for details). These main effects were best explained by two first order interactions (see also Figure 4).

Indeed, the interaction effect between type of disability and presence of disability revealed that, similar to the precedent humanization measure, whereas people without mental disabilities received higher attributions than people with mental disabilities, the reverse was observed for people with physical disabilities (all $p_{Bonferroni} < 0.001$).

Furthermore, an interaction effect between presence of disability and measure's dimension revealed that participants attributed more blatant-HN traits to the people without disabilities than to people with disabilities, but they attributed more blatant-UH traits to people with disabilities than to people without disabilities (all $p_{Bonferroni} < 0.001$).

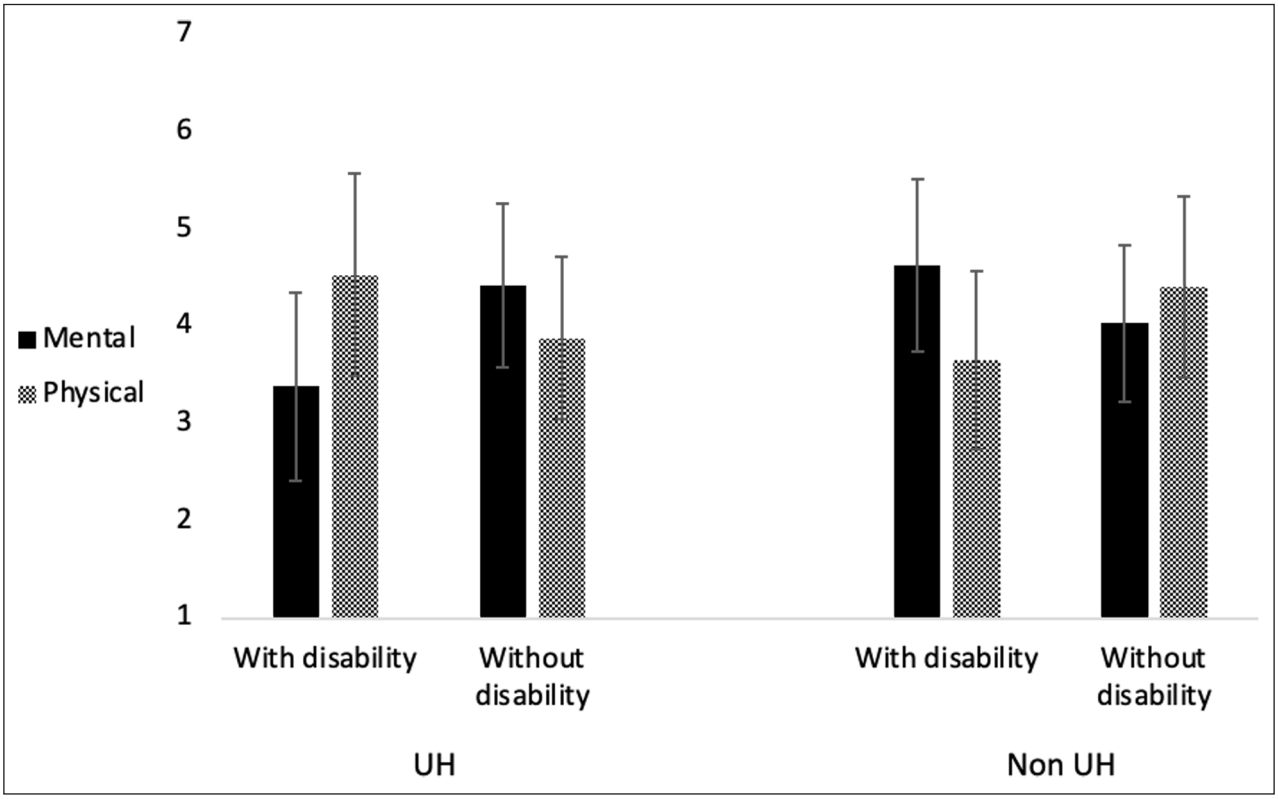

Figure 3 Mean attributions of Subtle Indirect Animalistic Dehumanization's dimensions depending on the Type of Disability and Presence of disability, with standard deviations.

Together, these results showed that people with mental disabilities were more dehumanized than people with physical disabilities, also when considering blatant forms of dehumanization. Indeed, these findings revealed blatant forms of dehumanization toward people with mental disabilities, which was deeper for the mechanistic form, and a reverse effect for people with physical disabilities, getting more humanizing attributions, which was particularly true for blatant-UH attributes.

Alienability of Human Rights for People With Mental and Physical Disabilities

As Levene's tests revealed unequal variances for our two experimental conditions, we calculated Welch's *t*-tests instead of Student's *t*-tests, including the type of disability (mental and physical) as between-subject factor. This analysis showed that human rights were perceived as significantly less alienable to people with physical disabilities when compared to people with mental disabilities ($t(433.1) = 3.22$, $p < 0.01$, Cohen's $d = 0.28$), suggesting a greater indirect dehumanization of people with mental disabilities.

Ascent of Man for People With Mental and Physical Disabilities.

There was no main effect of type of disability but a main effect of presence of disability, which was best explained by an interaction effect between these two variables (see Tables 2 and 3 for details). The latter revealed that people without mental disabilities were perceived as being significantly more evolved than people without mental disabilities ($p_{Bonferroni} < 0.01$); whereas, such difference was not observed between people with and without physical disabilities.

These results also showed that people with mental disabilities were more blatantly dehumanized than people with physical disabilities. Again, these findings suggest a blatant dehumanization of people with mental disabilities; whereas, no blatant dehumanization was evidenced for people with physical disabilities on this measure.

DISCUSSION

The aims of this study were to investigate the differences in humanness attributions to people with mental disabilities and to people with physical disabilities, and to determine if the latter were actually dehumanized. In this study, we repeatedly showed that people with mental disabilities are perceived as being less human than people with physical disabilities, whether it be through blatant or subtle measures of dehumanization. As expected, people with mental disabilities were blatantly dehumanized (Boysen et al., 2020b), and their dehumanization also occurred on subtle measures. As far as people with physical disabilities are concerned, we found no evidence of dehumanization. They were even attributed more humanness-related characteristics than people without physical disabilities in all measures of traits ascriptions. Overall, this research confirms that variations in perceptions between people labeled as

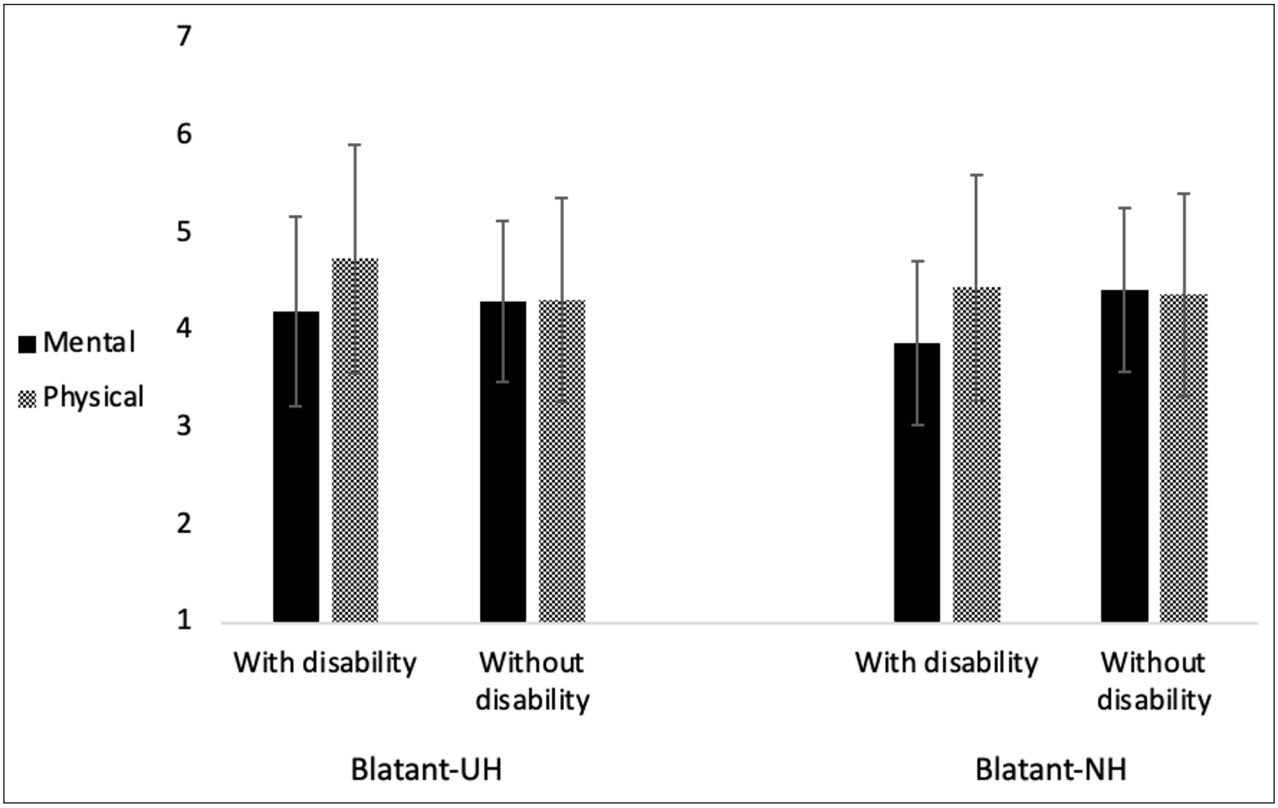

Figure 4 Mean attributions of Blatant Indirect Animalistic and Mechanistic Dehumanization's dimensions depending on the Type of Disability and Presence of disability, with standard deviations.

having mental and physical disabilities extend beyond social judgments to humanness perceptions. Interestingly, the humanization of people living with a disability did vary from largely in deficit for people with mental disabilities to highly in benefit for people with physical disabilities. These findings will be discussed in terms of contrast between the various types of disabilities. We will also consider the possible implications of the dehumanization of people with mental disabilities and the particular case of humanity attributions to people with physical disabilities.

First, as expected and consistent with previous studies on social judgments (Rohmer & Louvet, 2011; Weiner et al., 1988), a preference toward people with physical disabilities has been evidenced on humanness attributions. One rationale for the discrepancies observed between the perception of the two types of disability may be due to the location of the impairment. According to two theories related to dehumanization, dehumanized perceptions occur when human beings are perceived as lacking 'mind' (mind perception theory) (Gray et al., 2007) or when they are seen and treated as objects (objectification theory) (Fredrickson & Roberts, 1997). For example, men objectify women when they focus more on their physical aspect and less on their personality. Given the centrality of mental states in the conception of humanity, the adherence to a mind-body dualism may thus explain why people with an impaired psyche are seen as less human than those with an impaired body (Briñol et al., 2017). Moreover, their variations in terms of visibility may also be decisive. Indeed, prototypical mental disabilities are invisible (e.g., schizophrenia, mental retardation); whereas, prototypical physical disabilities are visible, at least through the equipment (e.g., spinal cord injury, visual impairment). Experiences of ableism are known to differ among people with visible impairments (e.g., they report more unwanted help, overprotection) and people with invisible impairments (e.g., they report invalidation of their status as disabled) (Nario-Redmond, Kemerling & Silverman, 2019). An experimental study corroborated these social perceptions by showing that accommodations for psychiatric disabilities and invisible physical disabilities are less likely to be considered appropriate (Deckoff-Jones & Duell, 2018). In addition to studying the effect of these two parameters (i.e., impairment location and visibility), it might also be a benefit for future studies to investigate the potential role of the intersection between them (e.g., Down syndrome as a visible and mental disability, disabling disease as an invisible and physical disability) in the variations of humanness perceptions of people living with a disability.

Second, subtle and blatant forms of animalistic dehumanization were systematically evidenced for people with mental disabilities (except for the infrahumanization measure), akin to those labeled 'mentally ill' (Boysen et al., 2020a; Martinez et al., 2011). Dehumanization has detrimental outcomes: people express less willingness to help and more hostility toward those they dehumanize (Andrighetto et al., 2014; Kteily et al., 2015). In addition, being the target of dehumanized perceptions is also deleterious to people with mental health problems

(Fontesse et al., 2020). As our sample of participants had completed two years of psychology studies at the university, they were aware of the difficulties that people with mental disabilities may face. As such, they are expected to be less biased than their peers (Arsić et al., 2021). As they actually displayed negative biases toward people with mental disabilities, and as they are prone to take care of these patients as professionals, prevention strategies targeting future professionals working within the mental health system are needed. Thus, future studies should examine a potential beneficial impact of promising humanizing strategies, such as multiple categorization, individuation (Crisp & Hewstone, 2007; Parker et al., 2020), or intergroup contact (Boysen et al., 2020b; Kteily & Bruneau, 2017).

Finally, our results concerning the overattribution of humanness-related traits to people with physical disabilities are in question. A first possible interpretation is an ingroup dehumanization of people living with no disability.[3] Despite research showing possible self-dehumanization triggered by one or another harmful treatment (Bastian & Crimston, 2014), to our knowledge no published findings have evidenced an ingroup dehumanization for a dominant group. A second interpretation is a superhumanization of people with physical disabilities. As some scholars have demonstrated the existence of moderators for outgroup dehumanization (e.g., ingroup glorification) (Leidner et al., 2010), superhumanization remains possible even if it has not been evidenced on human entities yet (Demoulin, Saroglou & Van Pachterbeke, 2008; Gray et al., 2007). People may want to affirm the humanity of people with physical disabilities to contrast with their perceived low social utility, following either a norm of decency (Rohmer & Louvet, 2018b) or principles of humanism. It is also possible that these results reflect admiration toward people with physical disabilities, often depicted as 'inspirational' (Nario-Redmond et al., 2019). On the face of it, this admiration seems to be prosocial and to reflect respect. On the other hand, as it may be used to remind able-bodied people of the superiority of their condition, it can be highly detrimental and criticized through 'inspiration porn' (Nario-Redmond et al., 2019). Scholars have argued that people are willing to reserve a more human essence to themselves than to outgroups, so it is surprising that people allocated it to a stigmatized pitied outgroup (Cuddy et al., 2007; Leyens et al., 2001). However, the inspiration of people with disabilities is related to the perception that they are people who overcome the suffering that is stereotypically perceived as intrinsic to being disabled (see Nario-Redmond, 2020). Accordingly, our findings on the infrahumanization measure show that people with disabilities get more negative emotions. Following a sympathy effect (i.e., a societal norm to be kind toward this protected outgroup) (Cacciapaglia et al., 2004; Ren et al., 2008), participants may have exaggerated their positive evaluations, including their humanness-related characteristics attributions, emphasized by social desirability. Our results showing that the favoritism bias was weaker toward people without physical disabilities than toward people without mental disabilities—but not vice-versa—strengthen this assumption. Interestingly, social desirability may also explain why the effect sizes were mostly low to medium. Future studies should try to replicate these results with implicit measures to test whether people with physical disabilities are better associated with humanness or whether these findings do not remain through an automatic procedure (such as the over-attribution of warmth does not) (Rohmer & Louvet, 2018a). Furthermore, as superhumanization was stronger while measuring traits ascriptions, the social value of humanness as it is measured by these explicit attributions should be questioned. Giving human traits to the outgroup with physical disabilities does not seem as challenging as giving it evolvement or, *a fortiori,* competence (highly correlated with status) (Durante et al., 2013). Future studies may benefit from understanding more clearly the social value of these human traits.

LIMITATIONS AND FUTURE RESEARCH

Several variables were not identified in this study but may have had an influence, notably those related to the targets and the population. The current study focused on two labels: physical disability and mental disability. Indeed, as we just provided a label to our participants and did not ask afterwards if they had a specific pathology in mind, we are not able to know if our results are due to a pathology that is prototypical when thinking about the label. For example, Sadler and colleagues (2012) demonstrated in their second study that social judgments of people with mental illness and specific illnesses (e.g., depression, addictions) may vary accounting for a more individualized assessment (see also Boysen et al., 2020b). Even in the same pathology, different perceptions may emerge depending on its conceptualization (e.g., schizophrenia) (Pavon & Vaes, 2017). Put differently, differences might arouse at an always more specific level, leading to a person-based approach. Nevertheless, following Nario-Redmond (2010), we think that moving beyond a person-based approach is needed when one aims at understanding the challenges people living with a label of disability face. Indeed, even if people living with mental disabilities suffer from different pathologies, they may consult at the same place, the same medical specialist, and may thus suffer from the same stigma (e.g., mentally ill) (Corrigan, 2004). Prevention may thus benefit from targeting the group as a whole and not just its specificities to fit with social perception considering them uniformly. Moreover, preventing the deleterious outcomes of the label through dividing the category is questionable. It is a little like

saying that people with disabilities should not be painted with a same brush, which implicitly contributes to the stigmatization of those who deserve their brush. Future studies should investigate whether humanity attributions vary among people with different physical disabilities as they do among people with different mental disabilities (Boysen, et al., 2020b).

Moreover, one may fear that a population made up of students in psychology may be less biased toward people with disabilities. This would mean both that people with mental disabilities are more dehumanized by the lay population and that psychologists are more willing to show tolerant attitudes toward people with physical disabilities. Indeed, in a study comparing students in humanities and social sciences, some findings revealed that students studying at a faculty dedicated to special education and rehabilitation had the worst attitudes toward disability (Arsić et al., 2021). Interestingly, these students are also likely to care for people with disabilities. Although sociodemographic variables such as age and gender do not appear to stably influence social judgments toward people with disabilities, future studies are needed to determine whether our findings also apply to populations other than psychology students (Arsić et al., 2021; Kritsotakis et al., 2017).

CONCLUSION

As expected, the asymmetric perception according to disability type—either mental or physical—formerly evidenced in terms of stereotype content is found to be similar in terms of humanity attributions, evidencing that a particular and strategic attention must be paid not only to stereotype but also to dehumanization processes when dealing with different disability types. One of the aims promoted during the National Conference on Disabilities (Conférence Nationale du Handicap, 2020) was to 'change the image of disability and enhance the contribution of people with disabilities to society', but we are forced to admit that disparities among those perceptions may wreck the goodwill. When asked 'How can society guarantee a real place for disabled people?', 12% of French People answered 'Raising awareness and taking better account of the diversity of disabilities, particularly those that are invisible.' With regard to our results, this challenge may indeed be decisive.

DATA ACCESSIBILITY STATEMENT

The data that support the findings of this study are openly available on the Open Science Framework at https://osf.io/sdfwa/?view_only=fe49a128df7f41338f57eaf7865ebbfb.

NOTES

1 Linear mixed models were first conducted in order to capture the random effect due to the period of the study. Yet, as the intraclass correlation coefficients were < 0.01, revealing no impact of the year of testing, we decided to conduct mixed ANOVAs and Student t-tests regardless of the year of testing.

2 Because our past unpublished pilot studies conducted with measures of subtle indirect dehumanization through HN attributions (Haslam et al., 2008) failed to have reliable psychometric properties (e.g., Cronbach's $\alpha < 0.65$), we were not able to include this scale in the present study.

3 As former studies highlighted the importance of differentiating between ingroup and outgroup (de)humanization (Vaes et al., 2012), the possible interpretation as a combination of both processes will not be discussed here.

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COMPETING INTERESTS

The authors have no competing interests to declare.

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