

Tesis Doctoral

**ANIMALIZAR Y MECANIZAR:
DOS FORMAS DE DESHUMANIZACIÓN**

**ANIMALISTIC AND MECHANISTIC DEHUMANIZATION:
TWO WAYS OF DEHUMANIZING PEOPLE**

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FACULTAD DE PSICOLOGÍA

Departamento de Psicología Social

**ANIMALIZAR Y MECANIZAR:
DOS FORMAS DE DESHUMANIZACIÓN**

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"Sofía volvía a casa con Jorunn, su mejor amiga en la escuela. Jorunn tenía su opinión acerca del ser humano del cual pensaba que su cerebro era como un ordenador, en cambio, Sofía no pensaba lo mismo ya que el ser humano tenía que ser algo más que una máquina"

Jostein Gaarder (El mundo de Sofía)

“El mundo de mi hija Tici está lleno de cajitas para clasificar. Es su medida para comprender el mundo que la rodea. Si caminas erecto y tu piel es suave, eres uno de los suyos. Si vas encorvado y tienes el rostro marcado por los embistes de la vida, te clasifica como miembro de una especie misteriosa. “El abuelo de Paula anda muy recto y se mueve mucho -me dijo el otro día-, no parece un abuelo”. “¿Y qué parece?”, le pregunté con curiosidad. “Parece humano”, dictaminó con absoluta seriedad mi duendecillo de 5 años”

Elsa Punset (Una mochila para el universo)

“Es indudable que los judíos son una raza pero no son humanos”

Adolf Hitler

*“Verdaderamente el hombre es el rey de las bestias, pues su brutalidad
sobrepasa la de aquellas”*

Leonardo Da Vinci

*“¿Puede alguien considerar a una criatura semejante a nosotros como
un artículo de posesión, una inversión, un pedazo de carne, un “eso”,
sin degenerar en crueldad hacia esa criatura?”*

Karen Davis

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*porque me regalaron mi primera pizarra
y se convirtió para siempre en mi juguete favorito.*

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General Index

General Index

Overview	29
Chapter 1: Introduction (written in Spanish).....	33
Chapter 2: Aims of Research	73
Chapter 3: Empirical Studies	81
<i>Attributing humanness to groups: How do denials of secondary emotions, human uniqueness and human nature relate?</i>	83
<i>Are they animals or machines? Measuring dehumanization</i>	119
<i>Attitudes, Emotions and Behaviours toward Animalistically and Mechanistically Dehumanized Groups</i>	159
<i>Interacting with dehumanized others? Only if they are useful</i>	205
Chapter 4: General Discussion	253

Detailed Index

Detailed Index

Overview	29
Chapter 1: Introduction	33
1. La deshumanización en el mundo en el que vivimos	35
2. ¿Qué es la humanidad?	40
3. La animalización.....	44
4. La mecanización.....	48
5. ¿Cómo medir la animalización y la mecanización?	49
6. El enfoque de la atribución de rasgos y el enfoque de la metáfora.....	56
7. Las consecuencias de la animalización y la mecanización	58
Referencias	65
Chapter 2: Aims of the Research	73
Chapter 3: Empirical Studies	81
<i>Attributing humanness to groups: How do denials of secondary emotions, human uniqueness and human nature relate?</i>	83
Abstract.....	85
Introduction	87
Preliminary Study.....	93
Study 1	95
Method.....	96
Results	97
Discussion.....	100
Study 2	101
Method.....	102
Results	105
Discussion.....	107
General Discussion.....	108
References	113

<i>Are they animals or machines? Measuring dehumanization</i>	119
Abstract.....	121
Introduction	123
Studies 1 and 2.....	132
Preliminary Study.....	132
Study 1.....	135
Method.....	135
Results	136
Study 2.....	137
Method.....	138
Results	138
Discussion Studies 1 and 2.....	139
Studies 3 and 4.....	140
Study 3.....	141
Method.....	141
Results	144
Study 4.....	145
Method.....	145
Results	146
Discussion Studies 3 and 4.....	146
General Discussion.....	147
References	154

<i>Attitudes, Emotions and Behaviours toward Animalistically and Mechanistically Dehumanized Groups</i>	159
Abstract.....	161
Introduction	163
Study 1	170
Method	171
Results and Discussion	174
Study 2	177

Method.....	178
Results and Discussion	180
General Discussion.....	193
References	199
<i>Interacting with dehumanized others? Only if they are useful</i>	205
Abstract.....	207
Introduction	209
Study 1	216
Method.....	216
Results	218
Discussion.....	223
Study 2	224
Method.....	226
Results	227
Discussion.....	229
Study 3	230
Method.....	234
Results	236
Discussion.....	240
General Discussion.....	241
References	247
Chapter 4: General Discussion	253
Summary of Findings	255
Implications.....	264
Limitations and Future Research	268
References	271

OVERVIEW

Dehumanization is defined as people's tendency to perceive the outgroup as being less human than the ingroup (for reviews, see Haslam, Loughnan, Kashima, & Bain, 2008; Leyens, Demoulin, Vaes, Gaunt, & Paladino, 2007, Vaes, Leyens, Paladino and Pires Miranda, 2012). Thus, it might be thought that groups that are denied humanness will be discriminated against to a greater degree than groups considered to be fully human (Vala, Pereira and Leyens, 2009). Indeed, as Leyens et al. (2007) pointed out, this process has subtle and important consequences in our daily lives that can affect intergroup relations.

Furthermore, according to Haslam (2006), dehumanization can be manifested in two forms: animalistic and mechanistic. In his model, the author posited how individuals can be likened to animals, and hence, they will be perceived as unintelligent, immoral, coarse or uncivilized. Likewise, people can also be seen as robots or machines, in which case, they will be perceived as cold, rigid, mechanical, or lacking emotions or agency.

The present dissertation used the model by Haslam in order to analyse and compare these two forms of dehumanization. In our analysis, we will attempt to clarify how animalistic and mechanistic dehumanization affect intergroup relations. This insight was the basis for the development of different empirical studies that form part of this thesis. Accordingly, the chapters included in this dissertation are built on experimental research and show some results related to the different senses of humanness, the creation of new procedures to capture them and discriminate between animalistic and mechanistic dehumanization, and the study of the

consequences that both forms of dehumanization have on different interpersonal and intergroup measures.

The thesis is structured in four chapters. The first chapter is a theoretical review of the most relevant literature on infrahumanization and dehumanization. Specifically, it provides theoretical support for the main sections included in this dissertation: the different senses of humanness; the various forms of measuring animalistic and mechanistic dehumanization; the consequences of dehumanization reported in the literature. The second chapter includes the main goals set in the thesis, as well as our hypotheses. The reader will find the empirical part of the dissertation from chapter 3 onwards. Eleven studies are presented across four papers. Lastly, in the fourth chapter, we discuss the main findings and analyse the theoretical and practical implications, limitations, and also some ideas for future research.

It should be noted that the papers presented in the third chapter of the thesis were written with the intention of being submitted for publication, therefore, certain explanations of basic concepts and theories inevitably appear several times. Additionally, in order to fulfill the requirements of the International PhD program at Granada University, some chapters were written in Spanish (chapter 1), and others in English (chapters 2, 3 and 4).

Capítulo 1: INTRODUCCIÓN

(Chapter 1: INTRODUCTION)

1. La deshumanización en el mundo en el que vivimos

El 1 de diciembre de 1955, en Estados Unidos, Rosa Park fue arrestada por negarse a ceder su asiento en el autobús a un hombre de raza blanca. Fue acusada por alterar el orden público y no sentarse en la sección destinada para ella, en la sección para personas de raza negra. Tal injusticia generó el nacimiento de un movimiento de protesta liderado por Martin Luther King cuyo argumento defendía que los negros tenían los mismos derechos humanos que los blancos.

Hoy en día, el momento histórico al que alude la cita anterior en la lucha por la igualdad puede parecer lejano en el tiempo. Arcaico incluso. Podría archivarse en la carpeta de acontecimientos históricos negativos del mundo en el que vivimos. Y lamentablemente no sería el único. Un repaso por la Historia de la Humanidad nos permite recoger innumerables situaciones que pueden provocarnos dolor y miedo. Es terrible comprobar cómo el ser humano ha sido capaz de tratar a las personas que no pertenecen a su grupo de forma realmente inhumana. Podríamos trasladarnos a la Edad Antigua para recordar a aquellas personas que fueron consideradas esclavos/as por sus dueños/as. Y por tanto, tratados como seres de su absoluta propiedad. Sin respetar sus necesidades humanas más básicas ni gozar de libertad. Más escalofriante fue el trato y el desprecio que Adolf Hitler y sus seguidores mantuvieron hacia los judíos. Para el mandatario alemán: “los judíos eran una raza, pero no eran humanos”. Y por tanto, debían ser extinguidos. Los campos de concentración nazis son ejemplos evidentes de cómo las personas pueden deshumanizar al exogrupo: denigrándolo y maltratándolo hasta límites insospechados. Pero los judíos no fueron únicamente infrahumanizados en la época de Hitler. En este sentido es interesante conocer cómo

en siglos anteriores al nazismo ya existía una concepción animalizada de las personas con origen judío. De esta forma, con objetivo de humillarlos, se les llamaba “Judensau” (cuya traducción es *cerda judía*) o “Judenschwein” (*cerdo judío*). Además, para mofarse de los judíos ante el público, se creó una iconografía con la representación de los mismos, en los que se les denigraba y se les comparaba con tales animales. Dichas imágenes y esculturas podían contemplarse en numerosas iglesias de Europa Central.

El trato inhumano que han recibido grupos como los judíos en Europa central o las personas de raza negra en América, no se ha observado únicamente en minorías étnicas o en contextos donde conviven grupos que difieren en raza o religión. Avanzando un poco más en el tiempo y situándonos en los siglos XIX y XX, podemos recordar el surgimiento de talleres de explotación laboral (en países del tercer mundo o Asia), donde los trabajadores eran obligados a trabajar por un sueldo muy bajo, durante una cantidad excesiva de horas y sin apenas tiempo para realizar un descanso. Además, en numerosas ocasiones debían acudir a su puesto de trabajo en días festivos sin ser remunerados por ello. Quizás asuste imaginarnos a nosotros mismos en dicha situación, viéndonos obligados por ejemplo a trabajar en fábricas manufacturando ropa, juguetes o calzado sin que nuestros empleadores tuvieran en consideración si necesitamos hacer un descanso para comer o beber agua, ir al baño o un poco de tiempo para liberar el cansancio en nuestras piernas o manos. Duele más si imaginamos que han sido y son niños los que pueden sufrir esas condiciones de trabajo. Bajo nuestro punto de vista, estas situaciones ponen de manifiesto ejemplos de cómo algunas personas a lo largo de la historia, han sido desprovistas de

Humanidad, siendo negadas sus capacidades para experimentar sed o hambre, cansancio, frustración, tristeza o desmotivación. De tal forma que más que tratados como seres humanos, podemos pensar que quiénes los explotaban y sometían a dichas condiciones laborales los percibían como seres mecanizados cuya principal función era la de cumplir con su obligación laboral.

Podría el lector pensar que estos recuerdos pertenecen solo al pasado. Afortunadamente, algunas cosas parecen haber cambiado. ¿Quién podía pensar que sesenta años más tarde de que Rosa Park fuera detenida una persona de color ocuparía la presidencia del mismo país donde un día negros y blancos ocupaban asientos separados? Probablemente nadie. Y sin embargo, como todos sabemos, Barack Obama alcanzó la presidencia de los EEUU en 2008 y recientemente ha sido reelegido. Hecho que va en consonancia con los datos revelados por algunas investigaciones en las se ha comparado los estereotipos y las opiniones de los estadounidenses (de raza blanca) en diferentes espacios temporales (años 1933, 1967 y 1990) y en las que se observa un aumento de la tolerancia hacia el grupo evaluado (estadounidenses de raza negra, Dovidio y Fazio, 1992; Dovidio y Gaertner, 1986). Para comprobar si en nuestro contexto más cercano, los datos aportados por Dovidio y colaboradores, podrían ser replicados, podemos detenernos un momento en la lectura de esta introducción, mirar a nuestro alrededor y observar cómo es el entorno donde habitamos. Podríamos decir que vivimos en una sociedad autodenominada como moderna en la que nadie reconocería ser, por ejemplo, ni racista ni sexista. Muchas personas incluso afirmarían que esos prejuicios pertenecen al pasado. Que nuestro mundo hoy es igualitario, democrático y globalizado, donde se dice que cada vez hay

menos fronteras entre países, donde no se llama “ilegales” a los seres humanos y donde todos los derechos de las personas son respetados.

Y sería un tremendo error, como psicólogos sociales, dejar de mirar hacia nuestro lado sin reconocer que el mundo en el que habitamos no es tal y cómo lo hemos pensado. Porque aunque se han producido cambios, y numerosas personas luchan por la igualdad y la justicia social, no podemos negar que la desigualdad continúa (Pettigrew, 1985). Debemos asumir que el prejuicio más que desaparecer, lo que ha cambiado es la forma en la que se manifiesta (Dovidio y Gaertner, 2010), y hay personas que son percibidas y tratadas de forma distinta solamente por pertenecer a un grupo específico. En este sentido, según los estudios de Tajfel, Billig, Bundy y Flament (1971), la mera categorización de las personas en grupos es condición suficiente para que surja el prejuicio entre los grupos. De esta forma, para comprobar que el mundo no es tan rosa como algunos podrían pensar, podríamos dividir el mundo en distintos grupos sociales: mujeres, hombres, blancos, negros, gitanos, payos, inmigrantes, autóctonos, nacionalistas, discapacitados, personas sin hogar, drogadictos, terroristas, víctimas de atentados, soldados, civiles, empresarios, trabajadores explotados, etc. Y darnos cuenta fácilmente cómo las relaciones que se dan entre los grupos mencionados no son tan positivas como cabría esperar en un mundo tan democrático e igualitario como en el que muchos creen que habitamos.

Porque muchos de los grupos mencionados sufren un trato inhumano en su día a día. De hecho, en el mundo del deporte, es frecuente observar cómo se insulta a determinados jugadores de fútbol de distinta raza llamándoles “monos” o incluso arrojándoles cascaras de plátano al terreno de juego para humillarlos. O la cantidad de

trabajadores que siguen trabajando en condiciones laborales inhumanas, sin tener acceso a la Seguridad Social y sin ningún tipo de cobertura en caso de accidente o enfermedad. Más dramático son los casos de desahucios, especialmente acentuados y visibles en esta época de crisis económica, en los que podemos contemplar cómo las personas son obligadas a abandonar sus casas y pertenencias, dejándolos fuera de su hogar sin aparente reparo por las autoridades que lo ejecutan. O la cantidad de personas sin empleo que son tratadas como “cifras” que suben o bajan y repercuten de forma negativa/positiva en la economía mundial, sin tener en cuenta que detrás de ese número de parados pueden existir familias que estén pasando realmente mal.

Ante estas situaciones de injusticia social, la creación del código que reconoce la Declaración Universal de los Derechos Humanos supuso un paso importante en la lucha contra la discriminación. De esta forma, se pretendía garantizar que todas las personas deben ser respetadas y tratadas de forma igualitaria sin tener en cuenta su grupo de pertenencia, su raza, sexo, religión, estatus, nacionalidad, etc. Sin embargo, como el lector puede constatar, a pesar de la existencia de dicho código, desde la Historia más antigua hasta nuestros días, éste no siempre ha sido respetado. Bajo nuestro punto de vista, es posible que para que pudiese aplicarse sin distinción, dicho código debiera considerar que todas las personas, independientemente del grupo al que pertenezcan, son igualmente humanas/os. En este sentido, la investigación sobre las nuevas formas de prejuicio muestra que existe un sesgo, mediante el cual las personas tienden a pensar que su grupo es más humano que el de los demás y por tanto merecedores en mayor medida de dichos derechos que las personas que no comparten su misma categoría social (Leyens y cols., 2001; Haslam, 2006).

Esta forma de percibir a los demás como menos humanos que el propio grupo, se conoce como deshumanización y tal y como Castano y Giner-Sorolla (1996) señalan es una forma sutil y tóxica de prejuicio. En esta misma línea, Dixon, Levine, Reicher y Durrheim (2012) subrayan como “este proceso ha estado asociado históricamente a las formas más degradantes de prejuicio” (p. 415) y por tanto, a nosotros como psicólogos sociales dicho proceso no nos debe resultar indiferente. Quedan muchos interrogantes por resolver en cuanto a la capacidad deshumanizadora de los grupos y personas, sobre sus efectos y por tanto, mucho trabajo por hacer para promover el cambio hacia la igualdad. Es sin duda curioso como en el mundo en el que vivimos con grandes avances tecnológicos, con progresos magníficos en el campo de la Medicina, o con hazañas tan inolvidables como cuando el hombre pisó por primera vez la Luna, se eche de menos uno de los elementos más relevantes para las relaciones entre los grupos y las personas. Aquí, en la Tierra, en el único planeta donde (de momento) habita la especie humana y con incontables medios materiales para intentar ser felices, se nos olvida a veces que falta lo más importante para la igualdad social: La Humanidad. De su estudio y de cómo las personas se la niegan a otros grupos diferentes al propio así como de algunas de sus consecuencias psicosociales, se ocuparán los principales estudios empíricos de esta tesis doctoral.

2. ¿Qué es la Humanidad?

Para responder esta pregunta, debemos recurrir al pionero de los estudios sobre infrahumanización, el psicólogo belga Jacques-Philippe Leyens. En el año 2000, junto con sus colaboradores, realizó un estudio donde preguntó a los participantes (españoles y belgas) qué características eran para ellos genuinamente humanas. Los

resultados mostraron que las tres características que los sujetos mencionaron con mayor frecuencia y por este orden fueron: la inteligencia, los sentimientos y el lenguaje. Dado que ya existía un gran conjunto de trabajos en la literatura que demostraban cómo la inteligencia o la capacidad de razonar y el lenguaje son formas utilizadas para discriminar a los exogrupos (Crocker, Major y Steele, 1998; Giles y Coupland, 1991), los autores decidieron focalizarse en el estudio de los sentimientos que en menos ocasiones habían sido vinculados al estudio del prejuicio y de las relaciones intergrupales (Mackie y Smith, 2002). Esta elección además se veía respaldada por dos motivos adicionales. En primer lugar, los sentimientos (a diferencia de la inteligencia y el lenguaje) no dependen de las relaciones estructurales ni del status de los grupos (Jost y Banaji, 1994). En segundo lugar, los sentimientos no se ven afectados por las normas sociales de igualdad o equidad (Gaertner e Insko, 2001) lo que permitiría a los investigadores progresar en el estudio de la discriminación utilizando los sentimientos como un indicador de la humanidad no afectado por la deseabilidad social.

La investigación de Leyens y colaboradores (2000) puso de manifiesto que mientras que los participantes consideraron los sentimientos como características genuinamente humanas, las emociones, por el contrario, eran concebidas como aspectos compartidos por otras especies. Ese dato, hizo a los autores pensar que los participantes consideraban los sentimientos más descriptivos de la Humanidad que las emociones. Para poder comprobar si este indicio era cierto, Demoulin y cols. (2004) realizaron una nueva investigación con un gran número de participantes de diferentes nacionalidades (España, Bélgica y EEUU) en la que trataron de descubrir si las personas

eran capaces de distinguir entre sentimientos y emociones, y más importante aún, si los sentimientos podían además ser considerados como un índice de humanidad. Tal y como se hipotetizaba, los participantes fueron capaces de establecer una clara distinción entre los sentimientos y las emociones. De esta forma, algunas de las diferencias señaladas en el estudio, indicaron que los sentimientos eran percibidos como más duraderos; causados por motivos más internos; con mayor necesidad de recursos cognitivos y menos visibles e intensos que las emociones. Pero sin duda, el hallazgo más importante fue cómo las personas entienden que mientras que el término sentimiento hace referencia a emociones exclusivamente humanas (por ejemplo: culpa, esperanza o amor), las emociones no serían genuinamente humanas ya que además (a diferencia de los sentimientos) pueden ser experimentadas por los animales (e.g. miedo, enfado o alegría). La robustez de estos resultados se consolidó cuando los autores realizaron un segundo estudio, en el que constataron que los participantes no sólo consideraban que los sentimientos son exclusivos de los seres humanos de forma explícita, sino que también a nivel implícito asociaron los sentimientos en mayor medida a los humanos que las emociones.

Mientras que para el grupo de investigación de Leyens, los sentimientos se convirtieron en el principal índice de Humanidad, hace unos años, el psicólogo australiano Nick Haslam, Bastian, B., y Bissett (2004) propusieron otra forma diferente de concebir la Humanidad. Bajo esta propuesta, este grupo de investigación agrupa dos factores de Humanidad. Por un lado, el factor EH¹ (Human Uniqueness) haría

¹ Siguiendo a Rodríguez (2007) en su artículo “Nosotros somos humanos, los otros no. El estudio de la infrahumanización y la deshumanización en Psicología”, en la presente introducción se hará referencia al factor Human Uniqueness (HU) como rasgos exclusivamente humanos (EH) y al factor Human Nature (HN) como rasgos de la naturaleza humana (NH).

referencia a todas aquellas características que son exclusivamente humanas y no poseen otras especies. Por otro lado, el factor NH (Human Nature) englobaría aquellos rasgos propios de la esencia humana. Para desarrollar de forma empírica su modelo, los autores pidieron a los participantes que evaluaran en qué medida un listado de 80 rasgos de personalidad eran exclusivamente humanos (EH) y no compartidos por tanto con otras especies y cuáles eran aspectos de la naturaleza humana (NH). Los resultados mostraron que ambos factores de humanidad no correlacionaba entre sí, esto es que se percibían como independientes por parte de los sujetos. Según Haslam (2006) el factor EH está compuesto principalmente por los siguientes rasgos: civismo, refinamiento, sensibilidad moral, racionalidad y madurez, mientras que el factor NH lo compondrían características como: la emocionalidad, calidez, apertura mental, agencia o individualidad y la capacidad de profundizar. La investigación posterior ha encontrado cierto apoyo empírico en esta distinción entre EH y NH. Los resultados del estudio llevado a cabo por Haslam, Bain, Douge, Lee y Bastian (2005) puede ayudarnos a comprender un poco mejor algunas otras diferencias entre ambos factores. Así, según los autores, dado que los rasgos EH se desarrollan más tardíamente, pueden ser producto de la socialización, por tanto según los autores podrían diferir culturalmente. Por el contrario, los rasgos de NH serían universales y por tanto consistentes entre diferentes poblaciones y culturas. Pero sin duda, tal y como señalan los investigadores, la principal diferencia entre ambos factores como indicadores de Humanidad es que mientras que los primeros (EH) diferenciarían a las personas de los animales; los segundos (NH) distinguirían a los seres humanos de las máquinas o los robots.

Hasta ahora, se han recogido cómo los dos enfoques más importantes en el estudio de la deshumanización, las propuestas de Leyens y cols. (2000) por una parte, y Haslam y cols. (2004, 2005) por otra, definieron cuales eran los principales indicadores de la Humanidad: los sentimientos por un lado, y características EH y NH por otro. Veamos, pues, en los siguientes apartados, cómo dichos indicadores han sido capaces de dar cuenta de las dos formas principales de deshumanización en Psicología Social: La animalización y la mecanización de las personas y los grupos.

3. La animalización

Tal y como se enumeró en el primer apartado de esta introducción, existen numerosos ejemplos que ponen de manifiesto cómo las personas han deshumanizado a diferentes grupos a lo largo de la Historia. En muchas ocasiones, esta forma de percibir a las personas de forma menos humana, implicaba la visión de las mismas de forma animalizada. Así, por ejemplo, las personas con acondroplasia (enanismo) eran ridiculizadas en los circos, donde se les utilizaba para divertir a la gente (como los bufones en la Edad Media), de igual forma que en otras actuaciones eran los monos o los elefantes los encargados del mismo cometido. En otros momentos históricos, también ha sido posible observar la animalización de los individuos. Los genocidios de Alemania o Ruanda proporcionan claros ejemplos de dicho proceso, siendo posible observar como los judíos eran llamados “ratas” por los nazis mientras que los tutsis eran denominados cucarachas por los hutus (Bell-Fialkoff, 1996). De hecho, de acuerdo a Rodríguez (2007), comparando a los grupos étnicos, religiosos o políticos con las ratas o las cucarachas, se justificaba la acción genocida de los perpetradores.

Parece indudable que muchos grupos han sido y siguen siendo animalizados. Desde hace poco más que una década, la literatura sobre infrahumanización y deshumanización ha generado gran cantidad de investigación capaz de explicar los mecanismos psicológicos responsables de la animalización. Una primera mirada al diccionario de la Real Academia Española (2001) indica que “deshumanizar” significa “restar o privar de caracteres humanos a las personas que son deshumanizadas”. Dicha definición, nos hace preguntarnos inmediatamente qué rasgos o características niegan las personas a los grupos animalizados para ser percibidos de tal manera. Si bien la documentación histórica muestra que de lo que se trataba era sencillamente de presentar al otro grupo como menos humano (posiblemente porque carecía de “alma” o de intelecto, o porque se encontrara en un estadio evolutivo menor que el endogrupo), recientemente, en Psicología Social, han surgido dos respuestas básicas acerca de qué es lo que se les niega a los grupos animalizados.

Según la propuesta de Leyens y cols. (2001), las características que se niegan a los grupos animalizados (o infrahumanizados) serían los sentimientos. Como ya se dijo, los sentimientos son conceptualizados como emociones exclusivamente humanas y que no se comparten con los animales. Por tanto, desde la teoría de la infrahumanización (Leyens y cols., 2001, 2003) se sugiere que la infrahumanización (o animalización) se produciría cuando las personas reservan los sentimientos (tanto positivos como negativos) para su propio grupo y se los niegan al exogrupo, infrahumanizándolo. De esta forma, aunque las personas estarían reservando la humanidad para el endogrupo, este hecho no debería ser entendido en términos de favoritismo endogrupal, ya que también atribuyen más sentimientos negativos a su

propio grupo. Por el contrario, no cabría esperar diferencias en la atribución de emociones, ya que éstas son compartidas con los animales, entre el endogrupo y el exogrupo (Demoulin y cols. 2004; Leyens y cols. 2003). Como se expondrá en el apartado de las medidas de la deshumanización (apartado 5), este resultado ha sido replicado con diferentes metodologías y procedimientos, siendo además antecedente de numerosas consecuencias en las relaciones intergrupales (apartado 7).

Junto con los estudios de infrahumanización, el modelo de Haslam (2006) sobre deshumanización nos permite aumentar nuestros conocimientos sobre la animalización de los exogrupos. Para este autor, los rasgos de personalidad exclusivamente humanos (factor EH) no serían compartidos por otras especies, siendo reservados exclusivamente para los seres humanos. En un razonamiento similar al propuesto por Leyens y cols. (2001) con los sentimientos, Haslam (2006) propone que cuando las personas niegan los rasgos del factor EH a otros individuos estarían asemejándolos a los animales. Concretamente, la animalización se produciría cuando las personas piensan que otros individuos o grupos carecen de Civismo, Racionalidad, Madurez, Sensibilidad Moral o Refinamiento (ver figura 1). De esta forma, los grupos animalizados serían percibidos como seres incultos, carentes de civismo, brutos, sin moralidad y/o irracionales. Según el modelo, los grupos animalizados pueden provocar además emociones negativas como “asco y desprecio”. Sobre su comportamiento, se sugiere que además podría estar guiado por motivos, instintos, apetitos o deseos en mayor medida que el comportamiento de la gente que no es animalizada, ya que estos últimos tendrían una mayor racionalidad (Haslam, Loughnan, Kashima y Bain, 2008). Apoyando este modelo, los datos aportados por Gray, Gray, y

Wegner (2007) confirman que las personas creyeron que las capacidades en las que mayormente diferían los animales de los humanos eran la capacidad de autocontrol y de pensar, y también en la capacidad para ser morales, rasgos que como señalan Haslam y cols. (2008) coinciden con su definición del factor EH (que nos diferencia principalmente de los animales).

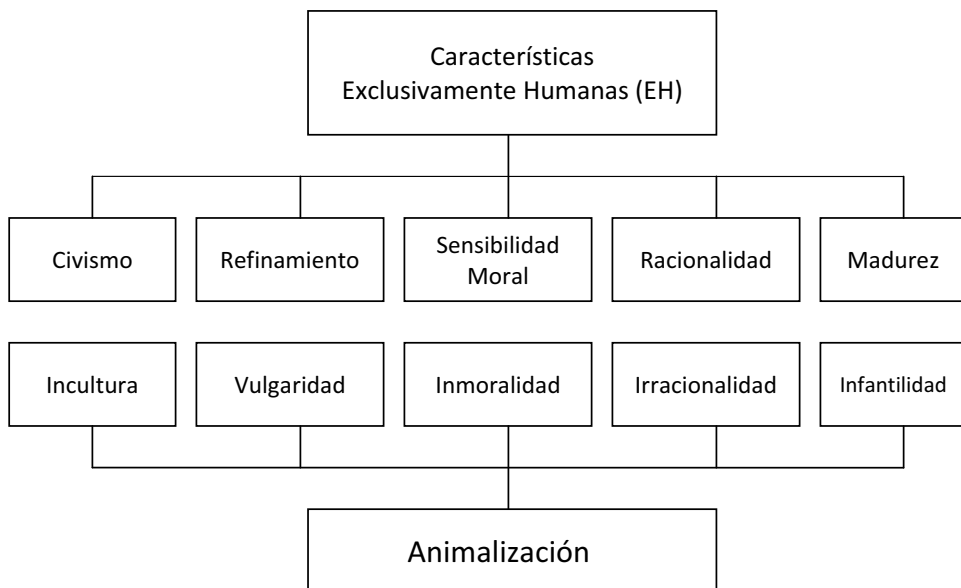


Figura 1. Representación de las características del Factor EH y de la Animalización (adaptado de Haslam, 2006).

Por último, es importante mencionar que de forma complementaria, un estudio reciente conducido por Loughnan, Haslam, y Kashima (2009) (véase el apartado 6 de esta introducción para más detalles) confirmó que la negación de estos rasgos correspondía a una imagen (o metáfora) animalizada de los grupos.

4. La mecanización

Sin duda, una de las potencialidades del modelo de Haslam (2006) se debe no sólo al diferente acercamiento al estudio de la animalización, mediante la negación de rasgos exclusivamente humanos (factor EH), sino también a la propuesta de una nueva forma de deshumanizar: la mecanización. Según este autor, cuando las personas mecanizan a otros grupos, en lugar de ser asemejados a los animales, son considerados como robots o máquinas. De esta forma, la mecanización sería fácilmente observable en el contexto de la industrialización o tecnología (Haslam, 2006); en el mundo de los negocios donde los ejecutivos son comparados con robots (Loughnan y Haslam, 2007), o en el ámbito de la medicina moderna (Haslam, 2006) donde los pacientes pueden ser deshumanizados por los médicos y pueden ser percibidos como máquinas compuestas por diferentes piezas que hay que reparar (Haque y Waytz, 2012).

En todos los ejemplos señalados la mecanización se produciría negando a los individuos aquellas características esencialmente humanas que el factor NH aporta (ver figura 2) del modelo de Haslam (2006). De esta forma, las personas mecanizadas son percibidas como seres fríos, rígidos, pasivos, superficiales ya que se les niega la capacidad de emocionarse, de ser cálidos o abiertos mentalmente, sin curiosidad ni imaginación, creyendo además que no pueden ser seres profundos. Al privarles de agencia, el autor del modelo también señala que su comportamiento puede ser explicado de forma no intencional. Además, dado que son desprovistos de individualidad, la mecanización de los individuos puede provocar indiferencia o falta de empatía por parte de quiénes los deshumanizan.

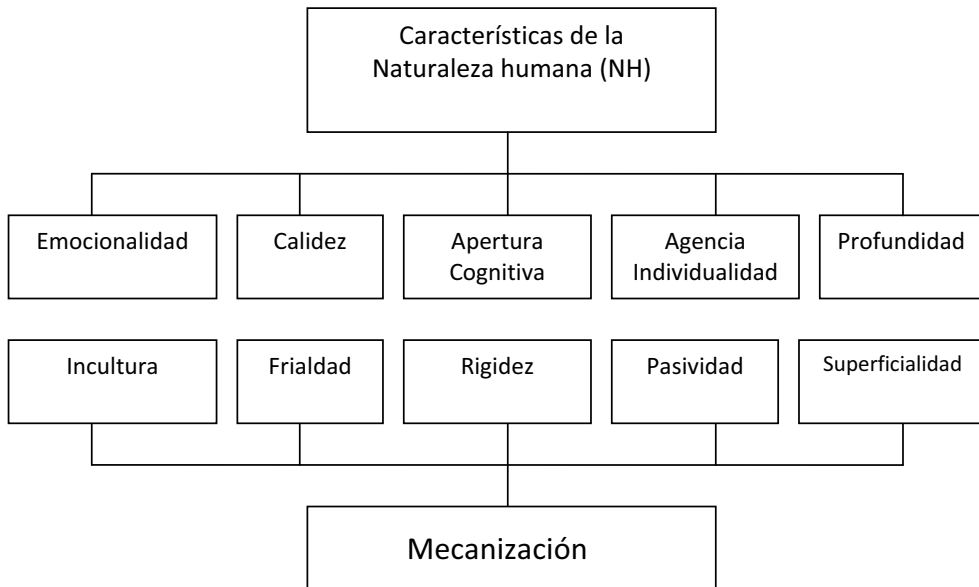


Figura 2. Representación de las características del Factor NH y de la Mecanización (adaptado de Haslam, 2006).

5. ¿Cómo medir la animalización y la mecanización?

Como se acaba de exponer en los apartados anteriores, animalización y mecanización son dos formas complementarias (Leyens, Demoulin, Vaes, Gaunt y Paladino, 2007) y necesarias para entender la deshumanización de los exogrupos. La robustez de dicho fenómeno, se debe en gran medida, a la cantidad de trabajos generados en el área que a través del uso de diferentes procedimientos y metodologías han aportado la evidencia empírica necesaria para consolidar el estudio de la deshumanización como una línea de investigación esencial en el campo del prejuicio y la discriminación. En este sentido, a pesar de ser una línea de trabajo relativamente joven en Psicología Social (los primeros trabajos de infrahumanización datan de los años 2000 y 2001), el gran número de estudios desarrollados sobre el

tema (alrededor de 100 según Vaes y cols., 2012), han utilizado diferentes medidas y procedimientos para poder aproximarnos al fenómeno de la animalización (o infrahumanización) y de la mecanización.

Fueron los primeros estudios sobre infrahumanización los que aportaron la primera medida para captar dicho fenómeno. Bajo su conceptualización de la infrahumanización como un proceso mediante el cual se atribuyen más sentimientos al endogrupo que al exogrupo, mientras que no se esperan diferencias en la atribución de emociones entre ambos grupos (Leyens y cols. 2001), los autores crearon un procedimiento para poder probar sus hipótesis. De esta forma, en 2001, Leyens y cols. presentaron a los participantes de un estudio (estudiantes de la Universidad de la Laguna y de la Universidad de Granada), un listado de sentimientos y emociones (con valencia positiva y negativa) junto con palabras de relleno (relacionadas con sociabilidad y competencia). La tarea de los sujetos consistió en seleccionar aproximadamente diez rasgos que bajo su punto de vista definían al grupo presentado. Dado que se trató de un diseño entre-sujetos, la mitad de los participantes evaluaron al endogrupo (canarios y peninsulares dependiendo de su origen) y la mitad restante al exogrupo (peninsulares y canarios respectivamente). Tal y como se esperaba, los resultados mostraron que los participantes seleccionaron más sentimientos tanto positivos como negativos para el endogrupo que para el exogrupo (independientemente del origen de los participantes: La Laguna o Granada). Sin embargo los participantes no atribuyeron diferencialmente las emociones al endogrupo o al exogrupo.

Es importante señalar que resultados similares han sido obtenidos utilizando el mismo procedimiento pero con un diseño intrasujeto (Cortes y cols. 2005). En este caso concreto, los autores pidieron a los sujetos que describieran al endogrupo ("Walloons" o Belgas de habla francesa) y a tres exogrupos que diferían en el grado de familiaridad con el endogrupo (flamencos, parisinos y habitantes de Praga). De acuerdo con Cortés y cols. (2005) cabía esperar que a medida que el grupo resultase menos familiar para el endogrupo (por ejemplo los habitantes de Praga) el efecto de infrahumanización fuese mayor, en contraposición a lo que ocurriría con grupos más cercanos a los participantes como los flamencos o parisinos. De forma contraria a las predicciones planteadas, los resultados encontraron que el grupo más familiar para los participantes (los flamencos) fue el más infrahumanizado, y por tanto se le atribuyeron menos sentimientos que al endogrupo e igual proporción de emociones que a ellos. Según los autores, es posible explicar este dato en términos de relevancia del exogrupo para los sujetos. Así, mientras que el grupo flamenco es un exogrupo importante para los participantes, los habitantes de Praga podían no serlo. Y por tanto, tal y como sugerían los autores, la relevancia de los exogrupos podía ser una variable moderadora del efecto de la infrahumanización.

Además de las medidas explícitas que acabamos de describir, otros investigadores han utilizado procedimientos implícitos para analizar atribución diferencial de emociones y sentimientos a los grupos. Paladino y cols. (2002) usó una adaptación del Test de Asociación Implícita (IAT, Greenwald y Banaji, 1995; Greenwald, McGhee, y Schwartz, 1998) para comprobar si las personas tienen más fuertemente asociados los sentimientos al endogrupo que al exogrupo. Concretamente, Paladino y

colaboradores (2002) pidieron a los participantes que clasificaran una serie de palabras que aparecían en la pantalla de un ordenador tan rápido como les fuera posible. Tras varios ensayos de práctica, se les presentó dos tipos de tareas, una congruente y otra incongruente. En la tarea congruente, los participantes tenían que utilizar la misma tecla para contestar cuando aparecían en la pantalla nombres propios del endogrupo (Franceses o Españoles) y sentimientos y otra tecla diferente cuando aparecían nombres de un exogrupo (Norte Africanos o Flamencos), y emociones. En la tarea incongruente, se invirtió el patrón de respuesta: los participantes utilizaron la misma tecla para responder a nombres del endogrupo y las emociones, y otra diferente para designar los nombres del exogrupo y los sentimientos. La diferencia entre los tiempos de reacción empleados en la tarea congruente y en la tarea incongruente se utilizó como índice de infrahumanización. Así, los resultados mostraron que los tiempos de reacción en la realización de la tarea congruente (asociación entre endogrupo y sentimientos) fueron significativamente menores que en la tarea incongruente (asociación entre exogrupo y sentimientos). De esta forma se observó que los participantes fueron más rápidos en asociar nombres de su grupo (vs. nombres del exogrupo) con los sentimientos. Además, también se observó que asociaban más rápidamente los nombres del exogrupo (vs. endogrupo) con las emociones. Estudios posteriores realizados por Boccato, Cortes, Demoulin y Leyens (2007) han utilizado de nuevo el IAT como forma de medida de la infrahumanización, mostrando cómo los participantes sus participantes fueron particularmente rápidos asociando el endogrupo con los sentimientos (vs. el exogrupo). Sin embargo, a diferencia de los estudios de Paladino y cols. (2002), Boccato y cols. (2007) no encontraron diferencias en la

asociación del endogrupo y del exogrupo con las emociones. En nuestra opinión, la relevancia de estos trabajos con medidas implícitas se debe a la constatación de la existencia de una asociación automática más fuerte entre el endogrupo y los sentimientos que para el exogrupo.

Aunque tal y como recuerda Vaes y cols. (2012) en su trabajo de revisión, la medida de sentimientos y emociones ha sido utilizada en una amplia variedad de investigaciones con diferentes grupos (Demoulin y cols. 2009) y en diferentes contextos (Rodríguez Pérez, Delgado-Rodríguez, Betancor-Rodríguez, Leyens y Vaes, 2011), es importante destacar cómo otros autores han medido la animalización de los exogrupos utilizando atributos diferentes. Este es el caso de Viki y cols., (2006). Estos autores pidieron a los participantes que asociaran palabras de animales (e.g., animal doméstico, vida salvaje) o humanos (e.g., gente, civil, soltero) con el endogrupo (Ingleses) y con diferentes exogrupos (Alemanes, Italianos, Franceses). Para probar estas ideas, realizaron cuatro estudios utilizando diferentes procedimientos. Así, en el estudio 1, usando el Test de Asociación Implícita los autores mostraron que los participantes fueron más rápidos asociando las palabras de humanos con el endogrupo y también las palabras de humanos con el exogrupo (vs. palabras de humanos con el exogrupo; palabras de animales con el endogrupo). En un segundo estudio, en lugar de usar una tarea implícita, se utilizó una tarea de papel y lápiz en la que los participantes debían unir nombres del endogrupo y del exogrupo con palabras de humanos o animales. Se encontró una mayor asociación entre los nombres del endogrupo (vs. exogrupo) con palabras de humanos. Además, de forma similar, en el cuarto estudio, los autores repitieron el procedimiento del segundo estudio pero en este caso la mitad

de las palabras de animales y humanos fueron positivas y la mitad restante negativas. Se encontró que la valencia de las palabras no afectó los resultados, o dicho de otro modo, los participantes unieron en mayor medida los nombres del endogrupo con palabras de humanos (vs. exogrupo) independientemente de la valencia de las palabras. Por último, en el estudio que completaba la serie de cuatro experimentos, los investigadores pidieron a los participantes que seleccionaran de una lista formada por palabras de animales y de humanos, aquellas que según su opinión, mejor caracterizaban al endogrupo y al exogrupo (alemanes en el estudio 3a e italianos en el estudio 3b). De nuevo, se evidenció cómo los participantes seleccionaron más palabras de humanos para el endogrupo en comparación con el exogrupo.

Tal y como se desprende de las medidas descritas en esta sección, existen varias formas para captar la animalización de los individuos. Sin embargo, es importante describir también de qué forma la literatura se ha aproximado al fenómeno de la mecanización. Hasta hoy, la medida tradicional que recoge la atribución diferencial de sentimientos y emociones se ha restringido al estudio de la infrahumanización, siendo necesarias otras medidas para poder captar no sólo cuando los individuos son animalizados sino también cuando son mecanizados. En este sentido, en la mayoría de los trabajos de Haslam y su grupo de investigación -Haslam y cols. (2005); Haslam y cols., (2008) para una revisión- se han utilizado un listado de rasgos de personalidad para evaluar ambas formas de deshumanización. Sin duda, fueron clave los estudios realizados por Haslam y cols. (2005), en los que no se encontró correlación entre los rasgos incluidos en el factor EH y los rasgos incluidos en el factor NH y por tanto, dichos factores se consideraron independientes. De esta

forma, para poder medir la animalización y mecanización tomando ambos factores como índices diferentes de humanidad, se debería evaluar en qué medida las personas niegan los rasgos incluidos en dichos factores a los grupos evaluados. Así, una baja atribución de rasgos de EH indicaría que el grupo está siendo percibido de forma animalizada (irracionales, brutos, incívicos, inmaduros, etc.) mientras que una baja atribución de rasgos de NH informaría de una visión mecanizada del grupo (frios, calculadores, rígidos, inflexibles). Como ejemplo, Bain, Park, Kwok y Haslam (2009), realizaron una investigación para analizar la atribución de EH y HU entre estudiantes australianos y chinos. Para ello, dividieron su experimento (estudio 1) en dos partes. En primer lugar, presentaron a sus participantes un listado con 48 características (24 rasgos de personalidad extraídos del trabajo de Haslam y colaboradores, 2005), en la que los participantes debían indicar en qué medida esos rasgos describían a los estudiantes australianos y chinos de su universidad. En segundo lugar, los participantes evaluaron los rasgos presentados anteriormente en EH (¿En qué medida las siguientes características son únicamente humanas, o por el contrario también las pueden experimentar otras especies?) y en NH (¿En qué medida estas características son aspectos de la naturaleza humana?).

Las respuestas de los sujetos en esta segunda parte sirvieron a los investigadores para crear los índices de humanidad (garantizando que efectivamente los rasgos incluidos en cada categoría medían como se pretendían los factores en los que iban incluidos). De esta forma, se seleccionaron los ocho rasgos más representativos de ambas categorías: EH y NH (para más detalles del proceso de selección de rasgos, ver Bain y cols., 2009, p. 792). Una vez creados los índices, los

autores procedieron a analizar la diferente atribución de los mismos a los grupos evaluados. Los resultados mostraron que los Australianos deshumanizaron a los chinos solo en la dimensión NH, percibiéndolos por tanto de forma mecanizada, mientras que los estudiantes chinos animalizaron a los australianos, negándoles los rasgos incluidos en el factor EH.

Por último es interesante señalar que los factores EH y NH también han sido utilizados en medidas implícitas de la deshumanización (Loughnan y cols., 2007). Así, utilizando la tarea implícita de "Go No-Go" (Nosek y Banaji, 2001), Loughnan y cols. (2007) mostraron que los artistas se asociaron con los rasgos NH mientras que los ejecutivos se asociaron con el factor EH. Pero de forma más interesante, los autores también evidenciaron que mientras que la ausencia de rasgos EH llevó a los participantes a asociar el grupo de los artistas con los animales, los ejecutivos (o gente de negocios) fueron vistos como carentes de rasgos NH y por tanto asociados más fácilmente con autómatas.

6. El enfoque de la atribución de rasgos y el enfoque de la metáfora.

Tal y como se señaló en el apartado anterior, con poco más de diez años de investigación en Psicología Social, la literatura sobre deshumanización cuenta a día de hoy con numerosos trabajos englobados en el estudio sobre el prejuicio y la discriminación. Recientemente se ha sugerido (Loughnan y cols. 2009) cómo dichos trabajos pueden ser agrupados en dos grandes enfoques: el enfoque de la atribución de rasgos y el enfoque de la metáfora, en función de la forma de aproximación al fenómeno. De esta forma, aquellos estudios que han utilizado la atribución de diferentes rasgos o atributos para conocer si los grupos deshumanizan a los exogrupos

formarían parte del primer enfoque, mientras que los trabajos que han tratado de medir la deshumanización haciendo uso de metáforas o imágenes para ver en qué medida se asocian con los animales y las máquinas, quedarían recogidos en el segundo enfoque.

Bajo el enfoque de la atribución de rasgos, quedarían englobados tanto los trabajos de Leyens y cols. (ver Leyens y cols. 2007 para una revisión) como los de Haslam y cols. (ver Haslam y cols. 2008 para una revisión) Ambas perspectivas, en primer lugar, exploran qué rasgos definen la humanidad (sentimientos, rasgos exclusivamente humanos, rasgos de la naturaleza humana) y en segundo lugar, evalúan en qué medida son atribuidos a los diferentes grupos evaluados. Por ello, se consideran enfoques basados en la atribución de rasgos, ya que asumen que la deshumanización ocurriría cuando las personas niegan ciertas características a los grupos.

Por el contrario, el enfoque de la metáfora, tiene una orientación distinta. Los estudios englobados en este enfoque, exploran el grado en el que los grupos son directamente comparados con entidades no humanas (Loughnan y cols., 2009) (e.g. animales o robots). Como ejemplo, podemos citar los estudios de Viki y cols. (2006) que se incluirían dentro de este enfoque ya que utilizando palabras de humanos y animales, los autores prueban si los participantes asociaban de forma directa el endogrupo y los exogrupos evaluados con dichos estímulos. Al igual que el estudio mencionado, es importante subrayar que tal y como señala Loughnan y cols., (2009) la mayoría de los estudios incluidos en el enfoque de la metáfora se han centrado en el estudio de la animalización. Otro ejemplo sería el estudio de Pérez, Moscovi y Chulvi

(2007) quienes encontraron que al grupo gitano se le atribuyeron más características animales, especialmente aquellas que diferenciaban a los animales salvajes de los animales domésticos. En la misma línea, los resultados encontrados por Goff, Eberhardt, Williams y Jackson (2008), mostraron una asociación implícita entre los afroamericanos y los simios.

Tratando de entender la relación entre ambos enfoques, el de la atribución de rasgos y el enfoque de la metáfora, Loughnan y cols. (2009) llevaron a cabo dos estudios. En primer lugar, se puso de manifiesto que: cuando los participantes aprendían que el exogrupo era deshumanizado de forma metafórica (se presentaba un grupo ficticio directamente asociado a animales/máquinas), eran capaces de inferir el factor de humanidad que les faltaba a cada uno de los grupos. Así, por ejemplo, los participantes atribuyeron menos EH cuando previamente se les había presentado un grupo con una imagen animalizada. En segundo lugar y de forma complementaria, se evidenció cómo el proceso inverso también ocurría. Cuando se presentaba a los participantes un grupo carente de rasgos incluidos en uno de los factores de humanidad: EH y NH, los participantes percibían al grupo de forma animalizada/mecanizada respectivamente. Por tanto, tras observar los resultados de ambos estudios, los autores concluyen que ambos enfoques están estrechamente relacionados.

7. Las consecuencias de la animalización y la mecanización

Una vez establecidas las principales diferencias entre ambos enfoques, lo que parece inevitable es preguntarse cuáles son las consecuencias de ambas formas de deshumanización. Coincidimos totalmente con el profesor Vaes y cols. (2012) cuando

subrayan que la deshumanización es un fenómeno generalizado que ocurre en una gran variedad de contextos tanto interpersonales como intergrupales. De hecho, diversas investigaciones muestran cómo puede observarse entre grupos entre los que ni siquiera existe conflicto (Rohmann, Niedenthal, Brauer, Castano, y Leyens, 2009), que no difieren en estatus (Rohmann y cols. 2009) o difieren entre ellos (Leyens y cols. 2001). Además, también es notable señalar como la infrahumanización ya se ha observado en niños con 6-7 años de edad (Martin, Bennett, y Murray, 2008).

Es por ello que bajo nuestro punto de vista, la importancia de dicho fenómeno reside en el impacto que tiene en la forma en la que los integrantes de los diversos grupos sociales se relacionan. En este sentido, parte de la investigación en deshumanización se ha centrado en el análisis de las consecuencias de dicho fenómeno en la conducta humana. Así, por ejemplo, algunos hallazgos indican que la infrahumanización tiene efectos sobre la conducta de ayuda. Por ejemplo, Vaes, Paladino y Leyens (2002) utilizaron el paradigma del “e.mail perdido” en uno de sus trabajos. En la tarea experimental utilizada en dicho procedimiento, los experimentadores pidieron que leyeran un e.mail facilitado por los experimentadores. La tarea de los sujetos era imaginar que lo habían recibido en su cuenta de correo y responder una serie de preguntas al respecto. Los resultados mostraron que aquellos mensajes que comenzaban expresando sentimientos provocaron más intenciones de ayudar a la persona que enviaba el mensaje (estudio 1) y respuestas más amables (estudio 2) por parte de los participantes que cuando que cuando el mensaje comenzaba expresando emociones.

En relación a la conducta de ayuda, Cuddy, Rock y Norton (2007), también mostraron cómo en situaciones reales, como la ocurrida con la catástrofe ocasionada por el huracán Katrina, los participantes que más deshumanizaron a las víctimas de la catástrofe fueron los que menos ayuda informaron estar dispuestos a ofrecer, o dicho de otra forma, los participantes que más sentimientos atribuyeron a las víctimas, fueron los que se ofrecieron en mayor medida como voluntarios para ayudarles. En la misma línea, en el análisis de las consecuencias de la deshumanización sobre la empatía y haciendo uso también de situaciones reales (conflictos de Bosnia-Herzegovina y Chile -contra los indígenas-), Cehajic, Brown, y Gonzalez (2009) pusieron de manifiesto la existencia de una relación negativa entre la deshumanización del exogrupo y la empatía experimentada hacia las víctimas.

Además de la ayuda y la empatía, otros investigadores se han ocupado de estudiar el impacto de la deshumanización en variables como la credibilidad política (Vaes, Paladino, y Magagnotti, 2011) evidenciando cómo aquellos candidatos del endogrupo (misma afiliación política) cuyos eslóganes políticos expresaban más sentimientos provocaban más reacciones de conformidad que cuando era el candidato de la oposición (exogrupo) quién presentaba eslóganes en los que se expresaban sentimientos. Sin embargo, cuando los eslóganes contenían emociones no se encontraron diferencias en las reacciones de conformidad entre el candidato del endogrupo y del exogrupo. Estos resultados son consistentes con los mostrados por Vaes, Paladino, Castelli, Leyens y Giovanazzi (2003) en los que se mostró que el uso de sentimientos por parte de un miembro del endogrupo provocó más conformidad que cuando era una persona la del exogrupo la que expresaba su opinión en los mismos

términos (no produciéndose diferencias entre el endogrupo y el exogrupo cuando se trataba de emociones, estudios 2 y 3). También el uso de sentimientos provocó que los participantes se mostraran más proclives a adoptar la perspectiva de los miembros del endogrupo que del exogrupo (Vaes, Paladino, y Leyens, 2004).

El impacto de los sentimientos también ha sido analizado en relación a las conductas de acercamiento y evitación (Vaes et al., 2003, estudio 4), mostrando que describir al endogrupo y al exogrupo expresándolos, facilita las respuestas de acercamiento de los sujetos al endogrupo, mientras que los mismos sentimientos provocaron la evitación del exogrupo en mayor medida que cuando se trataba del endogrupo (Vaes y cols. 2003). Para los autores, los datos aportados sugieren de nuevo la importancia de los sentimientos en las conductas de discriminación a los exogrupos.

Como puede observarse, gran parte de la investigación sobre las consecuencias de la infrahumanización han evidenciado el impacto de los sentimientos (o emociones únicamente humanas) sobre diversas variables conductuales. Sin embargo, investigaciones más recientes han adoptado un enfoque diferente para analizar las consecuencias de la animalización desde otra perspectiva (Haslam, Loughnan, y Sun, 2011). Así, Haslam y cols. (2011) se centraron en el estudio de los efectos de las metáforas sobre la animalización en las relaciones intergrupales. Tras analizar un amplio grupo de metáforas, los autores pusieron de manifiesto como las metáforas resultaban más ofensivas en la medida en que implicaban la visión menos humana del individuo. Además también se observó que el contexto también pareció tener un papel importante en la evaluación de las mismas, ya que no siempre resultaron ofensivas. De esta forma, cuando se utilizaron metáforas para describir a miembros del

propio grupo de forma jocosa, los participantes no consideraron que negaban la humanidad del individuo. En esta línea, los resultados encontrados por Saminaden, Loughnan y Haslam (2010) también mostraron que algunos grupos implícitamente asociados con los animales (gente primitiva o grupos tradicionales) no siempre eran evaluados de forma negativa. De acuerdo con Haslam y cols. (2012) esta aparente evaluación positiva de los grupos primitivos o tradicionales, podrían ser indicadores de un paternalismo benevolente (similar al sexismo benevolente con las mujeres) dado que dichos grupos pueden ser considerados como grupos que necesitan protección y ayuda para poder desarrollarse.

Por otro lado, no menos atención merecen las consecuencias de la mecanización. En nuestra opinión, debido a que su estudio comenzó recientemente, se necesita más investigación para poder aumentar el conocimiento sobre el alcance de las mismas. Algunos de los trabajos al respecto, sugieren que el campo de la medicina moderna es un contexto donde las consecuencias de la mecanización de los individuos pueden ser observadas con relativa frecuencia. Según las observaciones de Haque y cols. (2012), el contexto hospitalario facilita que las personas sean deshumanizadas y tratadas como sistemas mecánicos dañados que necesitan reparación. Como resultado, los pacientes a menudo son denominados con números (e.g. "paciente de la habitación 313") o por las enfermedades y síntomas que padecen (e.g. mujer, 36 años, no alérgica, padece diabetes, etc.). De esta forma, en opinión de los autores, los pacientes pueden ser percibidos como cuerpos sin identidad en busca de ayuda, más que como agentes individuales que requieren empatía.

En línea con las ideas de Haque y cols. (2012), Bastian, Laham, Wilson, Haslam y Koval (2011), demostraron que una mayor atribución de rasgos NH (exclusivamente humanos) hacía que los individuos recibieran más elogios por sus actos morales y además se percibieran como individuos que necesitan protección ante actos inmorales. Por el contrario, la negación de los rasgos HN implicaba que los seres mecanizados fuesen percibidos con menor capacidad para contribuir en pro de la comunidad y consecuentemente menos merecedores de trato moral. Dado que esta investigación no solo se centró en las consecuencias de la mecanización, los autores también señalaron que la animalización tenía consecuencias diferentes. Concretamente, se observó que los seres percibidos de forma animalizada (baja atribución de características exclusivamente humanas (EH) fueron percibidos como incapaces de inhibir comportamientos inmorales y por tanto, menos merecedores de castigo en caso de actuaciones inmorales por su parte.

Por último, para finalizar este apartado sobre las consecuencias de la deshumanización, es indispensable, citar dos trabajos recientes que exploran nuevas líneas de investigación. La investigación de Bastian y Haslam (2010) fue la primera en examinar la deshumanización desde el punto de vista de las víctimas de la misma, y puso de manifiesto cómo las personas que sufren aislamiento social se perciben a sí mismas y a personas como ellas de forma menos humana. Concretamente, se observó que las víctimas del ostracismo tenían una visión mecanizada sobre sí mismas, percibiéndose como seres emocionalmente inertes, fríos y rígidos. Adicionalmente, los datos de dicho estudio también constataron como además los participantes se sentían deshumanizados de esta forma por los demás.

En segundo lugar, el trabajo de Bastian y Haslam (2011) también abordó el estudio de las consecuencias de la animalización y la mecanización desde el punto de vista de las personas que lo sufren. Para ello, se centraron en el estudio de un conjunto de formas sutiles de maltrato o micro-agresiones, ya que según los autores aunque en nuestro día a día estos comportamientos pueden pasar desapercibidos (e.g. Ser tratado con desprecio, condescendentemente, humillado, etc.) sus efectos pueden ser severos. Los resultados de su estudio mostraron que la animalización (percibirse incompetente, incívico, poco sofisticado) llevó a los participantes a sentir emociones de vergüenza y culpa. Mientras que la mecanización tuvo otros efectos, ya que los participantes informaron sentirse tristes y enfadados con los agresores. Además, la percepción de los agresores como objetos o máquinas incapaces de sentir, también afectó a las cogniciones de los sujetos (e.g., informaron tener mayores dificultades para pensar con claridad).

En síntesis, tal y como se ha puesto de manifiesto en este último apartado, la deshumanización es un fenómeno muy presente en nuestras vidas con importantes y diversas consecuencias. Dado que el estudio de la mecanización ha surgido hace menos de diez años, existen aún pocos estudios que comparen directamente los efectos de la mecanización y la animalización como dos formas diferentes de deshumanización. Dada la importancia de su estudio (Bastian y cols., 2011), algunos de los objetivos de la tesis doctoral que se presenta, tal y como se detallará a continuación, pretenderán abordar el análisis de dichas consecuencias en las relaciones intergrupales.

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Chapter 2: AIMS OF THE RESEARCH

The main goal of this thesis was to provide further empirical evidence to enable a better understanding of the dehumanization process. Specifically, this thesis focused on an analysis of two different forms of considering people as not being fully human: animalistic and mechanistic dehumanization.

For the past thirteen years (ever since the first studies on infrahumanization were published), a large body of research studies on this phenomenon has emerged. The two most widely known approaches are to be found in the line of research initiated by Leyens and colleagues in 2001, and in the work that followed Haslam's model in 2006. Given the importance of these two approaches in Dehumanization literature, we began our work by discerning how the two main approaches relate to each other.

As described in the introduction, Leyens et al. developed extensive research showing how people consider individuals from their ingroup as being more human than members of outgroups (Leyens et al., 2001; 2002). The authors focused on the attribution of primary emotions (shared with animals) and secondary (uniquely human) emotions to conceptualize the infrahumanization process. However, whereas infrahumanization research has focused mainly on the attribution of uniquely human emotions to different outgroups (Paladino & Vaes, 2009; Vaes & Paladino, 2010), the two-dimensional model of humanness has analysed the assignment of both human nature and uniquely human traits to the outgroups (Haslam 2006; Haslam, Loughnan, Kashima & Bain, 2008). Thus, these two approaches have used different human attributes to measure dehumanization. However, to the best of our knowledge, no

research to date has examined the similarities and differences between these two theoretical positions, leaving an important question as yet unanswered: How are the two senses of humanness, as portrayed in each of the aforementioned approaches, related? Bearing this question in mind, we first focused on finding out whether secondary emotions were related exclusively to the Human Uniqueness factor (HU, responsible for animalistic dehumanization), or whether, on the contrary, they were also linked to the Human Nature factor (HN, indicative of mechanistic dehumanization).

In the first group of studies, we aimed at determining to what extent the attribution of primary and secondary emotions might capture both animalistic (low Human Uniqueness) and mechanistic dehumanization (low Human Nature) (Study 1). Complementarily, by reversing the design developed in the first study, in Study 2 we set a second goal, which was to investigate whether both HU and/or HN dimensions might also capture infrahumanization (low Secondary Emotions).

As mentioned in the introduction, Loughnan, Haslam, and Hasmina (2009) recently proposed a new way of categorizing research conducted under the dehumanization umbrella. Specifically, they made a distinction between an Attribute-based approach (focusing on which human features are denied to the outgroups), and a Metaphor-based Approach (focusing on the likening of outgroups to non-human entities). While different scales have been developed from the Attribute-based Approach to capture animalistic dehumanization (e.g. primary and secondary emotions scale, human uniqueness factor) and mechanistic dehumanization (e.g. human nature), the Metaphor-based Approach has only been used in research on animalistic

dehumanization. Given that we felt it was important to research the machine-likening form of dehumanization, the second general aim of the thesis was to create a new task to capture both animalistic and mechanistic dehumanization from the metaphor-based perspective.

In the second set of four studies included in this thesis, we developed a paper and pencil task that allowed us to ascertain which form of dehumanization was shaping respondents' perception of different outgroups. Following the procedure proposed by Viki et al. (2006), Studies 3 and 4 show a new measure in which participants had to select human-, animal-, and machine-related words that best defined a number of surnames belonging to two different outgroups (Gypsies and German people). In order to take this one step further, Studies 5 and 6 were carried out to test the same ideas, but using an implicit methodology. Thus, we were able to determine whether the same results would be obtained as in Studies 3 and 4, when using an implicit task, i.e. whether some outgroups (e.g. Gypsies) were automatically associated with animal-related words, and others (e.g. German people) with machine-related words (whereas the ingroup, comprising non-Gypsies and Spaniards, was associated with human-related words).

Once the measure had been created in Spanish, we proposed to build a similar measure in English, which is a more frequently used language for research in Social Psychology. We followed a similar procedure to that used in Studies 3 and 4, but using a US sample. Furthermore, by using this metaphor-based measure, we hoped to determine whether people (general population) associated different groups with more animal- vs. machine-related words. The results would also allow us to find out how

different groups are more animal- or machine- likened, as a function of their scores on the animalistically and mechanistically dehumanized dimensions (Studies 7 and 8).

The last set of studies included in the current work refers to the consequences of the different forms of dehumanization. It seems crucial when researching on dehumanization to understand its consequences on intergroup relations. Bearing this in mind, this dissertation makes an attempt to progress in the literature on the consequences of dehumanization.

Regarding the latter objective, it is proposed that, since animalistic and mechanistic dehumanization imply the denial of a different sense of humanness, the effects of both forms of dehumanization may also be different. Therefore, across several experiments, we tried to test this basic premise. Particularly, the goal of Study 8 was to compare the two forms of dehumanization in terms of prejudicial attitudes, emotions and behavioural tendencies toward the different outgroups perceived as being more animal- or machine-like.

Along these lines, but analyzing other consequences of dehumanization, Study 9 was aimed at focusing on interpersonal closeness, i.e. participants' intention to interact with dehumanized people, by exploring whether the animalistically and mechanistically dehumanized groups were preferred for contact in different settings. Complementarily, and related to such preferences, we also examined social perception (Warmth and Competence) of dehumanized groups. Study 10 was aimed at obtaining a more detailed analysis of the social perception of animalistically and mechanistically dehumanized groups. The novelty in this case was to analyse how successful group members were perceived to be in the different settings analysed, when using the

interpersonal closeness measure. These findings would allow us to understand how useful animalistically and mechanistically dehumanized groups are perceived in certain spheres. We then conducted a final study in order to show which psychological process explain the preferences for interaction with dehumanized groups. Accordingly, Study 11 verified whether objectification was the psychological process that might explain the circumstances in which participants would choose to be closer to, or more distant from, dehumanized people.

Chapter 3: EMPIRICAL STUDIES

Attributing humanness to groups: How do denials of secondary emotions, human uniqueness and human nature relate?²

(The studies described in this article are included in the doctoral thesis as Studies 1 and 2)

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Abstract

Several models of dehumanization have been proposed recently, but their relationship has hardly been tested empirically. Two studies were conducted to examine the link between the two-dimensional model of humanness proposed by Haslam (2006), that differentiates between animalistic and mechanistic dehumanization, and the infrahumanization approach of Leyens and colleagues (2001) who measured human perceptions through the attribution of primary and secondary emotions. In Study 1 the humanity of three experimentally created groups (Humanized, Animalized and Mechanized) was manipulated granting or denying them Human Nature (HN) and/or Human Uniqueness (HU) traits. The attribution of primary and secondary emotions to these different groups was measured. As expected, participants attributed more secondary emotions to the humanized Group compared to both dehumanized groups. Importantly, both animalized and mechanized groups were attributed similar amounts of secondary emotions. In Study 2, fictitious groups were described with the capacity to express typical secondary emotions or not and the attribution of HN and HU traits was measured. Results showed that the infrahumanized relative to the humanized group was denied both HU (as occurs in animalistic dehumanization) and HN traits (as is typical in mechanistic dehumanization). This research is the first to put together both leading approaches and its results highlight the importance of considering the common aspects of both in understanding processes of dehumanization.

Keywords: *infrahumanization, animalistic dehumanization, mechanistic dehumanization, secondary emotions, human nature, human uniqueness, intergroup relations.*

During the last decade there has been a surge of interest in humanness as a dimension of social judgment in both interpersonal and intergroup relations. An ever-increasing amount of research has shown that people scale their fellow human beings on the fact that they are completely human. The recurrent finding has been that the self (Haslam, Bain, Douge, Lee & Bastian, 2005) or the ingroup (Leyens, Demoulin, Vaes, Gaunt & Paladino, 2007) are seen as more human than others. Within this research tradition two main approaches have been developed: Infracommunication theory that was introduced by Leyens and colleagues (see Leyens et al., 2003; Leyens et al., 2007; for reviews), and Haslam's two-dimensional model of humanness that differentiates between animalistic and mechanistic dehumanization (Haslam 2006; Haslam, Loughnan, Kashima & Bain, 2008). While infracommunication research has focused mainly on the attribution of uniquely human, secondary emotions to different outgroups, the two-dimensional model of humanness has analyzed the assignment of human nature and uniquely human traits in both intergroup and interpersonal relations. No research to date has looked at the intersection between both of these approaches obscuring the relevance of the denial of one human characteristic might have on the humanness dimensions that are emphasized in the other model. Given that both models are quite often used to show similar phenomenon, it is of most importance to empirically verify to what extent they relate with one another. This is exactly what the present research aims to do.

Infracommunication theory

Leyens and colleagues (2000) defined infracommunication as people's tendency to perceive their ingroup as more human than the outgroup. They focused on the

attribution of different emotions as a subtle way of dehumanization (Leyens et al., 2000, 2003, 2007). Along these lines, the distinction between primary and secondary emotions is crucial. Demoulin and colleagues (2004) used the terms *primary* and *secondary emotions* (e.g., Ekman, 1992) to refer respectively to emotions that humans share with animals (e.g., fear, anger) and those that are uniquely human (e.g., sorrow, hope). Using these emotions, infrahumanization researchers tested their hypotheses in different studies showing that people attribute more secondary emotions to their ingroup than to the outgroup (Leyens et al., 2007; Leyens et al., 2001; Paladino et al., 2002). Moreover, this effect was obtained for both positive and negative secondary emotions revealing that the infrahumanization effect was different from ingroup favoritism.

Two-dimensional model of humanness

Parallel to infrahumanization research, studies following Haslam's two-dimensional model of humanness (Haslam, 2006; Haslam et al., 2008) examine dehumanization as the denial of particular human attributes. *Human Uniqueness* refers to those attributes that distinguish humans from animals. This dimension of humanness includes traits like civility, moral sensibility and rationality. People who deny uniquely human traits to the outgroup perceive outgroup members as likening to animals, a process called *animalistic dehumanization* (Haslam, 2006). Viki and colleagues (2006) investigated the association of ingroups and several outgroups with uniquely human and animal traits and found that outgroup members were considered more animal-like, attributing them less uniquely human traits than ingroup members

According to Haslam (2006) people not only deny Human Uniqueness traits to the outgroup but also *Human Nature* characteristics, that is, those attributes that are seen as typically human (e.g., emotional responsiveness, interpersonal warmth, and depth). People who lack human nature traits are said to be unemotional, superficial, cold and rigid, likened to machines. Haslam (2006) coined the denial of human nature traits to others, *mechanistic dehumanization*. Loughnan and Haslam (2007), for example, showed that business people are dehumanized in this way relative to artists, while Bain, Park, Kwok, and Haslam (2009) found that Australians attributed less human nature traits to Chinese. Also, research on medical doctors has described the risks for the doctor-patient relationship of the rise of impersonal technologies. From this perspective doctors sometimes “think of patients as mechanical systems made up of interacting parts” (Haque & Waytz, 2012, p. 180).

While both approaches have generated a large amount of research in the past decade, no research to date has studied the intersection between them. Both approaches are attribute-based (Loughnan, Haslam, & Kashima, 2009), that is, they first define some human characteristics and then verify to what extent these features are attributed differently to social targets. Metaphor-based conceptions of dehumanization, instead, directly study the possibility that outgroups are likened to a non-human entity (animals or robots). Focussing on metaphors, Martínez, Rodríguez-Bailón and Moya (2012) showed that some outgroups (e.g. Gypsy people) are directly likened to animals and participants associated them with animal related words, whereas others (e.g. Germans) are seen as robots or automates relating them with machine related words when using both explicit and implicit measures.

Up to our knowledge, the only research that has compared attribute-based and metaphor-based kinds of dehumanization is the work by Loughnan and colleagues (2009). They showed that these two predominant approaches (attribute-based and metaphor-based) are strongly related to one another. In particular, when people learn that an outgroup is dehumanized in metaphoric terms they infer the corresponding type of human attributes that will be denied to this group (e.g., people attributed less uniquely human traits to a group after learning that it was perceived as animal-like) and viceversa (e.g., they perceive a group as more machine-like after learning that it lacked human nature traits).

Whereas the previous research by Loughnan et al. (2009) focused on the relationship between metaphor- and attribute-based approaches to dehumanization, the present research will look at the intersection between the two main attribute-based approaches.

The present research

The current work aims to study the interplay between mechanistic and animalistic dehumanization proposed by Haslam (2006) and the infrahumanization theory introduced by Leyens and colleagues (2000). Even though of considerable importance, no research to date has looked at this issue directly. Both approaches have been used to show comparable dehumanized perceptions in intergroup relations using very different measures. Without knowing how the denial of secondary emotions can be informative of a group's level of HN and HU or vice versa how the denial of HN or HU can reflect in the attribution of secondary emotions, it remains hard to determine their equivalence or their common consequences. Getting more

information on how these different operationalizations of humanness are related can also guide researchers in deciding what might be the best measure to use in a given context and help to foresee and interpret their findings.

In the present research, two studies aim to analyze the interplay between both approaches. First of all, a pilot study was run in order to develop the manipulations to be used in Study 1. In Study 1, the attribution of primary and secondary emotions to animalized vs. mechanized groups was measured. Complementarily, in Study 2, secondary emotions were granted or denied to a fictitious group and both senses of humanness (Human Nature and Human Uniqueness) were measured.

Given that secondary emotions are defined as uniquely human as opposed to animals (Demoulin et al., 2004), denying these emotions to others has commonly been interpreted as an instance of animalistic dehumanization. As Haslam (2006) stated himself: "This proposed "animalistic" form of dehumanization therefore resembles infra-humanization (Leyens et al., 2003) but applies broadly to UH characteristics beyond secondary emotions." (Haslam, 2006, p. 258). Following this reasoning, one might expect that the denial of secondary emotions to a social target leads to the attribution of less HU traits and vice versa (the denial of HU traits diminishes the attribution of secondary emotions).

For mechanistic dehumanization a similar link seems more difficult to make. According to Haslam (2006), when others are denied HN they are seen as emotionally inert and lacking in warmth. From this perspective, it seems harder to formulate clear hypothesis about how primary and secondary emotions may be attributed to a mechanistically dehumanized group. On the one hand, one might

expect that members of such a group would be denied emotionality overall resulting in the denial of both primary and secondary emotions. On the other hand, it can be expected that mechanized groups are seen as especially lacking secondary emotions. Indeed, Haslam (2006) proposes that the human nature dimension does not just imply that one is less emotionally responsive, but also refers to a lack of depth and cognitive openness. Primary emotions are short-lived and externally induced, that convey very little of a person's moral sensibility and cognitive complexity (see Demoulin et al., 2004, for a detailed discussion). Therefore, one might expect that members of a mechanized outgroup would still be attributed basic, primary emotions, but not secondary ones. Considering that some previous studies showed that some outgroups were vulnerable to mechanized associations (e.g., Germans for Spanish participants, see Martínez et al., 2012) but the same groups (e.g. Germans) were also attributed with less secondary emotions in other studies (Paladino, Vaes, Castano, Demoulin, & Leyens, 2004), we expect that a lower attribution of these uniquely human emotions was indicative of both forms of dehumanization: animalistic and mechanistic. However, as far as we know, there is no empirical evidence that show whether or not secondary emotions reflect mechanistic dehumanization too. Therefore is important to address this unanswered question in the literature by analyzing if the denial of secondary emotions is indicative of exclusively animalistic dehumanization (as it has been traditionally thought) or it could also capture the mechanistic form of dehumanization.

Preliminary Study

We first conducted a preliminary study in order to develop the manipulation used in Study 1. Following the theoretical framework of Haslam (2006), three descriptions³ of fictitious groups were created including HN and HU traits. The animalized group was described with low HU traits. Specifically, participants read the following text *“Members of this group often act instinctively. They are not very rational and they do not control themselves well. They are not defined by features such as civility and cultural awareness. They seem coarse and insensitive because they lack refinement. Child-like qualities or lack of maturity are their central defining traits.”*

In contrast, the mechanized group description was created using low HN characteristics: *“Members of this group often act in an individualistic way. They are passive and very similar to each other, so they are easily interchangeable and fungible. Their manner is generally cold, and they are close-minded. Generally speaking, there are few things that affect them. They are not good at recognizing the emotions of others? and are quite rigid and superficial”.*

Finally, the humanized group was described with characteristics that were both high in HU and HN: *“Members of this group often act very maturely. They could be defined as rational, educated and civilized. Their open minds make them flexible. Moreover, they are sociable and do not have many problems understanding others’ emotions. They are not superficial, so their character may be characterized as deep”.*

Twenty-one students (12 women and 9 men) from a Spanish university were asked to rate each group description on the extent to which they considered that

³ The original Spanish manipulation can be obtained upon request.

group to be perceived in an animalistic way (1=Not at all Animalized, 5=Totally Animalized), in a mechanistic way (1=Not at all Mechanized, 5=Totally Mechanized) and in human terms (1=Not at all Human, 5=Totally Human). We also asked participants to rate how positive or negative each description was (1=Negative, 5=Positive).

Results showed how the different texts supported the effectiveness of the group description manipulations. First, a repeated measures analysis with animalized perceptions of the different group descriptions as a within-subject factor was carried out. Results showed a main effect of group description, $F(2, 40) = 33.08, p < .001; \eta^2 = .62$. Next, we conducted different t-test comparisons in order to analyze the differences in the perception of animality between the three groups. Results showed that the animalized group was perceived in a more animalistic way ($M = 3.33$) than the mechanized, ($M = 1.71, t(20) = 6.92, p < .001$) and the humanized group ($M = 1.67, t(20) = 7.17, p < .001$). Second, we conducted a repeated measures analysis with mechanized perceptions as a within-subject factor. A main effect of group description was found ($F(2, 40) = 56.13, p < .001; \eta^2 = .73$). As we intended, the mechanized group was perceived more in a mechanistic way ($M = 3.90$) than the animalized group ($M = 1.57, t(20) = 9.31, p < .001$), and the humanized one ($M = 2.95, t(20) = 2.68, p < .001$). Finally, a repeated measure analysis on the humanity judgments yielded a main effect of group description ($F(2, 40) = 22.38, p < .001; \eta^2 = .52$). Different comparisons showed that the humanized group was perceived as more human ($M = 4.81$) than the animalized group ($M = 1.67, t(20) = 15.82, p < .001$) and the mechanized group ($M = 1.67, t(20) = 11.28, p < .001$)

Additionally, statistical analyses indicated that although a main effect of Valence was found, $F(2, 40) = 96.50, p < .001; \eta^2 = .82$, there was no significant difference between the mean valence ratings for the animalized ($M = 2.43$) and the mechanized group ($M = 2.14, t(20) = 1.30, p > .05$). However, as could be expected, the humanized group was perceived more positively ($M = 4.76$) than the other two ($t(20) = 11.71, p < .01; t(20) = 13.03, p < .01$, for the animalized and the mechanized group respectively).

STUDY 1

The aim of the Study 1 was to test to what extent animalistic and mechanistic dehumanized groups are attributed primary and secondary emotions. While an animalized outgroup can be expected to lack secondary emotions, two alternative hypotheses remain for a mechanized outgroup. Members of such a group could be denied emotionality overall, because they are seen as cold and emotionally inert. Alternatively, they could be denied just those emotions that unveil an individual's more profound emotional experiences, resulting in the denial of secondary emotions only. To test these hypotheses, descriptions of fictitious groups created from the pilot study were used. Participants were presented with one of the following three groups: one lacking uniquely human traits, another lacking human nature characteristics, and a third group described as fully human with traits of both human dimensions. As a dependent variable, we measured participants' attribution of primary and secondary emotions (Leyens et al., 2001).

Method

Participants

Eighty undergraduates (38 men, 46 women) from a Spanish University whose mean age was 20.55 years ($SD = 3.09$) participated in the study in exchange for extra course credits.

Procedure

Participants completed a questionnaire individually asking them to read some information about one (animalized vs. mechanized vs. humanized) fictitious group. Participants were told that the presented group lives in a different city (the name of the city was not specified). Supposedly, the information that they were asked to read was provided by our collaborators from that city. Three different descriptions manipulated the Human Nature (HN) and Human Uniqueness (HU) characteristics assigned to these fictitious groups in a between-participants design. The descriptions did not include any information about ethnicity, race, status or other variables that could influence the opinion of the participants. The texts were validated in the preliminary study described previously.

After reading the description participants were asked to judge the extent to which a set of characteristics was typical of the group they just read about. Participants indicated their opinion on a scale ranging from 1 “*Not at all*” to 5 “*Completely*”. The list of characteristics, comprised the following emotions taken from Leyens et al. (2001): four positive secondary emotions: *amor* (love), *esperanza* (hope), *optimismo* (optimism), and *felicidad* (contentment); four negative secondary emotions: *amargura* (bitterness), *melancolía* (melanchology), *preocupación* (worry), and *pena*

(shame); four positive primary emotions: *alegría* (cheerfulness), *diversión* (fun), *tranquilidad* (tranquillity), and *entusiasmo* (enthusiasm); and four negative primary emotions: *miedo* (fear), *tristeza* (sadness), *tensión* (tension), and *aburrimiento* (boredom). We also included eight filler words: *libertad* (freedom), *independencia* (independence), *autocontrol* (self-control), *seguridad* (safety), *autorealización* (self-realization), *curiosidad* (curiosity), *ambición* (ambition), and *humildad* (humility).

Finally participants were asked to report their age and gender, and were debriefed.

Results

Four average scores were computed for each participant's ratings of positive ($\alpha = .62$) and negative ($\alpha = .72$) primary emotions, and positive ($\alpha = .81$) and negative ($\alpha = .70$) secondary emotions. These average ratings were analyzed in a 3 (Group: animalized, mechanized vs. humanized) x 2 (Type of Emotion: primary vs. secondary) x 2 (Valence: negative vs. positive) ANOVA with group manipulated as a between-participants factor and Emotion and Valence as within participants factors. This analysis revealed a main effect of the type of Emotion, $F(1,81) = 22.04$, $p < .001$, $\eta^2 = .21$. Overall, participants attributed more primary ($M = 2.94$, $SD = .38$) than secondary emotions ($M = 2.75$, $SD = .51$) to the groups. The results also showed a main effect of Valence, $F(1,81) = 5.05$, $p < .05$, $\eta^2 = .05$. Participants attributed more positive ($M = 2.97$, $SD = .81$) than negative emotions ($M = 2.72$, $SD = .80$) to the groups. These main effects were qualified by a significant interaction between Emotion and Valence, $F(1, 83) = 11.05$, $p < .001$, $\eta^2 = .11$. Two paired t-tests showed that participants attributed more positive secondary emotions ($M = 2.96$, $SD = .93$) than negative ones ($M = 2.54$,

$SD = .85$), $t(83) = 2.6$, $p < .001$), whereas there were no significant differences between the attribution of positive ($M = 2.98$, $SD = .79$) and negative ($M = 2.90$, $SD = .89$) primary emotions, $t < 1$. More interesting for our hypotheses, no main effect of Group emerged, $F(2,81) = 1.05$, $p > .05$) indicating that the emotions attributed to the three groups regardless of the Type of Emotion were not different from each other.

Regarding the valence of emotions, a significant two-way interaction emerged between Group and Valence, $F(2, 83) = 40.37$, $p < .001$, $\eta^2 = .49$. Participants attributed more positive emotions ($M = 3.64$, $SD = .42$) and less negative emotions ($M = 2.21$, $SD = .62$, $t(27) = 8.51$, $p < .001$) to the humanized group. In contrast, participants attributed more negative emotions ($M = 3.27$, $SD = .69$) than positive emotions ($M = 2.27$, $SD = .69$, $t(27) = 4.79$, $p < .001$) to the mechanized group. However, there were no differences between the positive ($M = 3.00$, $SD = .62$) and negative emotions ($M = 2.68$, $SD = .74$) attributed to the animalized group, $t(27) = 1.67$, $p > .05$.

More importantly, and according to one of our predictions, the interaction between Type of Emotion and Group was significant, $F(2,81) = 19.14$, $p < .001$, $\eta^2 = .32$. As expected, participants attributed significantly more secondary emotions than primary emotions to the humanized group ($t(27) = 2.59$, $p < .05$). On the contrary, as shown in table 1 both the animalized and the mechanized groups were infrahumanized, and participants attributed more primary emotions than secondary emotions to them ($t(27)_{\text{animal}} = 5.81$, $p < .001$; $t(27)_{\text{machine}} = 3.32$, $p < .001$). In order to test the possible differences between the animalized and mechanized groups on primary and secondary emotions, we conducted pair wise contrasts with Bonferroni adjusted alpha-levels between conditions comparing these two groups with the

humanized one. They showed that the humanized group was attributed more secondary emotions than the animalized $F(1,54) = 9.30, p < .05, \eta^2 = .14$ and the mechanized group, $F(1,54) = 8.85, p < .05, \eta^2 = 1.41$. In contrast, the animalized group was attributed more primary emotions than the humanized Group $F(1,54) = 4.85, p < .05, \eta^2 = .082$, whereas there were no reliable differences for primary emotions between the mechanized and the humanized group $F(1,54) = 1.16, p > .05$.

Finally, looking at these results from a different perspective and to explore the differences between both dehumanized groups, we compared the animalized and the mechanized groups. Interestingly, we neither found significant differences in the attribution of primary emotions, $F(1,54) = 2.60, p > .05$ nor did any significant difference emerge in the attribution of secondary emotions, $F(1,54) = .06, p > .05$.

Importantly, the three-way interaction including Valence was not significant, showing that these effects were not qualified by the valence of the emotions, $F(2,81) = .15, p > .05, \eta^2 = .004$.

Interestingly, a 3 (Group: animalized, mechanized or humanized) unifactorial ANOVA on the attribution of secondary emotions using the attribution of primary emotions as a covariate revealed that the main effect of Group on the attribution of secondary emotions remained significant even when controlling for the attribution of primary emotions, $F(1, 80) = 16.75; p < .05, \eta^2 = .29$. This analysis rules out the possibility that members of the mechanized group were attributed less secondary emotions because they were just seen as less emotional overall.

Table 1: Attribution of Primary and Secondary Emotions to the Human, Animalized and Mechanized Groups

	Primary Emotions						Secondary Emotions					
	Positive		Negative		Total		Positive		Negative		Total	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Humanized group	3.50	.46	2.21	.69	2.85 ^a	.31	3.78	.53	2.22	.62	3.00 ^b	.33
Animalized group	3.13	.65	3.02	.85	3.07 ^a	.41	2.87	.76	2.34	.78	2.61 ^b	.57
Mechanized group	2.32	.74	3.48	.64	2.89 ^a	.40	2.23	.74	3.07	.89	2.65 ^b	.51

Note: Values with different superscripts indicate significant differences between Primary and Secondary emotions within-groups. Values with different subscripts indicate significant differences between the groups described (i.e. Humanized, Mechanized and Animalized, all $ps < .05$).

Discussion

Our results support people's tendency to attribute less secondary emotions to those groups that are lacking humanness. As a way of considering the outgroups as less human than the own group, people attribute more secondary emotions to the ingroup than to outgroups (e.g., Cortes et al. 2005; Leyens et al., 2001). Given that secondary emotions are not shared with animals, people who are denied secondary emotions may be perceived closer to animals. Consistent with this idea, in this study, we observed that a group that was denied HU traits and therefore animalistically dehumanized was attributed less secondary emotions than a fully humanized group. Therefore, these results show that denying a group HU traits overlaps with depriving its members the capacity to experience secondary emotions likening them more closely to animals.

More innovatively, we found that also a mechanistically dehumanized group that was denied HN traits was infrahumanized attributing its members less secondary emotions compared to a fully humanized group. Importantly, participants this effect was not the result of a more general denial of emotions. Primary emotions were not described differently to mechanized and animalized groups. Moreover, when controlling for the attribution of primary emotions the differences in secondary emotions remained unchanged. These findings suggest that denying HN traits to a social group diminishes the attribution of secondary emotions without necessarily depriving its members from general emotionality. As such, attributing less secondary emotions to others seems to capture both animalistic and mechanistic forms of dehumanization.

STUDY 2

Study 1 provided empirical evidence that both the denial of HU and HN traits led participants to attribute less secondary emotions to such dehumanized groups. Study 2 was intended to investigate the reverse perspective verifying how information about the level of secondary emotions of groups can lead to differences in the perception of HU and HN. In line with the results of Study 1, we expected that denying secondary emotions would diminish both the attribution of HU and HN traits, resulting in both animalistic and mechanistic dehumanization. Demoulin and colleagues (2004) showed that secondary emotions contain information that might be relevant for both senses of humanness. On the one hand, secondary emotions are uniquely human, not shared with animals, and indicative of one's moral sensibility; all dimensions that are

clearly linked to the dimension of human uniqueness. On the other hand, secondary emotions might signal a person's emotional sensibility, cognitive openness, and depth; all characteristics that are mostly related to the human nature dimension. Therefore, denying secondary emotions to a group might diminish the attribution of both HU and HN traits to its members.

To test these predictions, two fictitious groups were created that varied in the frequency (high vs. low) with which they expressed secondary emotions. The unique focus on secondary emotions was warranted by the fact that only these emotions can be a proxy of a group's humanness (Leyens et al., 2000). As a dependent variable, we measured participants' attribution of HU and HN traits (Haslam et al., 2005).

Method

Participants

Forty eight undergraduates (14 men, 34 women) of the University of Granada whose mean age was 22.15 years ($SD = 4.13$) participated in the study in exchange for extra course credits.

Procedure

After reporting their age and gender, participants read a paragraph extracted from the online version of a supposedly important scientific Psychology Journal. Participants were informed that the study described in the article was carried out in order to examine some differences between groups. Following Pereira, Vala and Leyens's (2009) procedure, the text provided to participants manipulated the frequency with which the group expresses secondary emotions. Depending on the experimental condition the text described a humanized group (high frequency of

secondary emotions) or an infra-humanized one (low frequency of secondary emotions). Specifically, participants were told that: “this study revealed that the target group expressed the following secondary emotions (Love, Hope, Worry, Optimism, Bitterness, Melancholy, Contentment and Pity) more readily (Humanization Condition)/less readily (Infrahumanization Condition) than the other evaluated groups”. It is important to note that no information about ethnicity, race, status or other variables was provided to participants.

After reading this information, participants were asked to answer some questions about the presented group. The questionnaire required them to rate the group on HU and HN trait terms. Participants indicated the extent to which each trait in their opinion described the group in the article on a scale ranging from 1 “*Not at all*” to 7 “*Completely*”. The list of HU and HN traits included forty-one personality traits (see Haslam et al., 2005).

Subsequently, to verify the manipulation participants were asked to indicate how often the group described in the article expressed certain emotions. They were presented with a list that comprised the same eight secondary emotions as those that appeared in the group description although in a different order: *amor* (love), *esperanza* (hope), *preocupación* (worry), *optimismo* (optimism), *resentimiento* (bitterness), *melancolía* (melancholy), *felicidad* (contentment), and *pena* (pity). These emotions appeared together with eight primary emotions *alegría* (cheerfulness), *diversion* (fun), *tranquilidad* (tranquillity), *entusiasmo* (enthusiasm), *miedo* (fear), *tristeza* (sadness), *tensión* (tension), and *aburrimiento* (boredom). The mean score for primary and secondary emotions was calculated for each subject.

Finally, given that to our knowledge, it was the first time that the traits used by Haslam and colleagues (2005) were used in Spanish, we decided to include a measure of Humanness ratings in order to assure that the HU and HN traits were perceived as such by the participants who took part in this study. Concretely, HU was measured by asking: "To what extent is each characteristic exclusively human (it does not apply to other species)" (1 = *Not at all exclusive*, to 7 = *Very Exclusive*). HN was evaluated by the item "To what extent is each characteristic an aspect of human nature?" (1 = *Not at all*, to 7 = *Very much*). The valence of each trait was also measured (1 = *Very Negative* to 7 = *Very Positive*).

Following Haslam and Bain (2007) and Bain et al. (2009), the HN index was computed by identifying the eight traits with the highest HN ratings: *emocional* (emotional), *simpático/a* (friendly), *cálido/a* (warm), *curioso/a* (curious), *receptivo/a* (receptive), (active), *impaciente* (impatient), *independiente* (independent). Similarly, the HU index was computed by choosing the eight traits with the highest HU ratings: *culto/a* (cultured), *educado/a* (educated), *refinado/a* (refined), *humilde* (humble), *civilizado/a* (civilized), *racional* (rational), *maduro/a* (mature) and *tolerante* (broad minded). This selection of traits was also intended to maximize the difference in HU and HN perception.

Two paired t-test comparisons showed that the traits included in the HU factor were judged as higher in HU ($M = 5.31$) than in HN ($M = 4.38$), $t(46) = 4.17$; $p < .001$. Likewise, the traits included in the HN factor were judged as higher in HN ($M = 4.70$) than in HU ($M = 3.53$), $t(46) = 5.17$; $p < .001$. It is important to note that the traits

included in each of these factors are similar to the ones proposed by Haslam's (2006) theoretical model.

In order to control the effect of the desirability of the traits we tested that both factors did not differ in valence ($M_{\text{Human Uniqueness}} = 5.96$, $M_{\text{Human Nature}} = 5.65$, $p > .05$)

At the end of the experiment, participants were thanked for their participation and debriefed.

Results

Manipulation Check

As expected, an univariate ANOVA comparing both conditions on the attribution of secondary emotion (the mean score of all the presented secondary emotions) revealed that participants in the Human Condition attributed more secondary emotions to the group ($M = 5.04$) than in the Infrahumanization Condition ($M = 2.84$), $F(1, 46) = 66.98$, $p < .001$, $\eta^2 = .59$). Similarly, an univariate ANOVA on the attribution of primary emotions (the mean score of all the primary emotions included in the description) showed that participants in the Human Condition were also attributed with more primary emotions ($M = 4.33$), than in the Infrahumanization Condition ($M = 3.68$), $F(1, 46) = 7.89$, $p < .01$, $\eta^2 = .14$). Additionally, a set of paired sample t-tests conducted within each group showed that while the Human Condition group was attributed with more secondary than primary emotions, ($t(23) = -4.5$, $p < .001$); the reverse pattern was obtained for the Infrahumanized Condition ($t(23) = 4.7$, $p < .001$)

Attribution of humanness to the group

To analyze the attribution of both senses of humanness to the Humanized and Infrahumanized groups (i.e., the groups described experiencing high and low secondary emotions, respectively) we conducted a 2 (Group: Humanized vs. Infrahumanized) x 2 (Type of Humanness: Human Uniqueness vs. Human Nature) ANOVA with Group manipulated as a between-participants factor and Type of Humanness as within participants factor. From this analysis only a significant interaction between Group and Type of Humanness emerged, $F(1, 46) = 11.54, p < .001, \eta^2 = .20$. As predicted, participants attributed more Human Uniqueness traits to the Humanized Group than to the Infrahumanized Group ($t(46) = 2.68, p < .05$). Furthermore, participants also ascribed more Human Nature traits to the Humanized Group than to the Infrahumanized Group ($t(46) = 4.80, p < .001$) (see Table 2). Interestingly, differences between the Humanized (i.e. the group described expressing more secondary emotions) and the Infrahumanized (i.e. the group described expressing less secondary emotions) groups were higher for Human Nature than for Human Uniqueness traits.

Moreover, when controlling for the attribution of primary emotions the interaction between Group and Type of Humanness kept its significance ($F(1,45) = 6.56; p < .05, \eta^2 = .127$).

Table 2: Attribution of Human Nature and Human Uniqueness traits to the Humanized and the Infrahumanized Groups.

	Human Uniqueness		Human Nature	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Humanized group	4.76 ^a _a	.63	5.18 ^a _a	1.68
Infrahumanized group	4.13 ^a _b	.95	3.36 ^b _b	.78

Note: Values with different superscripts indicate significant differences between Human Uniqueness and Human Nature within-groups. Values with different subscripts indicate significant differences between the groups described (i.e. Humanized and Infrahumanized, all $ps. < .05$).

Additionally, we also carried out two paired t-tests in order to compare the attribution of HU and HN traits within each group. Results showed that while the infrahumanized group was attributed with more HU than HN traits ($t(23) = 4.22, p < .001$), there were no significant differences between both humanness factors for the humanized group ($p > .05$).

Discussion

The results of Study 2 extend those of Study 1 focusing on the reverse path. Specifically, we manipulated the level of secondary emotions assigned to a fictitious group and measured the subsequent attribution of Human Uniqueness and Human Nature traits. Results confirmed the hypothesis that describing a group with less secondary emotions led participants to infer that the group was less human overall both on the dimensions of HN and HU. These findings, together with those of Study 1, seem to suggest that the attribution of secondary emotions (Leyens et al. 2001) relates with the attribution of both dimensions (HU and HN) proposed by the two-dimensional

humanness model (Haslam, 2006). Therefore, a low level of secondary emotions can be indicative of both animalistic and mechanistic forms of dehumanization.

General Discussion

The main goal of this research was to investigate the link between the two-dimensional model of humanness proposed by Haslam (2006) and the emotion measure included in infrahumanization theory conducted by Leyens and colleagues (2007). Two studies were carried out to address this gap in the dehumanization literature. In Study 1, we followed Haslam's two dimensional model of humanness in order to create fictitious groups (animalized, mechanized and humanized). Afterwards, the attribution of primary and secondary emotions was measured. Results revealed that participants attributed more secondary emotions to the Humanized Group compared to both dehumanized groups that did not differ from each other. Even when controlling for the attribution of primary emotions, this result remained unvaried excluding an explanation in terms of general emotionality to explain differences between groups. Overall, these results provide novel empirical evidence suggesting that a decrease in the attribution of secondary emotions comprises both animalistic and mechanistic forms of dehumanization. While this result could have been taken for granted for the animalistic group, it has never been shown with mechanized groups.

Study 2 aimed to investigate the reverse path analyzed in Study 1 manipulating instead of measuring the attribution of secondary emotions. The two senses of humanness (HU & HN) proposed by Haslam (2006) were measured. Results revealed that the infrahumanized group (low frequency of expressing secondary emotions) was attributed both less Human Uniqueness and Human Nature traits compared to the

Humanized group (high frequency of expressing secondary emotions). Overall, results of both studies show that: a) the denial of HN and HU leads to the attribution of less secondary emotions; and b) a group expressing low levels of secondary emotions makes people attribute less HU and HN traits.

The current findings have important implications for our understanding of humanness and dehumanization. First of all, this research underlines the role of the attribution of secondary emotions in signalling both types of dehumanization. All previous work has related these emotions only with the study of animalistic dehumanization (Haslam, 2006; Haslam, Kashima, Loughnan, Shi, & Suitner (2008); Leyens et al., 2007). A benefit of this research is that it shows that also mechanized groups are attributed less secondary emotions. Importantly, this finding was not the result of a more general denial of emotionality. Primary emotions were attributed equally to the animalized and the mechanized groups. This finding suggests that even though members of mechanized groups are seen as lacking in emotionality and inertness (Haslam, 2006), participants infrahumanized them depriving them only uniquely human emotions. Still, it is important to note that these findings not necessarily imply that all outgroups that have been denied secondary emotions in the literature will suffer both animalistic and mechanistic dehumanization. Many intergroup variables interfere and should be taken into consideration before one can determine what groups will be dehumanized and on what dimension (see Vaes, Leyens, Paladino, & Miranda, 2012, for a recent review). Also, cross-cultural variables can play an important role (Bain, Vaes, Kashima, Haslam, & Guan, 2012). The present findings do suggest that it might be the case showing that the denial of secondary

emotions to abstract outgroups encloses both animalistic and mechanistic forms of dehumanization.

Secondly, our findings open the door to use secondary emotions as an index of dehumanization in contexts where not just animalized but also mechanized forms of dehumanization are to be expected. Dehumanization in modern medicine, for example, is often seen as a consequence of the spread of impersonal technologies and economic imperatives. The lack of personal care and human warmth towards patients corresponds to mechanistic dehumanization and implies that they are seen as defective machines in need of repair (Haque et al., 2012; Haslam, 2006). Vaes and Muratore (2012), however, conducted a study in which they related health care worker's level of burnout with their tendency to dehumanize the suffering of a terminal patient. Results showed that only the inference of secondary emotions was predictive of health care worker's level of burnout. In line with the present findings, lower levels of secondary emotions inferences were a good indicator of processes of dehumanization in a context in which mechanistic forms of dehumanization are more common.

Thirdly, we have found a clear link between the two main approaches in dehumanization research. In this sense, we consider that our results have also implications in different areas within Social Psychology (e.g. prejudice and discrimination, stigma, intergroup contact, etc.). As Haslam and Loughnan (2012, p. 91) pointed out "in a theoretical field dominated by valence – liking versus disliking, positive versus negative affect, warmth versus coldness and so on – the dimension of humanness also plays a role in group perception". Because of that, the

acknowledgment of the main indicators of humanness (uniquely human emotions and human uniqueness and human nature traits) becomes helpful in furthering our understanding of intergroup relations. Furthermore, these results could stimulate future endeavours that test the link between the senses of humanness and other related concepts. Mind attribution (Epley & Waytz, 2010), has recently been the subject of extensive study and could be one such a dimension. Gray, Gray and Wegner (2007) found that mind attribution depends on two orthogonal dimensions, which they call Experience and Agency. Experience comprises people's emotions and consciousness while intentional action, responsibility and thought are linked with Agency. Interestingly, these two dimensions of mind perception capture different aspects of morality. Agency is more easily linked with moral agency and hence to responsibility, whereas Experience is linked to moral patiency and hence to rights and privileges (Gray & Wegner, 2009). While most dehumanization researchers agree that human nature characteristics fit the Experience dimension best while the human uniqueness dimension maps on Agency (Bastian, Laham, Wilson, Haslam & Koval, 2011; Haslam, Bastian, Laham, & Loughnan (2012); Leyens, Paladino, & Vaes, in press), no empirical research has confirmed this intuition. Importantly, the role of primary and secondary emotions remains obscure in this divide. In line with the present findings, the attribution of secondary emotions could be seen as informative of both Experience and Agency of a person and indicative of his or her moral sensibility overall, both as a moral actor and target of moral behavior.

Findings from Study 1 and Study 2 provided solid confirmation of the importance of secondary emotions proposed by infrahumanization theory (Leyens et

al., 2007) and the two dimensional humanness model proposed by Haslam (2006) as reliable indicators of the dehumanization processes. Even though the current research showed that secondary emotions are related with both animalistic and mechanistic forms of dehumanization, we should be careful in treating them similarly since as Haslam's (2006) model suggests both dimensions of dehumanization can have very different and important consequences in intergroup relations (e.g., Bastian et al., 2011).

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Are they animals or machines? Measuring dehumanization⁴

(The studies described in this article are included in the doctoral thesis as Studies 3, 4, 5 and 6)

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Abstract

The present research deals with two forms of dehumanization: 1) denying uniquely human attributes to others (seeing them as animals); 2) denying human nature to others (seeing them as machines or automata). Studies 1 and 2 explored these two forms of dehumanization, analyzing whether people associated their ingroup more with human-related words (vs. animal- vs. machine-related words) than two different outgroups. A paper and pencil procedure was used to find out which words were associated with the surnames of the ingroup (Spaniards) or the outgroup (Germans, Gypsies). Results showed that participants were more ready to link ingroup than outgroup surnames to human words. They also linked more Gypsy surnames to animal-related words and German surnames with machine-related words. Studies 3 and 4 used the Implicit Association Test to analyze the same ideas and replicated the results of Studies 1 and 2.

Keywords: *dehumanization, infrahumanization, animalistic dehumanization, mechanistic dehumanization.*

Resumen

La investigación que se presenta trata sobre dos formas de deshumanización: 1) Negar a los demás cualidades exclusivamente humanas (viéndolos como animales); 2) negarles la naturaleza humana (viéndolos como máquinas o autómatas). En los estudios 1 y 2 se examinaron ambas formas de deshumanización analizando si la gente asociaba más al endogrupo con palabras relativas a humanos (vs. animales o máquinas) en comparación con dos exogrupos diferentes. Se utilizó un procedimiento de papel y lápiz para saber qué palabras se asociaban más con los apellidos del endogrupo (españoles) o con los apellidos del exogrupo (alemanes, gitanos). Los resultados pusieron de manifiesto que los participantes relacionaron en mayor medida los apellidos del endogrupo con las palabras relativas a humanos. Además también vincularon los apellidos gitanos con palabras vinculadas a animales y los apellidos alemanes con palabras de máquinas. En los estudios 3 y 4 se utilizó el Test de Asociación Implícita (IAT) para probar las mismas ideas y los resultados corroboraron los encontrados en los estudios 1 y 2.

Palabras Claves: deshumanización, infrahumanización, animalización, mecanización.

Totally or partially denying human attributes to others, particularly members of other groups, is common in the history of humankind. This phenomenon is closely linked to prejudice and discrimination towards members of such groups. If certain people are not perceived as being human – or as being totally human – any behavior towards them might be justified, no matter how negative it is. Dehumanization has become particularly evident in major conflicts such as wars and genocides and in the context of the flagrant exploitation of various groups (slavery, for example).

In the field of Psychology, Haslam (2006) considers that the conceptions and theories dealing with dehumanization are very diverse and not very related to one another. According to Haslam, there are two basic forms of dehumanization: animalistic dehumanization and mechanistic dehumanization. One of the most current and prolific approaches to dehumanization understood as animalistic dehumanization is the work of Leyens and his collaborators on 'infrahumanization' (Boccatto, Cortes, Demoulin & Leyens, 2007; Demoulin, Saroglou & Van Pachterbeke, 2008; Leyens et al., 2001; Paladino et al., 2002; Vaes, Paladino, Castelli, Leyens & Giovanazzi, 2003). It has traditionally been argued that it is our ability to use language or reason that makes us 'human.' Yet, these authors consider that the essence of humanity is our ability to experience feelings (what they call 'secondary emotions'). Although we share primary emotions with animals, secondary emotions are uniquely human (Ekman, 1992; Innes-Ker & Niedenthal 2002). Sadness, joy, and anger are examples of primary emotions, whereas happiness, rancor, and bitterness are considered to be secondary emotions. Demoulin et al. (2004) conducted a series of cross-cultural studies whose results showed that people were able to establish differences between primary and secondary

emotions and considered that primary emotions are shared with animals whereas secondary emotions are exclusive to humans. Compared to primary emotions, participants considered that secondary emotions are less intense, more lasting, less visible, require more cognitive resources, provide more information on the sensitivity and moral nature of those who experience them, and are due to internal causes. The first studies on infrahumanization explored the role of primary and secondary emotions in people's description of their ingroup and various outgroups. Results showed that people selected more secondary emotions to describe their ingroup than the outgroup but did not show any differences between the ingroup and the various outgroups when attributing primary emotions.

It is important to highlight three important features of the studies on infrahumanization carried out so far. First, differences in the attribution of primary and secondary emotions have been obtained both with positive and negative emotions. Therefore, infrahumanization cannot be understood just as a phenomenon of ingroup favoritism; in other words, people attribute more secondary emotions – even negative ones – to their ingroup than to outgroups. Second, infrahumanization is treated as a basically implicit phenomenon; that is, Leyens et al. (2001) used primary and secondary emotions in their research because they believe participants are not explicitly aware that attributing more secondary emotions to the ingroup implies considering it more human than the outgroup. Strictly speaking, they never proved that participants in their studies infrahumanized others; infrahumanization is related to their essentialist interpretation of the results (Leyens et al., 2001, p. 194). Leyens et al. did not always use implicit procedures, as in the case of paper and pencil tasks in

which subjects have to associate written words to the ingroup and the outgroup. Yet, subjects are not aware in such tasks that such words are primary and secondary emotions and that some are more 'human' than others. Finally, Leyens et al. underlined that infrahumanization is not an extreme behavior that only takes place in situations of great conflict; in fact, many studies have concluded that people infrahumanize groups that they are not necessarily in conflict with (Demoulin et al., 2005; Viki & Calitri, 2008), although intergroup conflict contributes to infrahumanization. Research conducted by Rohmann, Niedenthal, Brauer, Castano, and Leyens (2009) shows that groups with a similar status (German and French people) and no conflict in their relationship did not attribute secondary emotions differently when identification with the ingroup was low and when between-group comparison was not activated. According to Haslam (2006), infrahumanization as proposed by Leyens et al. implies denying the human attributes to members of other groups. These uniquely human attributes include civism, refinement, moral sensibility, and feelings. Haslam considers that this form of dehumanization implies seeing others like animals and therefore calls it 'animalistic dehumanization'. According to Haslam, Kashima, Loughnan, Shi & Suitner (2008), when humans are compared to animalistically dehumanized groups, the latter are seen as lacking higher cognitive processes and more sophisticated emotions but also as having greater perceptive abilities.

However, as noted above, Haslam considers there is another way to deny humanity to the members of other groups that involves perceiving them as objects or automata. He calls it 'mechanistic dehumanization'. According to Haslam, the attributes of human nature that mechanistically dehumanized groups do not possess

are emotional sensitivity, interpersonal warmth, cognitive openness, and agency. Instead, members of mechanistically dehumanized groups are seen as being cold and rigid. Robots, for example, mainly lack emotion and abilities related to desire (Haslam et al., 2008).

Based on the model presented by Haslam (2006), other authors have explored these various forms of dehumanization. Loughnan and Haslam (2007) proved that a group perceived as lacking distinctly human attributes – artists – was associated more with animals than another group seen as lacking attributes of human nature – business people. Other studies have provided evidence of the importance of attributing humanity in the social perception of other groups. Bain, Park, Kwok, and Haslam (2009) found that Anglo-Australians distinguish themselves from ethnic Chinese using attributes of human nature (that is, they see ethnic Chinese as machine-like); conversely, ethnic Chinese distinguish themselves from Anglo-Australian using uniquely human attributes (that is, they see Anglo-Australians as animal-like). Results were obtained by using questionnaires and other implicit measures.

In the present paper, the term ‘infracumanization’ is used to refer to animalistic dehumanization (Demoulin et al., 2008), whereas ‘dehumanization’ is used as a broader concept that includes both animalistic and mechanistic dehumanization. These two forms of dehumanization are not only important because they imply ingroup favoritism and may be linked to prejudice towards certain groups but also because they may lead to different intergroup consequences. In other words, it is not the same to perceive a group as being animalistically dehumanized than to see it as being mechanistically dehumanized. The consequences for interpersonal, labor or

professional relationships may be different in each case. In fact, these two forms of dehumanization do not necessarily imply rejection and discrimination and are sometimes used as a legitimizing ideology for taking advantage of or using members of such groups. Interaction with animals (and therefore with animalistically dehumanized groups) can often be pleasant (e.g., they evoke affection from us or amuse us) and beneficial (e.g., they help us perform certain tasks), just as interaction with machines can bring us many benefits.

How can we measure dehumanization?

Infracommunication has mainly been studied by analyzing the different attribution of primary and secondary emotions to the ingroup and the outgroup (Leyens et al., 2000, 2001). As stated above, several procedures have been used for this purpose, including the Implicit Association Test (IAT), paper and pencil tasks, and the Wason selection task.

An adaptation of the IAT (Greenwald & Banaji, 1995; Greenwald, McGhee & Schwartz, 1998) was used by Paladino et al. (2002) in four experiments to verify whether people's secondary emotions are more strongly associated to the ingroup than to the outgroup. The IAT can be used to measure prejudice implicitly. Paladino et al. (2002) used it in a task in which participants were asked to classify as fast as possible a series of words that were presented on a computer screen. After several practice rounds, participants had to perform a congruent and an incongruent task. In the congruent task, participants had to use the same key to answer when typical surnames of the ingroup and secondary emotions appeared on the screen, and a different key when the screen showed surnames of an outgroup and primary

emotions. In the incongruent task, the response pattern was inverted: participants had to use the same key to respond to surnames of the ingroup and primary emotions and a different key to designate surnames of the outgroup and secondary emotions. Differences in reaction times between the congruent and the incongruent task were taken as an index of implicit prejudice. The experiments carried out by Paladino et al. (2002) showed the same pattern of results as previous studies: participant reaction times were significantly faster in the congruent task than in the incongruent task. These results confirm that there is a stronger automatic association between the ingroup and secondary emotions and between the outgroup and primary emotions than the other way round.

More recently, Viki et al. (2006) tested the idea that if infrahumanization (animalistic dehumanization) is a basic cognitive social process, it should also appear with other stimuli than emotions. To this end, they conducted several studies in which participants were asked to associate words directly related to animals (e.g., domestic animals, wildlife) or humans (e.g., people, civilian, single) to the ingroup (always the British) and to various outgroups (German, Italian, French people). In Study 1, they used IAT. Their results showed that participants gave faster responses in the congruent task – in which the ingroup was associated to human-related words and the outgroup was associated with animal-related words – than in the incongruent task. In a second study, they used a paper and pencil task in which participants were asked to link ingroup and outgroup surnames to human- or animal-related words. The authors found that participants linked ingroup surnames (vs. outgroup surnames) more to human-related words. The procedure used in Study 2 was used again in Study 4, with

the only difference that, this time, half of the animal- and human-related words were positive and half of them were negative. In this experiment, data analysis showed that the valence of words did not affect the results. In other words, participants linked ingroup surnames more to human-related words (compared to outgroup surnames) regardless of whether the words were positive or negative. In Study 3, participants were asked to select from a list of animal- and human-related words those which, according to them, best characterized the ingroup and the outgroup (Germans in Study 3a and Italians in Study 3b). Participants selected more human-related words for the ingroup than for the outgroup.

The methodology used by Haslam (Haslam, Bain, Douge, Lee & Bastian, 2005) to study his formulation of the two different forms of dehumanization (animalistic and mechanistic dehumanization) generally involved directly asking participants to indicate to what extent a series of personality traits are uniquely human or characteristic of human nature. According to Haslam, people who deny other groups characteristics that are uniquely human (civility, refinement, moral sensibility, rationality, logic, maturity) see such groups as animals, whereas those who deny other groups characteristics referring to human nature (emotional responsiveness, interpersonal warmth, cognitive openness, agency, individuality, depth) see them as machines.

We consider that the measure proposed by Haslam can be complemented by other types of measures that use cognitive stimuli more directly related to mechanistic and animalistic dehumanization. In fact, this was the objective of the present research. Following Haslam et al., this study did not directly explore the association of certain groups or characteristics with animalistic or mechanistic dehumanization. Instead,

these two processes were inferred by attributing much more abstract traits. Thus, attributing characteristics such as 'culturelessness,' 'innocence,' or 'amorality' is understood as a way of denying others uniquely human traits; in its extreme form, this implies seeing others as animals (Haslam et al., 2005). Similarly, seeing others as lacking traits related to cognitive openness (e.g., imagination, curiosity), sociability, and emotional sensitivity implies seeing others as automata (Haslam, 2006).

The present research

The present research proposes a new measure to explore how outgroups are dehumanized using stimuli referring to machines or animals. The intention was to distinguish between both types of dehumanization, avoiding any possible confusion when measuring them. The classic measure developed by Leyens et al. (2001) can only be used to approach one of the two types of dehumanization (infrahumanization or animalistic dehumanization). In addition, such authors explored it only based on the different attribution of secondary and primary emotions. Therefore, we consider that it is appropriate to create an instrument that can be used to explore the other form of dehumanizing people: mechanistic dehumanization. This involves not using emotions as a reflection of dehumanization.

The measure was developed by selecting two groups that some studies have highlighted as being associated to animalistic dehumanization (Gypsies) and mechanistic dehumanization (Germans). Studies on stereotypes about Gypsy people show that such stereotypes include animal-related traits, both positive (intuitive, creative, free, physically able, spontaneous) and negative (wild, impulsive, aggressive, instinctive, noisy) (Chulvi & Pérez, 2005). The Gypsy community is one of the largest

ethnic minorities in Spain, with about 500,000 people. People in this social category are known as *gitanos* by the rest of Spaniards and refer to non-Gypsies as *payos* (Rodríguez-Bailón, Ruiz & Moya, 2009). Studies performed following the Stereotype Content Model (Cuddy et al., 2009) have shown that Germans are perceived as being competent but not very warm, that is, very similar to machines or robots.

The present studies explored animalistic and mechanistic dehumanization using two different measures: an implicit measure (the IAT) and a more explicit (or less implicit) measure. The second measure was developed following the methodological proposal made by Viki et al. (2006); that is, participants were asked directly to associate the ingroup/outgroup with human-, animal- and/or machine-related words. In the first two studies, a paper and pencil measure was used to determine which form of dehumanization participants applied depending on the outgroup analyzed: a group stereotypically associated with animals (the Gypsy community) and a group stereotypically associated with machines (Germans). Studies 3 and 4 also analyzed the form of dehumanization used by participants depending on the two outgroups mentioned, but this time using an implicit measure (the Implicit Association Test, IAT). Both measures were combined to test the following hypotheses: the ingroup would be more associated with human-related words than the outgroup, the Gypsy outgroup would be more associated with animal-related words (vs. human- or machine-related words), and the German outgroup would be more associated with machine-related words (vs. human- or animal-related words).

STUDIES 1 AND 2

The main objective of the first two studies was to create a new measure of dehumanization that can distinguish between mechanistic and animalistic dehumanization. Following the procedure proposed by Viki et al. (2006), we created a measure in which participants had to select the words that best defined a series of surnames belonging to two different outgroups. Given that, according to Haslam (2006), there are different forms of dehumanization of groups in society, we selected two groups that we believed were likely to be subjected to animalistic or mechanistic dehumanization. In Study 1, our hypothesis was that the Spanish ingroup would subject the German outgroup to mechanistic dehumanization; in Study 2, the hypothesis was that the non-Gypsy ingroup would subject the Gypsy outgroup to animalistic dehumanization.

Preliminary study

A pilot study was carried out to construct the dependent measure of Studies 1 and 2. The study was useful to select a list of words referring to the three categories that we wanted to assess: humans, machines and animals. Seventeen graduate students in Psychology participated in this preliminary study. A list of 81 words referring to the three categories mentioned was presented. In a within-participant design, participants had to assess to what extent the words were human-, animal-, or animal-related in a Likert scale from 1 (e.g., Not Human-related, Not Animal-related, Not Machine-related) to 5 (e.g., Very Human-related, Very Animal-related, Very Machine-related). Finally, participants had to indicate the valence of each characteristic (1 = Totally Negative, 5 = Totally Positive).

The mean valence of each word and its score in each of the three possible categories was obtained. According to these results, we selected seven words strongly associated to humans – the mean score of each word in the scale “Not Human-related/Very Human-related” is shown between parentheses: *Gente* (People) ($M = 4.67$), *Habitante* (Inhabitant) ($M = 4.67$), *Ciudadano/a* (Citizen) ($M = 4.42$), *Individuo* (Individual) ($M = 4.25$), *Racional* (Rational) ($M = 4.17$), *Soltero/a* (Single) ($M = 4.17$), and *Pasivo/a* (Passive) ($M = 3.18$). In addition, seven words strongly associated to machines were selected (the mean score of each word in the mechanization scale is shown between parentheses): *Máquina* (Machine) ($M = 4.94$), *Tecnológico* (Technological) ($M = 4.53$), *Dispositivo* (Device) ($M = 4.47$), *Mecánico* (Mechanical) ($M = 4.47$), *Calculador/a* (Calculating) ($M = 4.47$), *Instrumento* (Instrument) ($M = 4.41$), and *Herramienta* (Tool) ($M = 4.18$). Finally, seven words associated to animals in the animalistic dehumanization scale were chosen: *Animal* (Animal) ($M = 4.76$), *Pedigrí* (Pedigree) ($M = 4.76$), *Mascota* (Pet) ($M = 4.65$), *Raza* (Breed) ($M = 4.12$), *Manso* (Tame) ($M = 4.00$), *Salvaje* (Wild) ($M = 3.71$), and *Irracional* (Irrational) ($M = 2.82$). The mean valence of the characteristics associated to each of the categories was similar, as shown by comparisons of means of the valence of the words included in the category humans ($M = 3.19$) and animals ($M = 3.07$), $t(16) = .96$, $p > .34$, in the category humans vs. machines ($M = 3.05$), $t(16) = 1.27$, $p > .22$ and in the category of animals vs. machines, $t(16) = .14$, $p > .88$.

Pretest analyses also made it possible to compare the scores of words in each of the three categories established: animals, machines, and humans. The aim of these analyses was to assess the meaning of these words in each of the scales used in the

pretest (Human: Not Human-related/Very Human-related; Animalistic dehumanization: Not Animal-related/Very Animal-related; Mechanistic dehumanization: Not Machine-related/Very Machine-related). The seven words of the category “animals” obtained higher scores in the animalistic dehumanization scale ($M = 4.11$) than in the human ($M = 2.11$), $t(16) = 8.42$, $p < 0.001$ and mechanistic dehumanization scales ($M = 1.4$), $t(16) = 15.94$, $p < 0.001$, respectively. Likewise, the words selected in the category “machines” scored significantly higher in the mechanistic dehumanization scale ($M = 4.49$) than in the animalistic dehumanization ($M = 1.31$), $t(16) = 20.72$, $p < .001$ and the human scales ($M = 1.54$), $t(16) = 13.52$, $p < .001$. Finally, words referring to humans scored higher in the human scale ($M = 4.28$) than in the animalistic dehumanization ($M = 1.98$), $t(16) = 9.73$, $p < .001$ and mechanistic dehumanization scales ($M = 1.47$), $t(16) = 14.23$, $p < .001$.

In addition to human-, machine-, and animal-related words, it was also necessary to have a list of surnames of the groups that were going to be assessed to use it as a dependent variable. The surnames selected for the Spanish group were García, González, Fernández, Rodríguez, López, Martínez, Sánchez, Pérez, Gómez, and Jiménez, typical non-Gypsy Spanish names. The Gypsy surnames selected were Vargas, Heredia, Carmona, Flores, Morente, Amador, Cortés, Amaya, Montoya, and Salazar, typical Gypsy Spanish names. In the German group, the surnames selected were Müller, Schäfer, Schneider, Krüger, Günther, Zimmermann, Wagner, Becker, Schulz, and Schröder. All the surnames were selected from a website⁵ showing the most frequent surnames of each category on the Internet.

⁵ <http://german.about.com/od/germanicgenealogy/a/50surnames.html>
http://www.ociototal.com/recopila2/r_aficiones/apellidos.html

STUDY 1

Study 1 focused on mechanization as a form of dehumanization. To this end, the Spanish group was selected as the ingroup and the German group was selected as the outgroup.

Method

Participants

The sample was composed of 42 Spanish students from the School of Architecture of the University of Granada, who participated voluntarily in the study. Of them, 28 (66.7%) were male and 14 (33.3 %) were female. Mean age was 20.12 years ($SD = 2.98$).

Instrument and procedure

Students participated in group sessions in which they responded anonymously to tasks included in a booklet containing the various measures. In the first section of the booklet, participants were told that the study focused on perception of words. After providing socio-demographic information, participants were shown a sheet of paper with two columns. The column on the left listed the ten German surnames described in the preliminary study. The column on the right listed the 21 words selected from the preliminary study: 7 human-related, 7 machine-related, and 7 animal-related words. Participants were instructed to link each surname with one of the words of the column of words of the column on the right side of the page, choosing the word that best defined each surname. Each surname should only be linked to one word. Next, the following page of the booklet included the same task but with Spanish surnames instead. To control for a possible effect of group order, half of

participants performed the task with the German outgroup first and the Spanish ingroup second and half did it in the inverse order.

Results

A preliminary analysis of the data showed that the order in which participants completed the booklet had no significant effect on the results obtained, $F < 1$. An ANOVA was performed, with two within-participant manipulated factors: Group (Ingroup vs. Outgroup) x Type of Word (Animal-related vs. Machine-related vs. Human-related). As predicted, the interaction between the two manipulated variables – Group x Type of Word – was significant, $F(2, 33) = 10.05$, $p < .001$, $\eta^2 = .37$. As shown in Figure 1, the attribution pattern of human- and machine-related words was different depending on the group (ingroup vs. outgroup). Participants attributed more human-related words to the Spanish ingroup ($M = 3.85$, $SD = 1.28$) than to the German outgroup, ($M = 2.54$, $SD = 1.24$), $t(37) = 4.27$, $p < .01$. By contrast, they attributed more machine-related words to the outgroup ($M = 3.85$, $SD = 1.35$) than to the ingroup ($M = 2.77$, $SD = 1.16$), $t(37) = 4.72$, $p < .001$. Participants did not attribute animal-related words differently to the ingroup and the outgroup, $t(35) = 1.46$, $p > .15$.

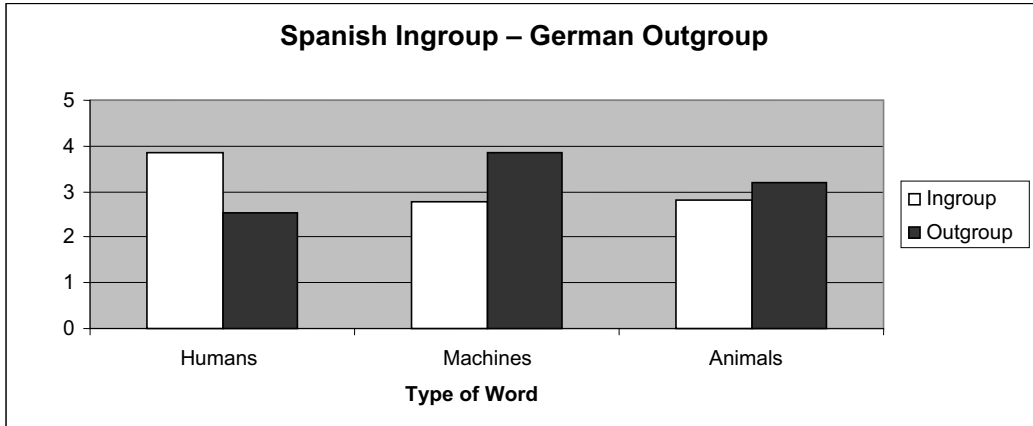


Figure 1. Number of human-, machine-, and animal-related words assigned to the Spanish ingroup and the German outgroup

These results show that, as predicted, participants humanized the ingroup by attributing more human-related words to it than to the outgroup and subjected the outgroup to mechanistic dehumanization by attributing more machine-related words to it than to the ingroup. No differences were found between the ingroup and the outgroup in the attribution of animal-related words. Therefore, the need to distinguish between mechanistic and animalistic dehumanization seems clear, given that this first study showed that the German outgroup was subjected to mechanistic dehumanization but not to animalistic dehumanization.

STUDY 2

The fact that some groups – Germans, in this case – are subjected to mechanistic dehumanization but not to animalistic dehumanization raised the following question: does the opposite happen to other groups? In other words, are other groups associated to characteristics that are typical of animals but not of

machines? In Study 2, the Gypsy category was used as the outgroup to check whether the dehumanization measure proposed in this article is also an effective instrument to measure animalistic dehumanization.

Method

Participants

A sample of 43 non-Gypsy students of the School of Architecture of the University of Granada participated voluntarily in the study. Of them, 25 (58.1%) were male and 14 (41.9%) were female. Mean age was 20.16 years ($SD = 2.72$).

Procedure

The procedure was the same as that described in Study 1. In this case, instead of using typically German surnames, ten typically Gypsy surnames were used (the outgroup) and ten non-Gypsy Spanish surnames (the ingroup).

Results

As in Study 1, an ANOVA was performed, with two within-participant manipulated factors: Group (Ingroup vs. Outgroup) x Type of Word (Animal-related vs. Machine-related vs. Human-related). Again, as in Study 1, the number of human-, machine-, and animal-related words attributed to the non-Gypsy ingroup vs. the Gypsy outgroup was different, as shown in the Group x Type of Word interaction, $F(2, 35) = 3.46, p < .05, \eta^2 = .16$. In this case, as shown in Figure 2, human-related and animal-related words were attributed differently to the non-Gypsy and Gypsy groups. Human-related words were used more to define the ingroup ($M = 4.16, SD = 1.28$) than the outgroup ($M = 3.59, SD = 1.48$), $t(40) = 2.40, p < .05$. By contrast, participants chose

animal-related words more ($M = 3.77, SD = 1.51$) to define the Gypsy outgroup than the ingroup ($M = 2.92, SD = 1$), $t(39) = 2.28, p < .01$. No significant differences were found in the attribution of machine-related words to the ingroup and the Gypsy outgroup ($t(38) = 1.49, p .14$).

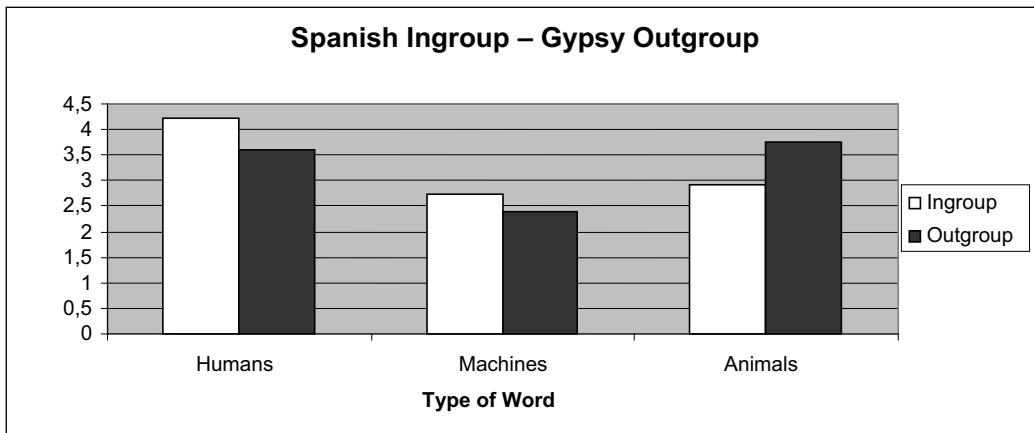


Figure 2. Number of human-, machine-, and animal-related words assigned to the Non-Gypsy ingroup and the Gypsy outgroup

Again, the results of this study show the validity of the measure proposed to distinguish between both forms of dehumanization. As in Study 1, participants perceived the outgroup as being less human than the ingroup. Yet, in contrast with their treatment of the German outgroup, participants subjected the Gypsy outgroup to animalistic instead of mechanistic dehumanization.

Discussion

Results of these two studies show the validity of a paper and pencil task to measure two different forms of dehumanization. First, a pilot study was conducted to select groups of words with the same valence perceived as being human-, machine-, and animal-related, respectively. After this, Study 1 showed that participants clearly

associated machine-related words more to German surnames and human-related words more to Spanish surnames (and associated animal-related words to Spaniards and Germans to the same extent). Similarly, in Study 2, participants associated animal-related words more clearly to Gypsy surnames and human-related words more to non-Gypsy surnames (and associated machine-related words to Spaniards and Gypsies to the same extent). This corroborates the existence of two different forms of dehumanization: animalistic dehumanization and mechanistic dehumanization. The studies were conducted using a more or less explicit measure, given that participants may have been aware, at least in some cases, that the words were related to animals and machines; it is also likely that they are aware that the surnames were typically German or Gypsy. Given the lack of time pressure in the experiment, participants may also have controlled their responses.

STUDIES 3 AND 4

In the studies presented below, an implicit measure was used to verify whether the same results of Studies 1 and 2 were replicated, that is, whether the Gypsy outgroup is automatically associated to animal-related words and the German outgroup is associated to machine-related words, whereas the ingroup is associated with human-related words. The IAT was used for this purpose. The IAT was selected because it is one of the measures with the highest validity indices in this area and also one of the procedures most widely used in studies with implicit measures in Social Psychology. Study 3 measured the associations between the Spanish/German implicit association and the human/machine pair; Study 4 measured the associations between

the non-Gypsy/Gypsy association and the human/animal pair. Given that the methodology used in Studies 3 and 4 was the same, with the only difference of the groups selected, the procedure used in both studies is described in detail in the section on Study 3.

STUDY 3

Method

Participants

The sample included 66 Spanish university students, who received course credit for participating in the experiment. Of them, 57 (86.4 %) were female and 9 (13.6 %) were male. Mean age was 19.8 years ($SD = 6.38$).

Procedure

The IAT proposed by Nosek, Greenwald, and Banaji (1997) is composed of seven blocks (see Table 1). In the present study, participants had to decide whether each of the items presented in the center of the screen corresponded to Spanish or German (when the word shown was a surname) or to humans or machines (when the word shown was one of the nouns or adjectives related to these groups that had been selected in the pilot study). Participants assigned each word to a category by pressing a key on the left or the right of the computer keyboard depending on the categories and attributes that appeared on the top left and right corners of the screen. For example, if “García” appeared in the centre and the category “Spanish” appeared on the top left corner and the category “German” appeared on the top right corner, participants had to press the key on the left. In a series of practice rounds, only one category or attribute appeared on the top corners of the screen and participants had to classify the

stimuli presented in the centre according to the category they belonged to. However, in the most relevant trials for the purposes of this research, the top left and right corners of the screen showed two categories at the same time, one referring to citizenship (Spanish or German) and one referring to machine- human category. Two types of such blocks were used – congruent and incongruent ones. In the congruent blocks, the two categories presented in the same location of the screen corresponded to the categories humans and Spanish or German and machines (either on the right or on the left); such blocks were considered congruent because *a priori* and based on the results of Study 1, Spaniards (the ingroup) were expected to be more associated to humans than Germans, and Germans were expected to be more associated to machines than Spaniards. In incongruent trial blocks, the two categories shown on the same side of the screen were Spanish and machines or German and humans. As is usual with this technique, the order of these two blocks and the location of the two categories shown in the same place were counterbalanced across participants. Table 1 shows the different trial blocks used in Studies 3 and 4. Blocks B3 and B4 were congruent and blocks B6 and B7 were incongruent.

Six items were used in each of the four categories used. They were all selected from the pilot study explained above. The items included in the category “Spanish” were García, Fernández, Rodríguez, López, Jiménez, and González. The surnames included in the category “German” were Müller, Schneider, Wagner, Becker, Schulz, and Schäfer. Words included in the category “human” were *Gente* (People), *Ciudadano/a* (Citizen), *Habitante* (Inhabitant), *Individuo* (Individual), *Pasivo/a* (Passive), and *Soltero* (Single), and the items of the category “machines” were

Dispositivo (Device), *Instrumento* (Instrument), *Herramienta* (Tool), *Máquina* (Machine), *Tecnológico* (Technological), and *Mecánico* (Mechanical).

Table 1: Sequence of Blocks in the IAT

Block	Categories located on the left side of the screen and assigned to the left response key	Items assigned to the right response key
B1	Spanish (Non-Gypsy)	German (Gypsy)
B2	Humans (Humans)	Machines (Animals)
B3	Spanish + Humans (Non-Gypsy + Humans)	Germans + Machines (Gypsy + Animals)
B4	Spanish + Humans (Non-Gypsy + Humans)	German + Machines (Gypsy + Animals)
B5	German (Gypsy)	Spanish (Non-Gypsy)
B6	German + Humans (Gypsy + Humans)	Spanish + Machines (Non-Gypsy + Animals)
B7	German + Humans (Gypsy + Humans)	Spanish + Machines (Non-Gypsy + Animals)

Note: The order of blocks B1, B3, B4, and B5, B6, B7, was counterbalanced across participants. Categories used in Study 4 are shown between parentheses

Results

Data analysis

Following the indications of Greenwald, Nosek, and Banaji (2003), we eliminated trials in which participant reaction times (RTs) were lower than 10,000 ms and data of participants with more than 10% of RTs lower than 300 ms. In addition, RTs of trials in which participants responded incorrectly were replaced by the mean of the respective trial series, adding 600 ms. RTs were analyzed using Algorithm D6, considered by Greenwald et al. (2003) to be the most appropriate to analyze the results of the IAT.

Implicit association

According to Greenwald et al. (2003), the IAT effect shown with Algorithm D6 is significant when it differs from 0. The IAT effect is an index of the RT difference of incongruent minus congruent blocks. Therefore, when the IAT effect is significantly greater than 0, it shows that participants have responded to congruent blocks faster than to incongruent blocks. To test our hypothesis, a *t* test for independent measures was performed, comparing the IAT effect (D6) to 0. This analysis showed that, as predicted, the IAT significantly differed from 0 ($M = .38$, $SD = .29$), $t(65) = 10.63$, $p < .00$. Next, related sample comparisons were performed to verify whether participants took less time to classify the various items in the congruent condition (Spanish/humans and German/machines) than the incongruent condition (German/humans and Spanish/machines). Results showed significant differences, $t(65) = 8.07$, $p < .001$), in the time participants needed to classify the various items

presented. They were faster in the congruent condition ($M = 707.01$, $SD = 94.03$) than in the incongruent condition ($M = 838.54$, $SD = 136.95$).

STUDY 4

Method

Participants

The sample was composed of 64 non-Gypsy Psychology university students, who obtained course credits for their participation. Of them, 53 were female (82.8 %) and 11 were male (17.2 %). Mean age was 18.47 years ($SD = 1.89$).

Procedure

The procedure used was the same as in Study 3, with the only difference that the groups used were Gypsy (outgroup) and non-Gypsy (ingroup). As in Study 2, this time animal-related words were used instead of machine-related words. To verify whether the result obtained in Study 2 – animalistic dehumanization of the Gypsy group – was also obtained with an implicit measure, the IAT was used again. Table 1 shows the seven blocks of this test. The categories non-Gypsy and humans on one side and Gypsy and animals on the other were considered congruent because, according to our predictions and the results of Study 2, there is a cognitive association between them. Therefore, when participants had to respond to them with the same response key they were expected to be faster than when they had to respond to incongruent categories with the same key (i.e., non-Gypsy and animals or Gypsy and humans).

The items used in this study were selected from the pilot study. The non-Gypsy category included the typical non-Gypsy surnames García, López, Martínez, González,

Pérez, and Sánchez, whereas the Gypsy category included the typical Gypsy surnames Heredia, Cortés, Carmona, Flores, Montoya, and Amaya. The items of the category humans were *Gente* (People), *Ciudadano/a* (Citizen), *Habitante* (Inhabitant), *Individuo* (Individual), *Pasivo/a* (Passive), and *Soltero/a* (Single), and those of the category machines were *Animal* (Animal), *Pedigrí* (Pedigree), *Raza* (Breed), *Salvaje* (Wild), *Irracional* (Irrational), and *Manso* (Tame).

Results

Implicit association

The strategy used for this analysis was the same as in Study 3. A *t* test for independent measures was used to determine whether the IAT effect (calculated with Algorithm D6) differed from 0. This analysis showed that, as predicted, the IAT effect was significantly greater than 0 ($M = .31$, $SD = .23$), $t(63) = 10.93$, $p < .001$. To verify whether participants were faster categorizing the various items in the congruent condition (non-Gypsy/humans and Gypsy/animals) than in the incongruent condition (Gypsy/humans and non-Gypsy/animals), a *t* test for related samples was performed. This analysis showed significant differences $t(63) = 9.92$, $p < .001$ in the time needed by participants to categorize the various items presented: they responded faster in the congruent condition ($M = 840.91$, $SD = 167.13$) than in the incongruent condition ($M = 1002.54$, $SD = 204.36$).

Discussion

Results of these two studies corroborate the validity of the items selected to measure two forms of dehumanization – animalistic and mechanistic dehumanization

– implicitly, using the IAT. Participant responses show that they make a cognitive association – beyond their ability to control their responses – between machine-related words and Germans (Study 3), animal-related words and Gypsy (Study 4), and human-related words and the ingroup (Spanish or non-Gypsy).

General discussion

This study was conducted in the framework of a new way of understanding prejudice in the intergroup context. Allport (1954) defined prejudice as a negative attitude or predisposition to adopt a negative behavior towards a group or its members based on an erroneous and rigid generalization. However, according to Pettigrew and Meertens (1995), there are other more automatic and subtle forms of prejudice in our society. The study on dehumanization followed this approach and tried to come closer to an analysis of subtle prejudice arguing that some groups are not perceived as being human. The theory of infrahumanization is one of the best known proposals in the study of dehumanization. It is a phenomenon that has been proven consistently by various authors with different procedures and in different contexts. Yet, most studies on this subject have measured this phenomenon using the association between secondary emotions and the ingroup on one side and primary emotions and the outgroup. We consider this approach to be incomplete, because, as Haslam (2006) proposed, some groups are subjected to animalistic dehumanization while others are subjected to mechanistic dehumanization. According to Haslam, animalistic and mechanistic dehumanization are the two ways in which people dehumanize members of groups they do not belong to.

How can we measure mechanistic dehumanization? Is it possible to measure animalistic and mechanistic dehumanization using stimuli other than primary and secondary emotions? The measures most widely used to analyze infrahumanization (attribution of primary and secondary emotions) cannot be used to measure dehumanization based on mechanization of outgroups. Therefore, our aim was to create a new measure that can be used to distinguish between both types of dehumanization. Studies 1 and 2 used a simple and direct task in which participants had to link the surnames of the outgroup and the ingroup to a list of human-, animal-, and machine-related words. This study confirmed our hypotheses, showing that ingroup surnames were linked more to human-related words in both studies and outgroup German surnames were linked more to machine-related words (Study 1); by contrast, surnames of the Gypsy outgroup were linked more to animal-related words (Study 2). Results replicated the data provided in the literature on dehumanization, in which the ingroup is usually associated to humans whereas the outgroup is usually dehumanized. Interestingly, the German outgroup was dehumanized mechanistically in this research, while Germans were associated to more animal-related words than human-related words in research by Viki et al. (2006). Given that the study by Viki et al. (2006) did not include machine-related words or categories, it is not possible to know whether participants would have selected more machine-related words to describe the outgroup if they had been given the chance to do so.

We consider that the potential of the measure described to determine how outgroups are dehumanized is a new contribution of the present study. The paper and pencil measure is direct, easy, and simple to use. Classic studies on infrahumanization

propose a subtle methodology in which participants attribute emotions and stimuli to various groups. By contrast, this research used more explicit stimuli that clearly referred to humans, machines, or animals. With the data available, it is not possible to know whether participants were aware or not of the aims of the research as well as of the categories and stimuli presented to them. On the one hand, participants were told the research focused on perception of words to prevent them from guessing the aim of the study. It is also possible that, if participants had been aware of the real intentions of the study, this would have been reflected in the results, due to social desirability issues. On the other hand, as mentioned above, the absence of time pressure in the responses and the characteristics of the stimuli and categories may have allowed participants to become aware of the objectives of the study. Yet, even if this were so, the results obtained show the same pattern of results as the literature on infrahumanization: associating the ingroup to humans and the outgroup to animals. This leads us to consider that this measure is reliable and, most importantly, useful. In addition, given that this instrument has proven to be valid to study animalistic dehumanization, we consider it is also valid to measure the other form of dehumanization: mechanistic dehumanization.

So far, only the measure of emotions and feelings used by Leyens et al. (2000, 2001) is available in Spanish. This measure is useful to determine to what extent people infrahumanize (animalistically dehumanize) the outgroup. The measure we propose provides the Spanish-speaking community with a tool to analyze how various outgroups are dehumanized.

The results obtained show that people do not always dehumanize members of outgroups seeing them as animal-like but that certain outgroups are seen as machine-like. We believe that this measure can contribute to a more thorough approach to dehumanization. Therefore, this measure can allow future studies to prove whether the fact that there are different forms of dehumanization implies that such discrimination has different consequences.

Studies 3 and 4 applied an implicit methodology using the same items as the measures used in Studies 1 and 2. This increased the validity of the results obtained in the first two studies with the new measure proposed.

Analyzed jointly, our results show that some outgroups are infrahumanized by being perceived as animals more than humans. This is the case of the Gypsy community, which has traditionally been one of the groups subjected to most prejudice and discrimination in Spain (Gómez-Berrocal & Ruiz, 2001). The fact that Spain is one of the European countries that has received the highest number of immigrants in recent years has not improved the current situation of the Gypsies (Rodríguez-Bailón, Ruiz, & Moya, 2009) In fact, according to some studies, prejudice and discrimination towards Gypsies is greater than prejudice towards other minorities such as North Africans or South Americans (Rodríguez-Bailón, Barranco & Casado, 2000; Rodríguez-Bailón & Puertas, 2000; Rueda & Navas, 1996). The relationship between non-Gypsies and Gypsies has been one of the intergroup dynamics most studied by Spanish sociologists, anthropologists, and social psychologists over the last decades. We believe that the dehumanization perspective should also be taken into account when analyzing the discrimination that this group has suffered for so long.

Depriving Gypsies of humanity and associating them with animals can have serious consequences. This is particularly so when the group that infrahumanizes has to share the same space and have a certain contact with the animalistically dehumanized group. This is the case of everyday relations between non-Gypsies and Gypsies. Yet, although certain groups are subjected to animalistic dehumanization, as happens to Gypsies, this does not necessarily reflect a totally negative and hostile view of groups subjected to it. After all, contact with animals can be positive and satisfactory, although it is also possible to have a relationship based on exploitation. Future studies should clarify these possible consequences – both positive and negative – of animalistic dehumanization.

Research has typically focused on intergroup relationships with groups traditionally discriminated against (non-Gypsies and Gypsies, whites and blacks). Little attention has been given to intergroup relationships that do not seem to be in conflict, such as those of Germans and Spaniards (Morera et al., 2004). Yet, dehumanization theorists (Haslam, 2006; Leyens et al. 2000; Leyens, Demoulin, Vaes, Gaunt & Paladino, 2007) underline the importance of this phenomenon in a broad variety of social spheres. They argue that dehumanization also takes place outside the contexts of intergroup violence and conflict where it has generally been considered to occur. Our results show that intergroup conflict is not necessary for people to dehumanize the outgroup. Results of Studies 1 and 3 prove that Spanish participants mechanistically dehumanized Germans. We consider that is of key importance for future studies to explore the consequences of this new form of dehumanization on the members of

mechanistically dehumanized groups and the causes that lead people to dehumanize groups in one way or another.

In this study, we chose two specific groups which we thought *a priori* were likely to be subjected to animalistic and mechanistic dehumanization, respectively. Results confirmed our hypothesis, given that one group was more linked to animal-related words and the other was more linked to machine-related words. However, future studies should determine the degree of generalization of this type of perception of outgroups depending on the two dimensions presented: animalistic and mechanistic dehumanization. They will also have to answer questions such as the following: Are outgroups often perceived in terms of these two dimensions? Are there groups perceived as animal-like and machine-like in all contexts, or does it depend on the context?

Future studies will need to answer questions such as, to what extent are people ready to interact with members of dehumanized groups? Are there contexts in which the members of mechanistically dehumanized groups may be preferred (e.g., professionally) to members of animalistically-dehumanized ones? Does animalistic dehumanization have more negative consequences than mechanistic dehumanization? Is this always so? Does dehumanization have an influence on the interpersonal distance people set with members of outgroups? Which psychosocial factors lead to the occurrence of one type of dehumanization or the other?

Finally, in research on dehumanization, the creation of measures such as that presented in this study sheds some light on some of the different forms of dehumanization and makes it possible to study its consequences. Importantly, the

results from these studies can be applied to real context. Discriminating behaviors and intergroup conflicts can only be prevented and eradicated if we have enough knowledge of this type of attitudes.

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Attitudes, Emotions and Behaviours toward Animalistically and Mechanistically Dehumanized Groups

(The studies described in this article are included in the doctoral thesis as Studies 7 and 8)

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Abstract

Two forms of dehumanization have been proposed in Social Psychology literature: animalistic and mechanistic. In Study 1, we studied these two forms of dehumanization in a set of 31 relevant social groups in American society. We found that participants were more likely to associate certain groups (e.g. Arabs, Gypsies) with animal-related words, and others (e.g. Germans, Japanese) with machine-related words. In a second study, we compared the consequences of animalistic and mechanistic dehumanization. Specifically, we focussed on emotions, behavioural tendencies and prejudice toward the groups in question. Our findings showed that animalistic dehumanization elicited more negative emotions, behavioural tendencies, and prejudice than mechanistic dehumanization. However, when comparing the ingroup for mechanistic dehumanization, we found that the attribution of positive emotions and behaviour were reserved to a greater extent to the ingroup rather than to the mechanistically dehumanized outgroups. These results highlight the importance of studying the consequences of animalistic and mechanistic dehumanization in order to better understand its implications on intergroup relations.

Keywords: *dehumanization, animalistic dehumanization, mechanistic dehumanization, metaphor-based approach, emotions, behavioural tendencies, prejudice.*

Prejudice exists. Sometimes, it is overt (aversive racism, hostile sexism, etc.), and sometimes, it is not readily perceivable (e.g. subtle racism, benevolent sexism, etc.); accordingly, we should be aware that prejudice is still alive (Yzerbyt & Demoulin, 2010), although it may be manifested in different ways (Gaertner & Dovidio, 1986). Indeed, a subtle form of bias is to consider people from different groups as being less human than individuals from one's own group; in other words, to dehumanize them. The dehumanization approach suggests that to dehumanize "can be a toxic form of prejudice" (Castano & Gibert-Sorolla, 2006, p. 86), which may occur in extreme situations (Bar-Tal, 1989; Hodson & Costello, 2007), but can also be observed in situations where no conflicts exist (Demoulin et al., 2005).

What is dehumanization?

Dehumanization of others could be considered to be one of the worst kinds of prejudice (Allport, 1954). It truly seems difficult to imagine anything more negative than considering others as not being fully human. This bias would indicate that people tend to attribute less humanness to outgroups compared to ingroups. This tendency has been termed "infracumanization" by Leyens and colleagues (2000). For these authors, to infracumanize means "to perceive members of outgroups as somewhat less human, or more animal-like, than themselves" (p. 143). Other researchers, however, adopt a different approach when conceptualizing this phenomenon. For example, Haslam (2006) referred to it as "dehumanization", and underlined the importance of distinguishing between animalistic and mechanistic dehumanization. The first form (i.e. animalistic dehumanization) is close to what Leyens, Demoulin,

Vaes, Gaunt & Paladino (2007) termed *infracommunication*. Thus, *animalistic dehumanization* occurs when people perceive others as lacking civility, rationality, maturity, refinement, and morality (Haslam, 2006; Haslam & Loughnan (2012). Consequently, *animalistically dehumanized* individuals are seen as irrational, coarse, immoral, unintelligent and uncultured. *Mechanistic dehumanization*, in contrast, implies perceiving others as machine-like, i.e. cold, rigid, superficial, and mechanical. Indeed, *mechanistic dehumanization* occurs when people think of members of the outgroups as lacking emotional responsiveness, cognitive openness, agency, and depth (Haslam, 2006; Haslam et al., 2012).

Attribute-based and Metaphor-based Dehumanization

Loughnan, Haslam, and Kashima (2009) recently proposed a distinction between *Attribute-based* and *Metaphor-based* approaches in the research on dehumanization. According to these authors, most of the research in this field could be described as *attribute-based dehumanization* research. This approach would comprise all studies that start out by defining a number of human characteristics and subsequently focus on exploring to what extent these are attributed or denied to the ingroup and the outgroup. For instance, the approach adopted by Leyens and colleagues would be representative of the *attributed-based* category (Loughnan et al., 2009). Furthermore, in order to investigate whether people reserve most of the human attributes for the ingroup, they first defined what they considered such human attributes to be. In the case of an approach involving *infracommunication*, emotions became the factor that captured *infracommunication*. Leyens et al. (2001) distinguished between *primary emotions* (emotions we share with animals, e.g. sadness), and

secondary emotions (emotions that are uniquely human, e.g. remorse). Furthermore, primary and secondary emotions were considered to be a measure of infrahumanization, given that they are a useful tool in determining whether people are denying secondary emotions to the outgroups. In fact, according to Leyens et al. (2007), “infra-humanization occurs when the association or attribution of secondary emotions, regardless of their valence, is greater for ingroup members than for outgroup ones, and when such a difference does not appear for primary emotions” (p. 147). Given the fact that these authors consider the attribution of certain attributes (uniquely human emotions) to be an indicator of infrahumanization, this approach has been included among the attribute-based approaches.

Similarly, Haslam’s paradigm of dehumanization has also been included in the attribute-based category. However, unlike Leyens’ approach, which relies on the attribution of emotions to capture infrahumanization, Haslam focuses on the attribution of personality traits; part of his research was aimed at distinguishing between animalistic and mechanistic dehumanization. This author first differentiated between two sets of personality traits: Human Uniqueness (civility, refinement, moral sensibility, etc.), and Human Nature (cognitive openness, depth or emotional responsiveness). Thus, according to his model (Haslam, 2006), if people deny Human Uniqueness to certain outgroups, it should be assumed that they will be dehumanizing them in an animalistic fashion, whereas if they deny Human Nature to such outgroups, they will be dehumanizing them mechanistically.

According to Loughnan et al. (2009), research on dehumanization can also be characterized as metaphor-based. This dimension examines the likening of outgroups

to animals or robots. In this case, unlike the attribute-based approach, researchers do not ask participants to attribute emotions or traits to the outgroups in order to measure dehumanization, and rather look at how outgroups are likened to non-human entities (i.e. animals or robots). It is important to note, as Loughnan and colleagues (2009) pointed out, that research carried out using the metaphor-based approach has typically focused on the likening to animals, which is hardly surprising considering the abundance of animal metaphors (Haslam, Loughnan and Sun, 2011). In the Rwandan Genocide in 1994, the Rwandan Hutus referred to the Tutsis as “cockroaches”; during the Second World War, the Nazis called the Jews “rats”. Thus, metaphors elicit strong images that can be extremely harmful to the targets they are used to describe (Vaes, Leyens, Paladino & Pires-Miranda, 2012).

Viki et al. (2006) used the metaphor-based approach in a study in which the authors carried out several experiments in order to determine whether people differentially attributed words associated with animals (e.g. wildlife) and humans (e.g. people) to ingroups (British people) and outgroups (German, Italian and French people). Different procedures were used, and the main results obtained showed that participants associated their ingroup with more human-related words than animal-related words. Besides Viki and colleagues, other researchers have focused on the metaphor-based approach (Haslam et al., 2011; Boccato, Capozza, Falvo, & Durante, 2008; Kellow & Steeves, 1998). However, little research has been devoted to studying how groups may also be linked to machine-like images. One of the few studies on this topic was reported by Loughnan and Haslam (2007), who showed that while some groups (e.g. artists) are likened to animals, others (e.g. business people) are likened to

robots. Martínez, Rodríguez Bailón, and Moya (2012) applied the procedure developed by Viki and colleagues to investigate whether different outgroups were animalistically or mechanistically dehumanized; the authors duly created a new task to measure dehumanization from a metaphor-based perspective. They carried out two studies in which participants were asked to link the surnames of German/Spanish people belonging to the outgroup/ingroup respectively (Study 1), and likewise, of Gypsy/non-Gypsy people (Study 2), to a list of human-, animal-, and machine-related words. Results showed that, in both studies, the ingroup surnames were linked to more human-related words. More interestingly, compared to the ingroup, German surnames were linked to more machine-related words, whereas Gypsy surnames were linked to more animal-related words. Two additional studies replicated the results, using an implicit methodology. However, the task developed by Martínez et al. (2012) presents some limitations, i.e. given that it was developed in Spanish, its use is restricted to Spanish speakers. Moreover, the authors only tested it with two specific outgroups (Gypsies and Germans).

Considering the importance of developing new tasks and scales for measuring the two forms of dehumanization, i.e. animalistic and mechanistic, the aim of this study was to address this gap, using a metaphor-based approach. Specifically, in Study 1, we propose a new task for the English-speaking community that might be used by social psychologists and researchers interested in analysing this phenomenon.

What is the impact of dehumanization on intergroup relations?

Although it is important to study how different groups are perceived in the mechanistic and animalistic dimensions, it is even more important to study whether

these perceptions affect feelings and behaviour toward members of these groups. In the last decade, more than a hundred studies have broadened our knowledge on dehumanization and its consequential effects (Vaes et al. 2012). Results from these studies showed that dehumanization does have important behavioural consequences that may undermine intergroup relations (Leyens et al. 2007). For example, a study conducted by Cuddy, Rock, and Norton (2007), in the aftermath of Hurricane Katrina, analysed the impact of infrahumanization on individuals' intention to help victims. One of the main findings of the study shows a positive relationship between the attribution of secondary emotions (uniquely human emotions) and the intention to help people in need. Similarly, other studies have explored different effects, stemming from the attribution of primary and secondary emotions, on intergroup relations, focusing on the assessment of victims of atrocities (Castano et al. 2006; Cehajic, Brown & Gonzalez, 2009), perspective taking (Vaes et al., 2004), political credibility (Vaes, Paladino, & Magagnotti, 2011), or approach and avoidance behaviours (Vaes, Paladino, Castelli, Leyens, & Giovanazzi, 2003). The latter studies found that participants were more likely to approach in-group members and avoid out-group members whenever both groups had been previously described as having secondary emotions (Vaes, et al. 2003). Nevertheless, most of the aforementioned studies have focused on animalistic dehumanization and the attribution of primary and secondary emotions to the ingroup vs. the outgroup. Further research is needed comparing animalistic and mechanistic dehumanization in order to foster better understanding of the dehumanization phenomenon. In this sense, Bastian, Laham, Wilson, Haslam, and Koval (2011) showed that mechanistic dehumanization (i.e. groups lacking HN traits) implies the perception

of the groups as less deserving of moral treatment, and less capable of proactively contributing to the moral community. Animalistic dehumanization (i.e. lack of HU traits), in comparison, involves the perception that outgroup members are unable to inhibit immoral behaviours, and therefore, are less deserving of punishment when they act immorally. Other research has compared animalistic and mechanistic dehumanization with regard to intention to interact with dehumanized people in different contexts. Results showed that while animalistically dehumanized groups were preferred for interaction within social contexts (e.g. in a disco), mechanistically dehumanized groups were preferred for interaction in work-related situations (e.g. at the office). More interestingly, said intention to interact was observed solely when animalistically and/or mechanistically dehumanized groups might enable participants to attain their goals, i.e. outgroup members were instrumentalized in these situations (Martínez, Rodríguez-Bailón, Moya and Vaes (studies 9 and 11 in the present dissertation)).

In order to further this idea, which tries to disentangle the effects of mechanistic and animalistic forms of dehumanization, the aim of the second study reported herein was to compare the effects of animalistic and mechanistic dehumanization on different emotional and behavioural responses to certain outgroups.

Current research

In our current research, we examined Animalistic and Mechanistic forms of dehumanization in two studies. Following the work of Martínez and cols. (2012), Study 1 presents an English version of an instrument used to measure animalistic and

mechanistic ways of dehumanization, using a metaphor-based approach. Furthermore, we applied this instrument to a large number of social groups; we evaluated thirty-one different groups that included people of diverse nationality, race, age, sex, occupation, etc. The findings allowed us to determine how each of these groups was perceived in terms of machine-likeness or animal-likeness.

In Study 2, we studied some of the consequences of dehumanization, differentiating between the animalistic and mechanistic forms. Emotions and behavioural tendencies were measured following presentation of a real animalistically or mechanistically dehumanized group.

STUDY 1

In the first study, the aim was to identify which groups, from a large set of real groups, were animalistically or mechanistically dehumanized. Although other researchers have empirically supported this idea (Bastian et al., 2011; Bain, Park, Kwok & Haslam, 2009; Loughnan et al., 2007), our study is innovative in that it creates a new measure in English that distinguishes between animalistic and mechanistic dehumanization, using a metaphor-based approach. So far, the only explicit measure to be obtained using a metaphor-based approach has been animalistic dehumanization (Viki et al., 2006). Inspired by Viki et al. (2006), and Martínez et al. (2012), we used human-, animal- and machine-related words to measure the phenomenon. The goal of this task is to test whether people will differentially relate these words directly to different real groups. It is possible that, similarly to the results obtained by Martínez et al. (2012) with Spanish participants, English-speaking participants might perceive

certain relevant outgroups as being machine-like (e.g. Koreans), or animal-like (e.g. Arabs). These results would suggest that animalistic and mechanistic dehumanization might also be analysed by using more direct stimuli, linked to animalistic and mechanistic dehumanization, rather than using emotions or personality traits as measures, as has been the case until now.

Method

Participants

Two hundred and twenty-seven English-speaking participants (56.4 % female, 43.2 % male) from the general population completed an online survey specially created for the study. We used the Amazon.com Mechanical Turk web service to run the study, and participants were paid for their participation. The majority of participants were American (85.5 %), average age 34.92 years ($SD = 13.74$). Participants included: 191 (83.8 %) Whites/Caucasians; 8 (3.5 %) Blacks; 16 (7 %) Asians/Pacific Islanders; 6 (2.6 %) Hispanics or Latinos; and 5 (2.2 %) reported a different ethnicity.

Materials

Words

First, a pilot study was run in order to select the words to be included in the measure. Using a within-participants design, we had 88 college students evaluate a list of ninety-five words taken from the dictionary. Specifically, they were asked to rate to what extent these words were human-, animal-, or machine-related, using a Likert scale from 1 (e.g. not human-related, not animal-related, not machine-related) to 5 (e.g. very human-related, very animal-related, very machine-related) respectively.

Finally, we also asked participants to evaluate the valence of each word presented (1 = totally negative, 7 = totally positive).

A score was obtained for the human, animal, machine, and valence measures of each of the words assessed. On the basis of these scores, we selected four words strongly related to the human category: *Person* ($M = 5.65$), *Civilian* ($M = 5.36$), *People* ($M = 5.46$), and *Folk* ($M = 4.38$); four words for the animal category: *Instinct* ($M = 4.85$), *Native* ($M = 3.71$), *Pedigree* ($M = 5.38$), and *Primitive* ($M = 4.54$); and lastly, four words for the machine category: *Automatic* ($M = 4.94$), *Calculating* ($M = 4.27$), *Structured* ($M = 3.98$), and *Technological* ($M = 5.36$).

First, we carried out a repeated measures analysis of the Humanness score for the different sets of words (human, animal and machine), as a within-subject factor. Results showed a main effect of Humanness, $F(2,166) = 204.28$, $p < .001$; $\eta^2 = .71$. Likewise, we obtained a main effect for the Animalness score, $F(2,166) = 163.11$, $p < .001$; $\eta^2 = .66$. Lastly, a final analysis gave us a main effect for the Machineness score of the different sets of words, $F(2,166) = 124.51$, $p < .001$; $\eta^2 = .60$.

We then made different t-test comparisons in order to analyse differences in the perception of humanness, animalness and machineness within the different sets of words. On analysis, the set of human words was perceived as more human-related ($M = 5.21$) than the highly animal-related words ($M = 3.24$, $t(83) = 12.80$, $p < .01$) and the words from the machine category ($M = 2.02$, $t(83) = 15.08$, $p < .01$). On analysing Animalness (i.e. to what extent participants considered the words as being animal-related), results show that the words included in the Animal category were perceived

as being more animalistic ($M = 4.62$) than the words in the Human set of words ($M = 1.49$, $t(83) = -16.23$, $p < .01$) or the Machine words ($M = 1.45$, $t(83) = 17.71$, $p < .01$). Lastly, we made several comparisons to examine the differences on the Machineness score (i.e. to what extent participants considered the words to be machine-related). These analyses showed that, as intended, the machine-related words were judged as being more machine-related ($M = 4.64$) than the human-related ($M = 1.14$, $t(85) = -15.66$, $p < .01$) and animal-related words ($M = 1.12$, $t(85) = -16.06$, $p < .01$).

We then carried out a repeated measures analysis, using valence as a within-factor. Results showed a main effect of valence, $F(2,174) = 32.48$, $p < .001$; $\eta^2 = .27$. Several t-test comparisons showed that human-related words were perceived as being more positive ($M = 4.08$) than animal-related words ($M = 3.16$, $t(87) = 6.59$, $p < .01$) or machine-related words ($M = 2.96$, $t(87) = 6.33$, $p < .01$). Nonetheless, it is important to point out that the words used for measuring animalistic and mechanistic dehumanization did not differ in terms of valence ($t(87) =$, $p > .05$).

Groups

Participants completed a questionnaire that included 31 social groups selected from previous work (Fiske, Cuddy & Glick, 2007; Fiske, Cuddy, Glick, & Xu, 2002; Haslam, 2006; Lee & Fiske, 2006; Bastian et al. 2011). Specifically, the groups selected were: *Gypsies, Africans, Spanish, Italians, Portuguese, Jews, French, Germans, Dutch, Arabs, Koreans, Chinese, Japanese, People with disabilities, People with mental illnesses, Elderly people, Housewives, Engineers, Rich people, Criminals, Soldiers, Pilots, Doctors, Illegal immigrants, Businesswomen, Obese people, Athletes, Homeless people, Poor people, Welfare recipients, and Drug addicts.*

After completing their demographic data, participants were presented with the task specifically created for this study. We used the twelve words selected in the pilot study (four for each category: human, animal and machine); words were listed on the left side of the page (see Appendix 1). Participants were asked to indicate to what extent they considered that the listed words described the different groups presented, using a 7-point scale (1 = not at all; 7 = extremely). Both the words and the groups were randomly displayed. Each participant rated 15 groups (randomly selected) of the 31 groups included in the study.

Results and discussion

Three average scores were computed for each participant's ratings of the words included in the three categories that were evaluated (human, animal, and machine) for all groups included in the study. Thus, we created a humanness, animalness and machineness score for each group (see Table 1).

We then conducted several t-test paired comparisons in order to determine whether the animalness, machineness and humanness scores varied between the different groups. As predicted, some groups were associated more intensely with animal-related words, whereas others were associated with machine-related words. It is also important to point out that participants, in general, assigned a high score to the different groups in the human dimension. Results showed significant differences in the animalistic and mechanistic perception for most of the groups (see Table 1). Marginal differences were found for the Dutch ($p = .63$) and the Italians ($p = .07$), and animal-related and machine-related words were used to the same extent to describe the following groups: Criminals, Housewives, Welfare Recipients and the French ($p > .05$).

The results of this first study show how, by using an explicit task, we were able to capture how people animalistically and mechanistically dehumanize a large number of groups. We found that while some groups are described using animal-related words, i.e. Africans or Gypsies, others are described using more machine-related words, i.e. the Chinese or Germans. Accordingly, the findings highlight a significant animalistic dehumanization of certain groups; however, when we looked at dehumanization in intergroup contexts, mechanistic dehumanization comes to the fore.

Although the main goal of this study does not focus on the attribution of humanness, we also made different t-test comparisons between the humanness and the animalness scores. Results showed that all groups were assigned more human-related words than animal-related words (all $ps < .05$). Similarly, on comparing the humanness and machineness scores, we found that more human-related words than animal-related words were used to describe all groups (all $ps < .05$). The only exception was when we examined the differences between the human-related and machine-related words attributed to *Pilots*, where no significant differences emerged ($p > .05$). It is important to bear in mind that the groups shown on the questionnaire were actually groups of people, and therefore, human beings. Likewise, it should be borne in mind that, in the pilot study, human-related words were judged as being more positive than the other two categories of words (animal- and machine-related), and therefore, it is also possible that participants might have used human-related words to describe the groups, because of social desirability.

Table 1. Mean attribution of Animal and Machine Scores to each group

	Animal Score		Machine Score			Animal Score		Machine Score	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Homeless people	3.45 ^a	1.25	2.28 ^b	1.12	Germans	3.47^a	1.36	4.57^b	1.51
Poor people	3.44 ^a	1.20	2.75 ^b	1.24	Chinese	3.61^a	1.23	4.75^b	1.61
Welfare recipients	3.04 ^a	1.29	2.96 ^a	1.23	Japanese	3.72^a	1.58	4.94^b	1.37
Criminals	3.28 ^a	1.32	3.15 ^a	1.47	Dutch	3.45 ^a	1.37	3.66 ^a	1.53
Drug addicts	3.12 ^a	1.45	2.40 ^b	1.33	Engineers	3.47 ^a	1.42	5.69 ^b	1.15
People with mental illnesses	3.01 ^a	1.32	2.43 ^b	1.29	Soldiers	3.55 ^a	1.30	4.85 ^b	1.34
Elderly people	3.64 ^a	1.37	3.08 ^b	1.24	Koreans	3.46 ^a	1.14	4.36 ^b	1.46
Illegal immigrants	3.09 ^a	1.29	2.75 ^b	1.19	Rich people	3.46 ^a	1.14	4.47 ^b	1.38
Obese people	3.23 ^a	1.21	2.92 ^b	1.41	People with disabilities	3.09 ^a	1.34	3.55 ^b	1.40
Africans	4.03^a	1.28	3.20^b	1.23	Business Women	3.47 ^a	1.41	4.80 ^b	1.39
Arabs	3.98^a	1.38	3.74^b	1.47	Doctors	3.91 ^a	1.27	5.24 ^b	1.38
Gypsies	3.99^a	1.20	2.58^b	1.14	Jews	3.63 ^a	1.43	4.13 ^b	1.57
Spanish	3.58 ^a	1.34	3.36 ^b	1.45	Athletes	3.85 ^a	1.35	4.19 ^b	1.39
Portuguese	3.65 ^a	1.38	3.42 ^b	1.39	Pilots	3.57 ^a	1.39	5.28 ^b	1.29
Italians	3.86 ^a	1.17	3.66 ^a	1.39	Housewives	3.50 ^a	1.38	3.64 ^a	1.29
French	3.77 ^a	1.23	3.65 ^a	1.34					

Note: Groups shown in bold were the groups selected for Study 2. Groups in the first column had a higher score in animal-likeness; the groups that had a higher score in machine-likeness are shown in the second column. Values shown with a different superscript in the same row differ at $p < 0.05$.

STUDY 2

The aim of the second study was to analyse some consequences of groups being perceived in machine-related and animal-related terms. Since both forms of dehumanizing people imply different views of the outgroups, it was expected that they would also have different consequences for intergroup relations. Specifically, we focused on three different types of consequences: prejudicial attitudes, emotions and behaviours. The Stereotype Content Model (SCM), Fiske et al. (2002), explains how people express different emotions and behave in different ways toward social groups depending on the content of their stereotype. In order to contribute to the analysis of how groups are perceived and the consequences thereof, we followed the work of Fiske et al., adding the humanization-dehumanization dimension.

Generally speaking, we expect animalistic dehumanization to elicit more negative emotions (Haslam, 2006), prejudiced attitudes and negative behavioural tendencies than mechanistic dehumanization. This hypothesis is based on two main postulates: one, the view of animalistically dehumanized groups as people who may be degraded, humiliated, and likely to be demeaned by others, added to which, the low warmth attributed to animalistically dehumanized groups, would elicit disgust and contempt (Rozin et al., 2000). Consequently, more negative behaviours are expected toward them, i.e. passive and active harm; two, as others scholars have pointed out (see Haslam, Kashima, and Loughnan, 2008), mechanistic dehumanization is associated with a perception of high competence and low warmth. Thus, we predict that mechanistically dehumanized groups will elicit different kinds of emotions compared to animalistically dehumanized groups. Specifically, we hypothesise that these groups

would elicit jealousy or admiration. Accordingly, and taking into account the SCM (Fiske et al. 2002), we would also expect more positive behaviours toward them (active and passive facilitation).

Method

Participants

A sample of 127 participants (50.8 % female, 40.2 % male) from the general population participated in the study. Similarly to Study 1, we recruited participants on-line via the Amazon.com Mechanical Turk web service. All participants were paid for their participation. All participants were American and the average age was 37.76 years ($SD = 13.76$). Participants included: 96 (75.5 %) Whites/Caucasians; 10 (7.9 %) Blacks; 12 (9.4 %) Asians/Pacific Islanders; 4 (3.1 %) Hispanics or Latinos; 1 (.08 %) Native American; and 4 reported a different ethnicity.

Stimuli

The online survey included different measures to explore the consequences of dehumanization. We selected three groups from Study 1 that had been viewed by participants as more animal-like: *Gypsies, Arabs, and Africans*. We selected a further three groups that had high scores in the machine-like dimension: *Germans, Koreans and Chinese*. As shown in Table 1, the selected groups vary greatly in terms of animal-likeness and machine-likeness. In the case of Arabs, although this group was significantly perceived as more animal-like than machine-like, the difference was not very marked. Nonetheless, we decided to include this group rather than other more clearly animal-likened groups, in order to include solely ethnic or national groups.

Although the main aim of the study was to compare animalistic vs. mechanistic dehumanization, *Americans* were included as an ingroup.

Materials

The online survey contained questions relating to one of the six selected outgroups and to the ingroup (Americans). The order in which the groups were shown was randomly assigned. Unless otherwise specified, all items were measured using a 7-point scale (1 = Not at all; 7 = extremely).

Emotions toward the different groups were measured using a set of four emotions, based on the work of Cuddy, Fiske and Glick (2007). The specific emotions used were: pity (average for pity and sympathy; $\alpha = .71$); admiration (admiration and pride; $\alpha = .75$); contempt (contempt and disgust; $\alpha = .84$); and a single item to measure jealousy.

Behavioural Tendencies were measured by using four classes of behaviour (see Cuddy et al., 2007): active facilitation (help, protect; $\alpha = .85$); active harm (fight, attack; $\alpha = .93$), passive facilitation (cooperate with, associate with; $\alpha = .89$), and passive harm (exclude, demean; $\alpha = .90$).

Warmth & Competence Perception was measured by means of two items. Participants were asked to rate the extent to which they considered the target group as warm and competent. The inclusion of this measure enabled us to analyse whether the differences, if any, on the main dependent variables between animal-like and machine-like groups might be explained totally or partially by the perception of these groups in terms of competence and warmth.

Prejudice was assessed using a scale described by Stephan, Ybarra and Bachman (1999). According to Castano et al. (2006), dehumanization could be a form of prejudice; by including this variable, we were able to confirm this assumption. Specifically, participants were asked to indicate the degree to which they felt 12 different, evaluative and emotional responses toward the target group. The evaluation included hostility, dislike, disdain, hatred, rejection, admiration, acceptance, superiority, affection, approval, sympathy and warmth (positive emotional reactions were reversed). We computed an index averaging all evaluative and emotional reactions ($\alpha = .91$), which indicates the extent to which participants held prejudices toward each group.

Humanness Perception was measured using three items to capture the extent to which the target group was described in animal-related (e.g. lack of culture, coarseness, lack of self-restraint), machine-related (e.g. rigidity, coldness, lacking emotion) or human-related (e.g. depth, refinement, moral sensibility) terms.

Procedure

Participants responded to an online survey containing the dependent measures, and were randomly assigned to the different conditions. Each participant was asked to rate the ingroup (Americans) and one of the six outgroups. The order of the ingroup and outgroup scales were counterbalanced. At the end of the experiment, participants were thanked for their cooperation and debriefed.

Results and discussion

Results will be presented in the following order: first, we will present different analyses aimed at exploring the consequences of animalistic and mechanistic

perceptions. Second, after analysing the relationships among the different variables (perceptions of the different groups in animalistic/mechanistic terms, emotions, evaluative reactions and behavioural tendencies toward them), and considering emotional reactions to be precursors of behaviours toward these groups (e.g. in the Stereotype Content Model), we will show the role of emotions and evaluative reactions in the relation between animalistic/mechanistic dehumanization and behavioural tendencies. Third, in order to gain a more in-depth understanding of mechanistic dehumanization, we will compare it to the ingroup (Americans). The results of these comparisons will be shown at the end of this section.

Comparison between Animalistic and Mechanistic Dehumanization

In order to compare the results on the variables of interest (animalistic vs. mechanistic perceptions), regardless of the specific outgroup rated by each participant, the scores of the three animal-like groups were averaged. The same was done for the machine-like groups.

Emotions

To test whether animalistic and mechanistic dehumanization are associated differentially with certain emotions, a multivariate ANOVA was carried out using Emotions (Admiration, Jealousy, Contempt, and Pity) as dependent variables, and Dehumanization (Animalistic vs. Mechanistic) as the only between-participants factor. As shown in Table 2, we found a significant effect of dehumanization, $F(4,100) = 13.26$, $p < .01$; $\eta^2 = .347$. Univariate tests show significant differences in the following emotions: Admiration $F(1, 123) = 8.85$, $p < .01$; $\eta^2 = .067$, showing that machine-like groups provoked more admiration than animal-like groups; Jealousy $F(1, 123) = 4.27$, p

< .05; $\eta^2 = .04$, which was also more associated with machine-like than animal-like groups; and Contempt, $F(1, 123) = 17.06$, $p < .01$; $\eta^2 = .12$, indicating, in contrast, that animal-like groups provoked more Contempt than machine-like groups. Lastly, marginal differences were found between the animal-like and the machine-like groups on Pity, $F(1, 123) = 3.74$, $p = .055$; $\eta^2 = .30$ (see table 2).

Table 2: Emotions as a function of type of dehumanization

	Animal-like groups		Machine-like groups	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Admiration	2.91 ^a	1.56	3.69 ^b	1.35
Jealousy	2.16 ^a	1.54	2.76 ^b	1.69
Contempt	3.89 ^a	1.92	2.60 ^b	1.56
Pity	3.29 ^a	1.57	2.77 ^a	1.41

Note: Values shown with different superscripts indicate significant differences across columns (all $ps > .05$).

Behavioural Tendencies

In order to determine whether animalistic and mechanistic forms of dehumanization also have different effects on behaviour, we conducted a multivariate ANOVA, using Behavioural Tendencies (active facilitation, active harm, passive facilitation and passive harm) as dependent variables, and Dehumanization (Animalistic vs. Mechanistic) as a between-participant factor. Results showed a main effect of Dehumanization, $F(1, 123) = 4.27$, $p < .05$; $\eta^2 = .04$. As expected, participants reported intentions to perform more actively harmful behaviours, $F(1,103) = 20.45$, $p < .01$; $\eta^2 = .16$, and passive harm, $F(1,103) = 16.30$, $p < .01$; $\eta^2 = .13$ in respect of the

animal-like groups compared to the machine-like groups. In contrast, a mechanistic perception of a group was more associated with active, $F(1,103) = 6.29$, $p < .05$; $\eta^2 = .05$, and passive facilitation, $F(1,103) = 34.69$, $p < .01$; $\eta^2 = .25$) than an animalistic perception. (See table 3).

Table 3: Behavioural Tendencies as a function of type of dehumanization

	Animal-like groups		Machine-like groups	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Active harm	3.84 ^a	1.70	2.45 ^b	1.39
Passive harm	4.39 ^a	1.73	3.06 ^b	1.62
Active facilitation	3.19 ^a	1.46	3.89 ^b	1.39
Passive facilitation	3.14 ^a	1.46	4.68 ^b	1.17

Note: Values shown with different superscripts indicate significant differences across columns (all $ps > .05$).

Warmth & Competence Perception

A multivariate ANOVA, using Warmth and Competence as dependent variables, and Dehumanization (Animalistic vs. Mechanistic) as a between-participant factor, showed a main effect of Dehumanization, $F(2,122) = 13.05$, $p < .01$; $\eta^2 = .17$, indicating that Animalistic and Mechanistic Dehumanization imply differences in the attribution of Warmth and Competence. Univariate tests showed a main effect of Competence, $F(1,123) = 12.57$, $p < .01$; $\eta^2 = .09$, indicating that machine-like groups were perceived as being more competent ($M = 5.92$) than animal-like groups ($M = 5.03$). However, we did not find any significant differences when comparing animal-like ($M = 4.83$) and machine-like ($M = 4.43$) groups in terms of the warmth attributed to them ($p > .05$).

Prejudice

The average score for the prejudicial attitude measure (Stephan et al. 1999) was entered as a dependent variable in a univariate ANOVA, with Dehumanization (Animalistic vs. Mechanistic) as a between-participants factor. As expected, results showed that animal-like groups ($M = 4.37$) were the target of more intensely prejudicial attitudes than machine-like groups ($M = 3.57$), $F(1,123) = 6.53$, $p < .05$; $\eta^2 = .05$.

Humanness Perception

We performed several comparisons to analyse the within-group differences regarding the level of Animalness and Machineness attributed. As expected, and replicating results from Study 1, the animal-like groups (average scores of Arabs, Gypsies, and Africans) were perceived as being more animal-like ($M = 2.82$) than machine-like ($M = 2.28$), $t(55) = 2.42$; $p < .05$. Furthermore, the machine-like groups (Chinese, Germans, and Japanese) were perceived as being more machine-like ($M = 3.07$) than the animalistically dehumanized group ($M = 2.17$), $t(68) = 4.20$; $p < .01$.

Lastly, we conducted t-test paired comparisons to ensure that the ingroup was perceived as more human than animal- and machine-like. As expected, the ingroup was judged as being more human ($M = 6.19$) than animal-like ($M = 2.54$, $t(15) = 15.58$; $p < .001$) and than machine-like ($M = 2.56$, $t(15) = 15.11$; $p < .001$).

Mediation Analyses

As reported above, at the end of the questionnaire we asked the participants to rate each listed group directly in the animal-like and machine-like dimensions. In order to analyse the relationship between the different dimensions of humanness and the main dependent variables (prejudice and behavioural tendencies), we established the correlations with these variables. Results are shown in Table 4.

Table 4: Correlation between Animalistic and Mechanistic Dehumanization and Behavioural Tendencies

	Behavioural Tendencies					Emotions		
	A. Harm	P. Harm	A. Facilitation	P. Facilitation	Admiration	Jealousy	Contempt	Pity
Dehumanization								
Animalistic	.401**	.299**	.031	-.02	.139	.321**	.398**	.241**
Mechanistic	.184*	.013	.223*	.173	.238**	.320**	.123	.179*
Admiration	-.179*	-.422*	.689**	.515**				
Jealousy	.175	-.209*	-.040	-.033				
Contempt	.549**	.609**	-.281**	-.340**				
Pity	.155	.091	.309**	.178*				

**Correlations are significant at $p < .001$ level.*Correlations are significant at $p < .05$ level.

In order to determine the possible mediational role of emotions in the perception of animalness and machineness, and behavioural tendencies toward the different groups, following the work of Fiske et al. (2002), we conducted separate mediation analyses on animal-like and machine-like perception of the groups.

Animalistic Dehumanization

As shown in table 4, the degree to which a group is perceived as animal-like is positively correlated with both active and passive harm. We used a regression analysis to determine whether this relationship was mediated by different emotions. Specifically, given that the degree to which a group is perceived as animal-like was also positively correlated with certain negative emotional responses toward the group (i.e. contempt and pity), and as proposed by different lines of research on intergroup relations (e.g. the Stereotype Content Model), we decided to use these as mediators. It should be noted that in all of the following analyses, we controlled for competence and warmth perception.

In reference to active harm, the first analysis showed that the degree to which a group is perceived as being animal-like significantly predicted contempt toward the group, as well as active harm; similarly, contempt was also a predictor of active harm toward the groups (see Figure 1). Lastly, when the contempt measure was entered in the regression equation along with animalistic dehumanization, animalistic dehumanization ceased to predict active harm. However, when we used pity as a possible mediator between animalistic dehumanization and active harm, results did not confirm this mediation. In this case, pity did not significantly predict active harm, nor did animalistic dehumanization cease to predict active harm when the pity variable

was entered in the regression along with animalistic dehumanization. Thus, we concluded that animalistic dehumanization predicted active harm, and that this relation was mediated only by participants' contempt toward the different groups being evaluated.

We then conducted two additional mediation analyses in order to determine the mediational role of emotions between the degree in which a group is perceived as animal-like and intended passive harm toward the group. First, contempt was revealed as a significant mediator between animalistic dehumanization and passive harm, as shown in Fig. 2. In contrast, results showed that pity was not a mediator between animalistic dehumanization and passive harm.

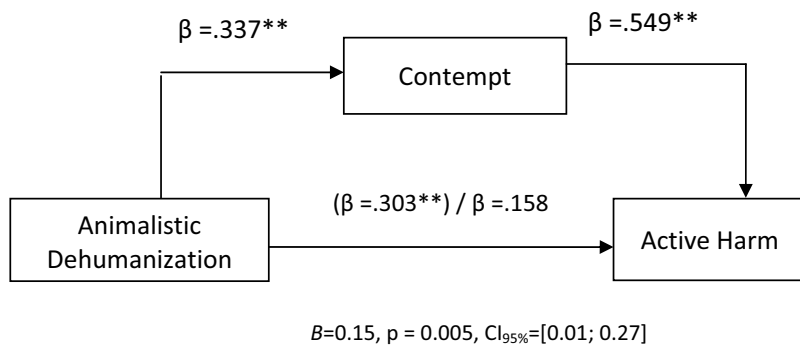


Figure 1: Mediation role of contempt in the relationship between animalistic dehumanization and Active Harm.

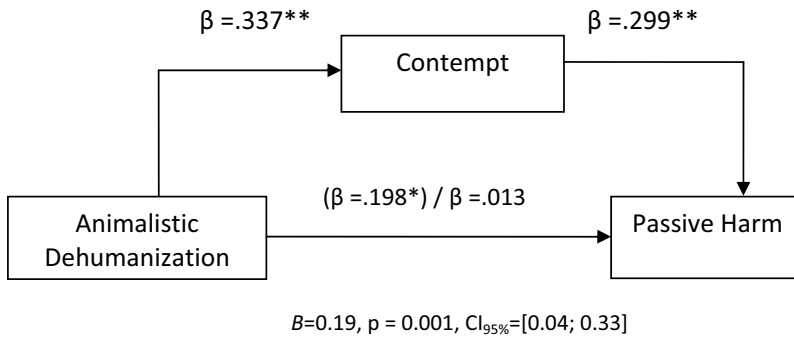


Figure 2: Mediation role of Contempt in the relationship between animalistic dehumanization and Passive Harm

Mechanistic Dehumanization

Our next set of analyses focuses on the relationship between the degree to which a group is perceived as machine-like and behavioural tendencies. We decided to test the most interesting correlations shown in table 4. In contrast to the results obtained for animalistic dehumanization, in this case, results showed that mechanistic dehumanization did not predict Passive Harm ($\beta = -.013$ *ns*). Moreover, although mechanistic dehumanization predicted Active Harm ($\beta = -.184$, $p < .05$), when controlling for Warmth and Competence this effect disappeared ($\beta = -.145$, *ns*). However, when we analysed positive behavioural tendencies (i.e. active and passive facilitation), we found that the degree to which a group is perceived as machine-like significantly predicted active facilitation. Admiration was the only emotion that mediated this effect (see Figure 3). For passive facilitation, we obtained the same pattern of results. As in the case of active facilitation, admiration was the only emotion that mediated the relationship between dehumanization and passive facilitation (see Figure 4). Again, throughout this series of regressions, we controlled for the warmth and competence attributed to the groups.

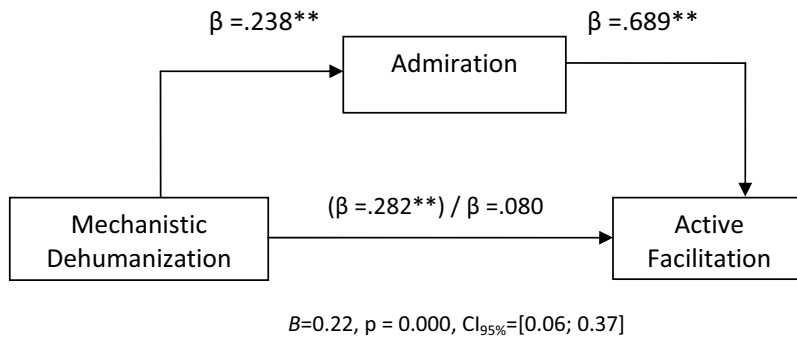


Figure 3: Mediation role of admiration in the relationship between mechanistic dehumanization and Active Facilitation

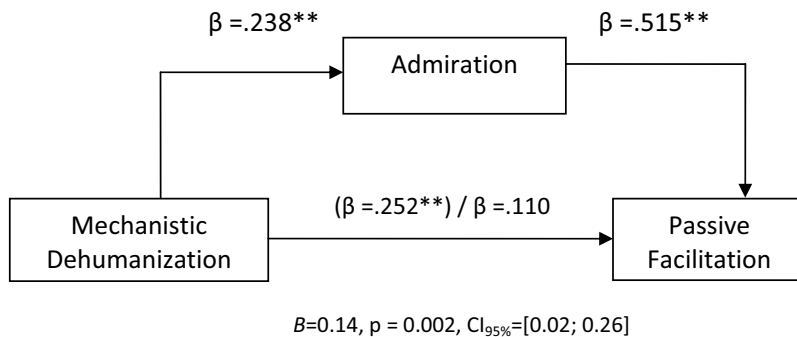


Figure 4: Mediation role of admiration in the relationship between mechanistic dehumanization and Passive Facilitation

Finally, it should be noted that we used bootstrapping to test the indirect effects (Preacher & Hayes, 2008) in all the mediation analysis conducted. Bootstrapping is recommended for mediation analysis to account for the asymmetric confidence limits (MacKinnon, Fairchild, & Fritz, 2007), and it is preferred over the Sobel test or causal steps approaches to test indirect effects because it has relatively higher statistical power while maintaining control over the Type I error rate (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; MacKinnon, Lockwood, &

Williams, 2004). As it can be observed in figures 1, 2, 3 and 4, bias-corrected bootstrapping (1000 bootstraps) yielded a significant indirect effect via the different emotions used as mediators.

Comparison of Mechanistic Dehumanization in respect of the Ingroup:

The results summarized above raise a new question. We have previously shown how mechanistic dehumanization provoked more positive emotions (e.g. admiration) and behavioural tendencies (active and passive facilitation) than animalistic dehumanization. In this regard, one might wonder whether the seemingly positive effects of mechanistic dehumanization are due to the fact that: a) mechanistic dehumanization does not act as a discriminatory process; b) the focus of comparison was the animalistically dehumanized group. To test which of those hypotheses was correct, we decided to compare the mechanistically dehumanized groups with the ingroup on all measures where participants reported feeling more positive emotions (Admiration, Jealousy) and intention to behave in a more positive way (Active and Passive Facilitation).

We started by creating two indices: one for the three mechanistically dehumanized groups (Koreans, Germans and Chinese), and another for the ingroup. Reliabilities for the dependent variables were: pity, admiration (admiration, pride; $\alpha_{\text{MECHANIZED}} = .67$; $\alpha_{\text{AMERICANS}} = .78$), active facilitation (help, protect; $\alpha_{\text{MECHANIZED GROUPS}} = .81$; $\alpha_{\text{AMERICANS}} = .85$), and passive facilitation (cooperate with, associate with; $\alpha_{\text{MECHANIZED GROUPS}} = .87$; $\alpha_{\text{AMERICANS}} = .78$) (jealousy was measured with one single item). In order to examine the differences between the mechanistically dehumanized and the ingroup, we then conducted different paired sample t-tests comparisons. Results showed that

the ingroup provoked significantly more Admiration ($M_{\text{INGROUP}}=4.65$; $M_{\text{MECHANIZED}}=3.69$; $t(68) = 4.19$, $p < .01$); Jealousy ($M_{\text{INGROUP}}=3.52$; $M_{\text{MECHANIZED}}=2.76$; $t(68) = 2.54$, $p < .05$); and Passive Facilitation ($M_{\text{INGROUP}}=5.07$; $M_{\text{MECHANIZED}}=4.60$; $t(68) = 2.58$, $p < .05$) than the mechanistically dehumanized groups. No significant differences were found in respect of Active Facilitation ($p > .05$).

Thus, our findings support our hypothesis regarding the different consequences of animalistic and mechanistic dehumanization. If we take these findings together with the results from Study 2, we can see just how dramatic the consequences are for animalistically-dehumanized groups: compared to the machine-like groups, participants showed greater contempt toward the animal-like group. They were also more likely to act in a negative way toward them, provoking both active and passive harm. Furthermore, we found that these behavioural tendencies were mediated by the contempt elicited by the animal-like groups. Lastly, a further finding in respect of negative consequences was that more prejudicial attitudes were expressed toward the animalistically dehumanized groups (vs. the mechanistically dehumanized groups).

However, mechanistic dehumanization showed a different pattern of results. First, participants expressed more positive emotions toward them (admiration, jealousy), and also expressed a greater intention to act in a positive way with mechanistically dehumanized groups than with animalistically dehumanized groups (more active and passive facilitation). The two aforementioned behavioural tendencies were predicted by the Admiration provoked by the mechanistically dehumanized groups.

These results underline the idea that being animalistically dehumanized brings very severe consequences and could be conceived as a form of discrimination, when

compared to mechanistic dehumanization. More negative emotions, attitudes, and behaviours are expressed toward animalistically dehumanized groups. However, and more importantly, we should be aware that the apparently positive consequences of mechanistic dehumanization were due to the nature of the comparison group. As the results show, mechanistically dehumanized groups elicited more Admiration, Jealousy, Active and Passive Facilitation compared to the animalistically dehumanized groups. However, when compared to the ingroup, we found that the aforementioned emotions and Passive Facilitation behaviours were reserved more for the own group than for the mechanistically dehumanized groups.

GENERAL DISCUSSION

The findings of the two studies enabled us to deepen our knowledge on animalistic and mechanistic forms of dehumanization. Across the two studies, we found evidence to indicate that animalistic and mechanistic dehumanization should not be considered identical processes. In global terms, this research brings a complementary perspective to the literature on dehumanization. First, as we described in Study 1, we adopted a metaphor-based approach to create a task in English for the purpose of assessing animalistic and mechanistic dehumanization. Although some previous studies focused on animal metaphors (Boccatto et al. 2008; Viki, 2006), to date, there has been no task in English that explicitly examines both animal-related and machine-related metaphors together. Furthermore, Study 2 provided an account of the consequences of these two forms of dehumanizing people, by directly comparing the two.

Our work supports the results of Bastian and Haslam (2012), which provided empirical evidence about dehumanization as an everyday phenomenon. As our findings from Study 1 showed, people were able to describe some groups (e.g. Africans, Drug Addicts, Homeless people, etc.) using more animal-related words. These results fit well with data from Harris and Fiske (2006), who reported that drug addicts and poor people were targets for dehumanization. However, we also found that machine related-words were used more to describe certain groups (e.g. Germans, Rich people, Businesswomen, etc.). These results replicated and extended previous research on infrahumanization; our findings are also consistent with the data obtained by Martínez and colleagues (2012) using a Spanish sample, since we also found that people tend to attribute more machine-related words to some outgroups (Germans) and more animal-related words to others (Gypsies). Importantly, we also observed that some groups were also likened to animals (e.g. Elderly people or Obese people), or to machines (e.g. Engineers or Doctors), even when no conflict exists in respect of such groups. These findings wholly match the data reported by researchers studying infrahumanization (Demoulin et al., 2005), who suggest that conflict is not a *sine qua non* for dehumanization to occur.

Although the results are broadly in line with our predictions, we also found that a few groups (Criminals, Housewives, Welfare recipients and the French) were described as being equally machine-like and animal-like. This result could be due to the fact that some groups might be simultaneously perceived in these two ways, i.e. criminals, for example, might be perceived as being cold and calculating, yet at the same time, one might also picture them as highly aggressive individuals who have no control over their actions. Usually, these two contradictory views occur in respect of

certain subgroups of criminals. Therefore, while the main group of criminals might be dehumanized in a mechanistic way, a certain subgroup might be animalistically dehumanized. Furthermore, it seems that some groups are not dehumanized either animalistically or mechanistically. As Haslam and cols. (2012) suggest, animalistic and mechanistic dehumanization encompass various forms and degrees of dehumanization (from subtle to categorical). Consequently, some groups are not clearly animalistically or mechanistically dehumanized. As the authors pointed out, “the emotional temperature of the denial of human attributes (HU & HN) and metaphorical likening to non human entities may be cool or passionately heated”. Therefore, we believe that some of the groups included in our research were not categorically likened to machines or animals.

Based on the results of Study 1, we believe that future research should improve the procedure developed to capture mechanization and animalization. A forced-choice scale (as per Martínez et al., 2012) might help to avoid the tendency of respondents to attribute more human-related words to all groups presented. It would also be necessary to control for social desirability, to ensure that respondents are aware of the true purpose of the study.

In our opinion, the most worrisome aspect of the results from Study 1 lies in the inevitable consequences stemming from the use of metaphors to describe outgroup members. The objective of the research carried out by Haslam and colleagues (2011) was to ascertain exactly what makes animal metaphors offensive. The authors proposed that the offensiveness of certain words lies both in their content and in the context in which they are used. In the case of content, the authors showed that offensiveness was predicted by the dehumanized view held by the perpetrator

toward the target implied in the metaphor. Therefore, our research might also be interpreted as an early warning about how people use images or words to describe outgroups, and accordingly, about the importance of studying the consequences and effects of this subtle form of prejudice.

The study of the consequences of dehumanization is a fundamental question in the field of prejudice and intergroup relations. We fully agree with Hogg (2003) when he highlights that nowadays “the absence of overt discrimination may not indicate the absence of underlying negative intergroup sentiments”. The findings from Study 2 proved to be consistent with this idea, and showed how participants reportedly think, feel, and behave more negatively toward animalistically dehumanized groups than toward mechanistically dehumanized counterparts. Specifically, participants indicated that animal-like groups elicited both active and passive harm to a greater degree than machine-like groups; findings also showed that contempt was the mediator in that relationship. However, different patterns were found for the mechanistically dehumanized group. In this case, the group elicited more positive behavioural tendencies (active and passive facilitation); accordingly, and coinciding with the finding from Cuddy and cols. (2007), here again we find that emotions are predicting behaviours. In this case, admiration was the emotion that mediated the connection between mechanistic dehumanization, and active and passive facilitation.

So, should this lead us to think that mechanistic dehumanization is a positive process that provokes positive emotions and actions in people who have mechanistically dehumanized others? In our opinion, any such assumption would be far from true. When comparing the ingroup, results showed that participants tend to behave more positively (more passive facilitation), and to feel more positive emotions

(admiration) toward members of their own group than toward mechanistically dehumanized groups. Unexpectedly, we did not find significant differences in Active Facilitation toward the ingroup vs. the mechanistically dehumanized group. This data led us to look at what might motivate participants to want to help or protect (active facilitation behaviours) mechanistically dehumanized groups. According to Martínez and cols. (study 11 in this dissertation), people reported a greater intention to interact with mechanistically dehumanized others when the latter are objectified, i.e. when they are considered useful to the attainment of certain goals. Thus, more research is needed to determine whether mechanistic dehumanization elicits more active facilitation, whenever participants consider the mechanistically dehumanized group as instruments for achieving their goals (e.g. in a work-related context). Undoubtedly more research is needed to answer this question and to determine which conditions are required for mechanistic dehumanization to elicit active facilitation.

Lastly, our research contributes to the growing body of research on the consequences of dehumanization. In this sense, our study is also interesting, as it defines the different nature of the discriminatory treatment experienced by animalistically dehumanized groups compared to that of mechanistically dehumanized groups. Furthermore, results from the two studies highlight the idea that animalistic and mechanistic dehumanization should not be considered to be identical processes, as they clearly have different effects on intergroup relations. Furthermore, the results obtained in Study 2 also showed that animalistic dehumanization and mechanistic dehumanization elicited more negative, prejudicial, emotional responses compared to the ingroup. Thus, as our data suggests, it seems difficult to find anything more demeaning than to consider others as being less than human (Haslam et al. 2012).

Taking into consideration that our study looks at the phenomenon from the perspective of the perpetrators of dehumanization, and shows how they are capable of performing negative behaviour toward the dehumanized group, we believe that our data complements the recent work of Bastian and Haslam (2011) on the consequences of animalistic and mechanistic dehumanization from the perspective of the dehumanized targets. Specifically, they show that everyday maltreatments are perceived as dehumanizing acts by the people who experience them. Accordingly, if, as shown in our study, members of the animalistically dehumanized groups are victims of actively and passively harmful behaviours, and members of the mechanistically dehumanized groups experience less positive behaviours than the ingroup, we can assume that these people feel harmed in a way that makes them feel dehumanized. In fact, according to Bastian et al. (2011; p. 295), "Being treated with subtle disrespect, condescension, neglect, and everyday thoughtlessness can leave us feeling degraded, invalidated, or demoralized, outcomes that we argue have implications for our experience of ourselves as human." This is particularly disconcerting when we think about the fact that, nowadays, human beings live in a multicultural world, where people from different groups share the same environment, often forgetting that, regardless of the group to which we belong and setting all prejudice aside, we are all equally human.

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Interacting with dehumanized others? Only if they are useful

(The studies described in this article are included in the doctoral thesis as Studies 9, 10 and 11)

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Abstract

Members of dehumanized groups are tolerated and accepted in a variety of menial roles. In the present research the condition under which and the reasons why people might approach members of animalistically and mechanistically dehumanized groups were tested in three studies. In Study 1, we analyzed the impact of both forms of dehumanization on participants' intention to interact with dehumanized group members in two different contexts. Participants showed a greater intention to interact with members of the animalistically dehumanized group in a social context and with members of the mechanistically dehumanized group in a professional context. In addition, these intentions were expressed independently of the group's perception in terms of competence and warmth. In Study 2, a more detailed analysis of the social perception of the dehumanized groups revealed that the animalistically dehumanized group received higher ratings of success in the social sphere while the mechanistically animalized group received higher ratings in the professional sphere. Study 3 showed that instrumentalization of the animalistically and mechanistically dehumanized groups, more than their likability, was the motivation that led participants to wish to interact with them in the social and the professional sphere, respectively. Taken together these studies show that people approach dehumanized others not because they are liked, but because they are perceived as useful.

Keywords: *dehumanization, animalistic dehumanization, mechanistic dehumanization, objectification, instrumentalization, social perception, interpersonal contact.*

The rise of human migrations has led to an increasingly multicultural society in which individuals of different nationalities, social, economic or religious backgrounds, and ethnic groups share the same physical environment. Despite individuals' need to have interpersonal relationships with people around them, interactions between groups are not always easy. The literature on intergroup relations shows the appearance of new forms of prejudice that are much more subtle than traditional ones and influence relationships between individuals belonging to different groups. Among the literature on these new forms of prejudice, it is worth mentioning the studies on dehumanization (Leyens et al., 2000, Haslam, 2006), which describe the tendency of individuals to reserve the concept of humanity to characterize the groups they belong to (see Haslam, Kashima, Loughnan, Shi, & Suitner, 2008; Leyens, Demoulin, Vaes, Gaunt & Paladino, 2007; Vaes, Leyens, Paladino, Pires-Miranda, 2012; for recent reviews). These tendencies reduce the possibilities of intergroup interactions (e.g., Vaes, Paladino, Castelli, Leyens, & Giovanazzi, 2003), not excluding however that we sometimes actively search for or engage with members of dehumanized outgroups. Their members are highly accepted in diverse menial roles, as mining or cleaning work that is reserved for diverse immigrant groups in many countries across the globe. Examples are manifold. Much like the entertainment of exotic animals, we can appreciate foreign music and dance. Sometimes we actively search for people that are perceived as robot-like to perform boring and highly repetitive jobs. The present work aims to understand the dynamics of these types of interactions integrating the work on dehumanization, objectification and intergroup interactions.

How to dehumanize the out-group?

Attempts to understand processes of dehumanization have known a recent surge of interest that started from the studies conducted by Leyens et al. (2000), who developed *infrahumanization theory*. In their research, they focused on emotions and proposed that secondary emotions (e.g., love, guilt) are a uniquely human characteristic, while primary emotions (e.g., pain, joy) are shared by humans and animals (Demoulin, 2004; Leyens et al., 2000, 2001; Rodriguez-Torres et al., 2005). In these studies, participants attributed more secondary – uniquely human – emotions to the in-group than to the out-group.

More recent approaches emphasized the multidimensional nature of processes of dehumanization. According to the model developed by Haslam (2006), people can be denied two types of attributes: uniquely human attributes (i.e., civility, refinement, moral sensibility, rationality, maturity), which are believed to distinguish humans from animals; and characteristics considered typical of human nature (i.e., emotional responsiveness, interpersonal warmth, cognitive openness, depth), which distinguish humans from machines or other objects. The methodology used by Haslam to study animalistic and mechanistic dehumanization generally involved asking participants to attribute Human Uniqueness (HU) and Human Nature (HN) traits to various groups (Haslam, Bain, Dounge, Lee & Bastian, 2005). Out-groups that are attributed fewer HU traits are perceived as animals and seen as being immature and irrational. Conversely, members of out-groups that are denied HN traits are perceived as automata and therefore seen as rigid and inert.

Denying HU and/or HN to certain groups will likely lead to different consequences. Bastian, Laham, Wilson, Haslam, and Koval (2011), for example showed

that denying HN traits to certain people implies the perception that they are less deserving of moral treatment and less capable of proactively contributing to the moral community; by contrast, denying HU traits to certain people implies the perception that they are unable to inhibit immoral behaviors and therefore less deserving of punishment when they act immorally. Yet, more studies are needed to explain the potential consequences of animalistic and mechanistic dehumanization on other variables. In the present research, we focus on the influence of both forms of dehumanization on interpersonal contact and social perception along with the underlying psychological mechanisms that may explain individuals' preferences to interact with members of dehumanized outgroups.

Context, dehumanization, and intergroup closeness

Contact between groups does not take place in a social void (Ata, Bastian, & Lusher, 2009). Instead, the intergroup context and its norms model our expectations, goals and determine our behavior. What is seen as appropriate and efficient in one context, may be seen negatively in another. In the present study we decided to focus on two contexts or spheres to study our relationships with members of dehumanized groups: the social context, where liking and attraction in interpersonal relationships prevail, and professional contexts, where interactions revolve around the performance and outcomes on certain tasks. We focused on these two contexts for two reasons. First of all, because of the parallels that can be drawn between this distinction and the basic dimensions of social cognition: warmth and competence (Fiske, Cuddy, & Glick, 2007). If these two dimensions can encompass our characterization of people in general, they might be also relevant to distinguish a large variety of human activities.

Second, because these contexts are expected to change our willingness to interact with dehumanized outgroups that are denied a specific sense of humanness (Haslam, 2006): Human Uniqueness or Human Nature.

Specifically, the social context implies different norms of behavior and characteristics from those required in a professional context. In the latter, the most appropriate traits to interact with other individuals are likely to be those related to rationality, agency and cooperation because they ensure a good performance on professional tasks. In the former, however, other traits such as warmth, flexibility, or spontaneity are likely to be more desirable. Knowing that HU involves dimensions like rationality, maturity, and agency and HN includes traits like warmth, emotional responsiveness and depth, one can expect that comparatively members of outgroups that lack HU will be seen as more inapt in a professional rather than in a social context, while the reverse might be expected for people that are described lacking HN. These differences lead us to formulate the hypothesis that people show a different preference to interact with members of outgroups that are subjected to animalistic or mechanistic dehumanization depending on whether the context is professional or social.

As stated before, both contexts (social vs. professional) chosen to test our hypothesis can be associated with perceived competence and warmth. According to the Stereotype Content Model (SCM) (Fiske, Cuddy, Glick, & Xu, 2002) both dimensions encompass intergroup stereotypes so that groups can be characterized as high or low on one or both of these dimensions. For this reason, we decided to measure the perception of each dehumanized group regarding both warmth and competence. First, to obtain empirical evidence on whether – as pointed out by Haslam, Loughnan,

Kashima and Bain (2008) – animalistic dehumanization is associated with a perception of low competence while mechanistic dehumanization is associated with a perception of high competence and low warmth. The analysis of the attribution of competence and warmth to groups subjected to either form of dehumanization also allowed us to control the weight of the attribution of each dimension in the preference for one group over the other in each context.

Objectification and dehumanization

What is the psychological mechanism that explains the higher preference for the animalistically dehumanized group expected in the social context and the higher preference for the mechanistically dehumanized group expected in the professional context? According to Vaes et al., (2012), dehumanization extends beyond mere prejudice or antipathy toward members of dehumanized groups. In fact, we did not expect total rejection of members of dehumanized groups but instead considered that it is possible to wish to have contact with their members depending on the type of dehumanization and the context. If this hypothesis is confirmed, the question that arises is why individuals would wish to have contact with members of dehumanized groups in certain contexts. In the present research, we propose that the objectification of members of dehumanized groups might play a central role as they may be seen as useful to achieve one's goals in certain contexts.

A central notion in the objectification process is that of instrumentality (Nussbaum, 1999): "The target of objectification is a tool for one's own purpose." Along these lines, Gruenfeld, Inesi, Magee, and Galinsky (2008) posited that the objectification process implies the idea of thinking about individuals as a whole with

parts that serve specific goals for the observer. People may approach dehumanized people only when they think about them as instruments to reach their own goals. Similarly, Fitzsimons and Shah (2008) argued that “the way people think, feel, and act within their relationships will be shaped by the extent to which these relationships are instrumental for the self’s progress toward currently active goals.”

The former work (e.g., Gruenfeld et al., 2008), however, always highlighted the intrinsic relation between objectification and liking. The objectified is liked and approached as far as he or she possesses goal relevant attributes. These authors used this argument to differentiate objectification from dehumanization processes. While the former is marked by approach tendencies, the latter leads to avoidance behavior. Together with previous research (Vaes, Paladino, & Puvia, 2011) the present research aims to show that objectification and dehumanization sometimes overlap and that we can attribute instrumental value to those we dislike and even dehumanize approaching them because they are seen as useful.

Objectives and hypotheses

As pointed out above, research on dehumanization has shown that people are likely to perceive outgroup members as being less human, which has negative consequences for intergroup relations. Still, even if people prefer to interact with members of their fully human ingroup, in a variety of situations we do interact with members of dehumanized outgroups. The question remains when and why we engage in such behavior. Therefore, in a set of three studies we tested the differences between individuals’ intention to interact with animalistically and mechanistically dehumanized groups in different contexts. In Study 1, we tested the hypothesis that

participants show a greater intention to interact with animalistically dehumanized group in the social (vs. professional) context, while they prefer to interact with the mechanistically dehumanized group in the professional (vs. social) context (Hypothesis 1). In testing these hypotheses we control for the perceived competence and warmth of these dehumanized groups expecting in line with previous research (Haslam et al., 2008) that the mechanistically dehumanized group would obtain higher scores in competence than in warmth (Hypothesis 2), while the animalistically dehumanized group would obtain low scores in both competence and warmth (Hypothesis 3).

In order to show that these preferences to interact with specific dehumanized groups reflect a judgment of usefulness, in Study 2 we tested the hypothesis that the animalistically dehumanized group would be perceived as being more successful in the social (vs. professional) sphere while the mechanistically dehumanized group would be perceived as being more successful in the professional (vs. social) sphere (Hypothesis 4).

Finally, in Study 3 we verified whether objectification, understood as perceiving members of dehumanized groups as instrumental for one's own goals activated by the specific context, is one of the psychological processes that explain the desire to interact with members of groups subjected to animalistic or mechanistic dehumanization. Therefore, we tested two separate mediational models with the aim to show that people want to interact with members of animalistically dehumanized groups in the social sphere and with members of mechanistically dehumanized groups in a professional context to the extent that these targets are perceived as useful to fulfill the situationally activated goals (Hypothesis 5). It is important to highlight that we expect objectification to play a role independently of the likeability of the

dehumanized group members. Because this alternative was also possible, we controlled for the likeability effect to be ensured that as we hypothesize the psychological process able to explain the preference for the dehumanized groups is the objectification one.

STUDY 1

In this study we explored some of the effects of animalistic and mechanistic dehumanization on intergroup interactions. The study was designed with three objectives: a) study participants' intention to interact with members of each dehumanized group in the social and professional spheres; b) analyze the effect of animalistic and mechanistic dehumanization on such groups' perceived warmth and competence; and c) verify whether the higher preference for the animalistically dehumanized group in the social context and for the mechanistically dehumanized group in the professional context was independent from warmth and competence judgments.

In order to test these hypotheses, participants were confronted with a fictitious group, allowing us to control important group characteristics that are impossible to control in research with real groups (e.g., differences in status, power, number).

Method

Participants

The sample was composed of 149 (26 male and 123 female) Spanish college students of the School of Psychology of the University of Granada, Spain, who obtained

course credit in exchange for their participation. Their mean age was 19.29 years ($SD=4.25$).

Measure and procedure

We collected the data at a large university classroom, over one single session. Upon their arrival participants were randomly assigned to one of three different conditions. After reporting socio-demographic information (i.e., age, sex, citizenship), participants were presented with one of three groups in a between-subjects design: a human, animalistically dehumanized, or mechanistically dehumanized group. The descriptions (see Annex) were validated by Martínez, Rodríguez-Bailón, Moya, and Vaes (under review). Participants were instructed to read the group description attentively and respond to the following dependent variables:

Social and professional interaction

Interpersonal closeness with the members of the presented groups was assessed adapting some of the widely used measures of social distance (Bogardus, 1947; Morera et al., 2004). Specifically, participants were asked to rate seven items that referred to either social or professional forms of interaction on a 7- point Likert response scale ($1=Not\ at\ all$; $7=A\ lot$). A factor analysis on these 7 items revealed that participants' responses were clustered around two different factors: 'social contact,' which included 3 items (e.g., *¿En qué medida te gustaría pasar una tarde con los miembros de este grupo?* – To what extent would you like to spend an evening with the members of this group? – $\alpha = .88$), and 'professional contact,' which included 4 items (e.g., *¿En qué medida te gustaría trabajar con los miembros de este grupo?* – To what extent would you like to work with the members of this group? $\alpha = .92$).

Perceived warmth and competence

Participants were asked to indicate to what extent they considered that the members of each group could be described with 5 traits, using a 7-point Likert response scale (1 = *Not at all* - 7 = *A lot*). There were three Warmth traits ($\alpha = .92$) (*cálidos*, *afectuosos*, *tiernos-sensibles a las necesidades de los demás* - warm, affectionate, tender, sensitive to the needs of others), and 2 Competence traits, ($\alpha = .84$) (*competente* – competent– and *inteligente*– intelligent).

Finally, participants completed a measure to verify the perceived humanity of the described groups (*¿En qué medida crees que el grupo descrito puede ser calificado como animal / máquina / humano?* – To what extent do you consider that this group can be described as animal-like/machine-like/human?) and the valence attributed to them (*¿Qué impresión te causa este grupo?* – What is your impression of this group?) on a 7-point Likert response scale (1 = *Not at all* - 5 = *A lot*). After completing the questionnaire, participants were debriefed about the purpose of the study and thanked for their participation in the research.

Results

Manipulation check

In order to verify whether the dehumanized outgroups were perceived as such, a repeated measures analysis with Perceived Humanity (animal-like, machine-like, or human) as an intra-subject factor and Group Type as an inter-subject factor. The analysis revealed a main effect of Perceived Humanity, $F(2,288) = 80.70, p < .001; \eta^2 = .35$ and an interaction between Perceived Humanity and Group Type, $F(4,288) = 28.17, p < .001; \eta^2 = .28$. Contrast analyses revealed that, as expected, the Human group

was perceived as the most human of the three groups ($M_{\text{animalistically dehumanized}} = 3.72$; $M_{\text{mechanistically dehumanized}} = 3.54$; $M_{\text{human}} = 4.47$). Comparisons between the human group and the other two groups were significant ($p < .001$), while no difference in humanity was found between both dehumanized groups ($p > .05$). Moreover, the animalistically dehumanized group was perceived as being more animal-like ($M = 3.20$) than the mechanistically dehumanized ($M = 2.29$) and the human group ($M = 1.45$, all $p < .001$). Finally, the mechanistically dehumanized group was perceived as being more machine-like ($M = 3.40$) than the animalistically dehumanized group ($M = 2.07$) and the human group ($M = 2.84$, all $p < .05$).

An analysis of the valence that was attributed to the three group descriptions revealed a main effect of this variable, $F(2, 144) = 93.45, p < .001; \eta^2 = .56$. As expected, the analyses showed that the human group was perceived more positively ($M = 4.47$) than the animalistically ($M = 2.52$) and the mechanistically dehumanized group ($M = 2.54$) (all $p < .05$). Importantly, no differences were found in the valence of both dehumanized groups ($p > .05$).

Social and professional contact

To verify participants' willingness to interact with dehumanized others, a 3(Group Type: animalistically dehumanized vs. mechanistically dehumanized vs. human) X 2 (Interaction Context: social vs. professional) mixed ANOVA in which only the first factor was manipulated between subjects was conducted. The analysis revealed a main effect of the Interaction Context, $F(1, 145) = 6.02, p < .05; \eta^2 = .04$, showing that participants reported a greater willingness to interact in a professional ($M = 3.65$) compared to a social sphere ($M = 3.41$).

Importantly, the expected Group Type X Interaction Context interaction was also significant, $F(2,145) = 9.76$, $p < .001$; $\eta^2 = .11$. First of all, and somewhat unsurprisingly participants showed a greater preference to interact with the human group compared to both dehumanized groups in both interaction context (see Table 1). More importantly for our purpose, results showed that participants were more willing to interact with the mechanistically dehumanized group than with the animalistically dehumanized group in the professional sphere, while they did not differ in their intention to interact with both groups in the social sphere.

Table 1: Mean willingness to interact with the different groups as a function of the type of context).

	Social context		Professional context	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Human group	5.27 ^a _a	1.11	5.56 ^a _a	1.14
Animalistic group	2.62 ^a _b	.98	2.36 ^b _b	1.16
Mechanistic group	2.33 ^a _b	.85	3.01 ^b _c	1.21

Note: Values with different superscripts indicate significant differences across columns. Values with different subscripts indicate significant differences across rows (all $ps < .05$).

Finally, and focusing on the within group contrasts, results confirmed Hypothesis 1. Participants reported an equally high interest to interact with the human group in the social and the professional sphere. They indicated less interest to interact with the animalistically dehumanized group in the professional sphere than in the social sphere. By contrast, participants showed a greater preference to interact with

the mechanistically dehumanized group in the professional sphere than in the social sphere.

Perceived competence and warmth

To verify the perceived competence and warmth of the various groups, a 3(Group Type: animalistic vs. mechanistic vs. human) X 2(Type of Trait: Warmth vs. competence) mixed ANOVA in which only the first variable was manipulated between participants was conducted. This analysis showed a Type of Trait main effect, $F(1, 144) = 174.01, p < 0.01; \eta^2 = .54$, as the groups were generally attributed higher competence ($M = 4.69$) than warmth ($M = 3.24$). In addition, a significant interaction between Type of Trait and Group Type as found, $F(2, 144) = 70.03, p < 0.01; \eta^2 = .49$. As shown in Table 2, the human group was perceived as warmer than the animalistically and the mechanistically dehumanized groups. Moreover, the animalistically dehumanized group was perceived as warmer than the mechanistically dehumanized group. The human group was perceived as being more competent than both dehumanized groups. In this case, however, the mechanistically dehumanized group was perceived as more competent than the animalistically dehumanized group.

Table 2: Perceived competence and warmth of the various groups

	Competence		Warmth	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Human group	6.07 ^a _a	.72	4.99 ^b _a	.78
Animalistic group	3.00 ^a _b	.93	2.95 ^a _b	1.08
Mechanistic group	4.85 ^a _c	.96	1.86 ^b _c	.84

Note: Values with different superscripts indicate significant differences across columns. Values with different subscripts indicate significant differences across rows (all $ps. < .001$).

Next, Hypotheses 2 and 3, which predicted that the mechanistically dehumanized group would score higher in competence than in warmth (2) and that the animalistically dehumanized group would score equally low in competence and warmth (3) were tested. This test involved performing an intra-group analysis of perceived competence and warmth. Results showed that both the mechanistically dehumanized group and the human group were perceived as being more competent than warm (see Table 2). Yet, no significant differences were found between warmth and competence in the animalistically dehumanized group. In addition, a comparison with the midpoint of the scale showed that the animalistically dehumanized group was attributed low warmth, $t(44) = -3.07, p < .001$, and low competence $t(44) = -3.58, p < .001$. The warmth attributed to the mechanistically dehumanized group was low, that is, it differed from the midpoint of the scale, $t(53) = -12.44, p < .001$, whereas the competence attributed to this group was high, $t(52) = 10.27, p < .001$. Finally, the human group was attributed high warmth, $t(48) = 10.87, p < .001$, and competence, $t(48) = 24.69, p < .001$, that is, significantly higher than the midpoint of the scale.

Finally, we conducted a regression analysis to verify whether the animalistic dehumanization predicted the intention to interact with the groups in the social sphere independently of how warmth the group was perceived. We introduced the Group Type, dummy coded for the animalistically dehumanized group (animalistic = 1, mechanistic = 0, human = 0) and the scores in groups' perceived warmth as predictors and the intention to interact with them in the social sphere as dependent variable. Although warmth was strongly related with the interaction to interact with the group in the social domain ($\beta = .78, p < .001$), results showed that even controlling for it,

animalistic dehumanization predicted significantly the intention to interact with the groups ($\beta = -.21, p < .001$).

Similarly, we performed a regression analysis to verify whether the mechanistic dehumanization (animalistic = 0, mechanistic = 1, human = 0) predicted the intention to have contact with the groups in the professional context independently of how competent they were perceived. After introduced both variables as predictors (the dummy coded and the score in competence of the groups), results showed that although competence was strongly related with the intention to interact with the groups ($\beta = .72, p < .001$), mechanistic dehumanization still predicted significantly the intention to interact with them in the professional sphere ($\beta = -.33, p < .001$).

Discussion

Results of Study 1 suggest that the animalistic and mechanistic dehumanization of groups has different consequences for people's willingness to interact with members of these groups. Even though participants showed a greater preference to interact with the human group in both the social and professional sphere, results confirmed the hypothesis that the animalistically dehumanized group was preferred in asocial (vs. professional) context, while the mechanistically dehumanized group was preferred in a professional (vs. social) context.

Moreover, manipulating the humanness of the various tested groups changed their perception in terms of warmth and competence. While the human group was seen as both high in warmth and competence, the mechanistically and animalistically dehumanized groups showed a more complex picture. While the former scored higher in competence than in warmth, the latter was judged low on both dimensions. This

finding is important for at least two reasons. First, it provides empirical evidence that the overlap between the two senses of humanness and the two basic dimensions of social cognition is far from perfect. Even though previous research has measured dehumanization through the attribution of warmth and competence judgments (Harris & Fiske, 2006; Heflick, Goldenberg, Cooper, & Puvia, 2011), the present finding provides empirical evidence that animalistic and mechanistic dehumanization extend beyond the perception of (high vs. low) competence and (high vs. low) warmth. Second, participants' willingness to interact with members of these different groups showed to be independent of the way these groups were judged in terms of competence and warmth.

In sum, if Study 1 identified the contexts in which people cease to be reluctant to interact with members of dehumanized groups, the question remains why this happens. Study 2 was designed to give an initial response to this question.

STUDY 2

People interact with dehumanized groups when they are seen as useful or more successful. That is the central process in Study 2. Specifically, we expected that the perceived usefulness of the animalistically dehumanized group would be higher in the social context, while that of the mechanistically dehumanized group would be more pronounced in the professional context.

Members of mechanistically dehumanized groups are perceived as people without emotions or cognitive openness, and are therefore characterized as inert and cold (Haslam, 2006). Denying them curiosity and flexibility also gives them the appearance of rigidity. Hence, as pointed out in Hypothesis 2, members of

mechanistically dehumanized groups would be perceived as people who can be useful and successful in the professional sphere, since they are not carried away by emotions or concerns and likely focus on the tasks they are required to perform. In fact, members of such groups are perceived as being competent, as was shown in Study 1. By contrast, members of animalistically dehumanized groups were expected to be perceived as less useful or successful than members of mechanistically dehumanized groups in the professional sphere, since they are seen as people who are carried away by their impulses and instincts, are irrational and immature and perceived as incompetent (as was shown in Study 1). Indeed, according to Haslam (2006), lacking HU traits deprives members of animalistically dehumanized groups of self-control and intelligence. Therefore, we expected them to be perceived as people who are not useful or successful in the professional sphere.

The opposite pattern of results was expected in the social sphere. More specifically, the perception of members of mechanistically dehumanized groups who lack emotionality, warmth and depth was expected to undermine their perceived success or usefulness in the social sphere. By contrast, and given that animalistic dehumanization does not imply denying HN traits to its members, we expected members of the animalistically dehumanized group to be perceived as being more socially successful than those of the mechanistically dehumanized group. In addition, the lack of HU may influence the perception of such individuals as spontaneous and uninhibited people who can be successful in various social situations (e.g., to have a good time with).

We expected the human group to be perceived as successful in both contexts. This group is characterized by both HN and HU traits (i.e., rationality, logic,

interpersonal warmth, depth) and is perceived as high on both competence and warmth(see Study 1).

Method

Participants

Eighty Spanish college students (78.8 % women)of the School of Psychology of the University of Granada participated in exchange for course credit in the current study. Their mean age was 18.75 years ($SD = 3.73$).

Measure and procedure

Participants were provided with a similar questionnaire as the one used in the previous study. Data was collected in a single session in a university classroom..The humanity of the group was manipulated between participants as in Study 1 and a manipulation check measuring the valence, perceived humanness, machine- and animal-likeness of the groups was included. To measure the perceived success of both groups in the professional and social context, we included a scale that is described below.

Perceived Success of Dehumanized Groups

Perceived success of each group in the different contexts was measured with a 20-item scale with some items related to the social context (e.g., *La vida social es una de las cosas más importantes para los miembros de este grupo* – Social life is one of the most important things for the members of this group) and others related to the professional context (e.g., *Los miembros de este grupo suelen alcanzar las metas profesionales que se proponen* – Members of this group usually achieve in their professional goals).

Participants were asked to indicate their level of agreement or disagreement with each of the statements on a 7-point Likert scale (1 = *completely disagree*; 7 = *completely agree*). A factor analysis on these 20 items revealed that participants' responses were clustered around two different factors. So that, we averaged the 12 items regarding Professional Success ($\alpha = .94$) and the 8 items that reflected Social Success ($\alpha = .95$), creating an index for each of them.

Results

Manipulation check

In order to analyze the perceived Humanity of the descriptions, a repeated measures ANOVA with Perceived Humanity (animal-like, machine-like and human) as an intra-subject variable and Group Type as an inter-subject variable was conducted. The main effect of Perceived Humanity was significant, $F(2,154) = 9.18, p < .001; \eta^2 = .10$, but qualified by a significant Perceived Humanity X Group Type, $F(4, 154) = 19.93, p < .001; \eta^2 = .34$. Contrast analyses revealed that the Human group was perceived as more human than both dehumanized groups ($M_{animalistic} = 3.41; M_{mechanistic} = 2.50; M_{human} = 3.96$)(all $ps < .001$). At the same time, the mechanized group was perceived as less human than the animalized one ($p < .05$). The animalistically dehumanized group was perceived as being more animal-like than the mechanistically dehumanized and the human group, ($M_{animalistic} = 3.38; M_{mechanistic} = 2.23; M_{human} = 1.84$)(all $ps < .001$). Finally, the mechanistically dehumanized group was perceived as being more machine-like than the animalistically dehumanized and the human group ($M_{animalistic} = 1.79; M_{mechanistic} = 3.77; M_{human} = 2.72$) (all $ps < .01$). Also the valence attributed to the group descriptions was analyzed showing a Group type main effect, $F(2, 57) = 57.92, p <$

.01. The Human group was perceived more positively than both dehumanized groups ($M_{animalistic} = 2.41$; $M_{mechanistic} = 2.27$; $M_{human} = 4.44$), (all $ps < .001$), while the differences between both dehumanized groups did not differ, $t(53) = .68$; $p > .05$.

Perceived success in different contexts

In order to verify the perceived success of the various groups, a repeated measures ANOVA with Group Type (animalistically dehumanized, mechanistically dehumanized and human) as an inter-subject factor and Type of Success (social vs. professional) as an intra-subject variable was conducted. Type of Success showed to make a significant difference, $F(1,77) = 16.66$, $p < .001$; $\eta^2 = .17$, indicating that participants gave higher scores to professional ($M = 4.73$) compared to social success ($M = 3.78$). More importantly, the interaction between Group Type and Type of Success showed to be significant, $F(2,77) = 30.77$, $p < .001$; $\eta^2 = .44$. As shown in Table 3, participants predicted greater professional success for the mechanistically dehumanized group than the animalistically dehumanized group and more social success for the animalistically dehumanized group than the mechanistically dehumanized group. The human group was perceived as the group with the highest success both in the social and the professional sphere (all $ps < .001$).

Table3: Perceived success as a function of context (social/professional) and group type

	Social sphere		Professional sphere	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Human group	5.31 ^a _a	1.28	5.79 ^a _a	.70
Animalistic group	3.76 ^a _b	1.15	3.04 ^b _b	.80
Mechanistic group	2.33 ^a _c	1.00	4.36 ^b _c	.92

Note: Values with different superscripts indicate significant differences across columns. Values with different subscripts indicate significant differences across rows (all $ps < .01$).

Additionally and testing Hypothesis 2, which was related to perceived professional vs. social success in each group, a set of paired sample t-tests was conducted within each group. As expected, the animalistically dehumanized group was perceived as more likely to have social success than professional success, $t(28) = 3.52$, $p < .001$, while the opposite expectation were reported for the mechanistically dehumanized group, $t(25) = 8.20$, $p < .001$. Finally, no significant differences were found between social and professional success in the human group, $t(24) = 1.57$, $p < .12$ (see Table 3).

Discussion

The results of Study 2 seem to suggest that people interact with members of dehumanized groups in those contexts in which they are perceived as most successful. As expected, results indicated that members of the animalistically dehumanized group were not considered successful in the professional context, but received higher scores in the social context. By contrast, the mechanistically dehumanized group received higher scores in the professional context than in the social context. Taken together with the results of Study 1, Study 2 shows that participants interact with dehumanized groups in the same context in which they are seen as mostly successful.

While these results may seem easy to explain in the case of the mechanistically dehumanized group, they are more surprising in the case of the animalistically dehumanized group. In the former case, group members are perceived as having high competence explaining their success and usefulness in the professional sphere. In the latter case, however, a joint analysis of the results obtained in Studies 1 and 2, showed that this group was not only perceived as having greater chances of success in the

social sphere (Study 2), people also preferred to interact with its members in the social sphere (Study 1). These results were obtained despite the fact that this group was not perceived as very warm. These findings raise new questions about the reasons that lead individuals to wish to interact with people who belong to groups they tend to dehumanize. In addition, we found that neither of the dehumanized groups was perceived positively, particularly in comparison with the group described in human terms. Therefore, why would people wish to interact with such groups in certain contexts? Is it because individuals have a motivation to achieve their goals and take advantage of dehumanized groups only in the situations in which their members are perceived as successful? Is objectification or instrumentalization of animalistically and mechanistically dehumanized groups the psychological process that justifies preference for such groups in the social and professional contexts, respectively? If members of dehumanized groups are perceived as individuals that can be successful in certain areas, it is logical to think that they may be perceived as being useful to participants in those situations and therefore that the possibility of objectifying them may be the variable that explains participants' wish to interact with members of dehumanized groups.

STUDY 3

The aim of this study was to explore whether people indeed approach dehumanized targets only in the fields in which they are seen as useful. According to Hypothesis 5, individuals will only show an intention to interact with animalistically and mechanistically dehumanized groups in a social or professional context, respectively, when members of such groups might help them reach their goals. To

prove this hypothesis, we created different scenarios and a pilot study was conducted in order to select 4 of them. Two of the scenarios referred to social situations whereas the other two describe professional situations. Both social and both professional situations had to require an equal amount of social and competence skills, but in only one of each type of situation it was hypothesized that members of dehumanized groups would be seen as useful.

Pilot study: selection of scenarios

Eighteen undergraduate Italian students, different from the participants in the main study were asked to evaluate forty-four different situations. Specifically, they had to rate the extent to which each of the scenarios required social and competence skills. On the basis of their ratings, we selected two pair of scenarios that did not differ on warmth or competence (see Table 4, all $p > .05$). The resulting social scenarios were *Ballare in discoteca* (dancing in a disco) and *Festeggiare un compleanno* (celebrating a birthday party). The selected professional scenarios were: *Programmare un calendario organizzativo* (working on a schedule) and *Scrivere una poesia* (writing a poem).

Table 4: Warmth and competence judgments of the four scenarios

Warmth					
	<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>
Going to a disco	3.53 ^a	1.50	Celebrating a birthday party	3.71 ^a	1.10
Working on a schedule	1.94 ^b	.96	Writing a poem	2.12 ^b	.92
Competence					
	<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>
Going to a disco	1.88 ^c	1.21	Celebrating a birthday party	1.82 ^c	.80
Working on a schedule	3.71 ^d	.92	Writing a poem	3.59 ^d	1.06

Note: Values with same subscripts are not significantly different across rows ($p > .05$).

As one might expect, the professional scenarios required more competence to successfully interact in them ($M=3.64$) than the social scenarios ($M = 1.85$, $t(16) = 4.94$, $p < .001$). Similarly, the social scenarios required more warmth skills to successfully interact in them ($M=3.61$) than the professional scenarios ($M = 1.85$), $t(16) = 5.35$, $p < .001$.

Main study

In order to test whether objectification defined as the perceived usefulness of dehumanized group members was the process that explained participants' willingness to interact with them, both processes were measured in the 4 scenarios that were selected in the pilot study and the mediational role of objectification on interaction preferences was tested.

Objectification of people implies that individuals become instrumental and the treatment given to them may be morally problematic when they are deprived of their humanness by other individuals (Vaes et al., 2011). Objectification of individuals highlights the goal-relevant characteristics of the objectified. Studies have shown that people who were considered to be useful to reach certain goals were brought to mind more readily, approached more quickly, and avoided more slowly than non-instrumental others (Fitzsimons et al. 2008).

The scenarios selected to test the role of objectification included a scenario in which members of the animalistically dehumanized group were expected to be seen as useful (dancing in a disco) and a scenario in which they were not (celebrating a birthday party). Animalistic dehumanization leads individuals to be perceived as coarse, instinctive, immature, irrational and uncivilized. Therefore, we expected such

individuals not to be chosen to celebrate a birthday party. They are not likely to contribute to a peaceful atmosphere and might even ruin the party. By contrast, dancing in a disco was expected to be a social situation with less rules where disinhibition might be more appreciated and where animalistically dehumanized people could contribute to have a great time increasing their perceived usefulness.

We also wished to test whether an objectification process explained participants' greater preference for the mechanistically dehumanized group in the professional sphere. To this end, we selected two scenarios from the pilot study where competence skills were required. We expected participants to objectify the mechanistically dehumanized group in the scenario "working on a schedule". Given that mechanistically dehumanized individuals are described as superficial and rigid, they were expected to be helpful candidates to produce an efficient and structured schedule that can optimize time. However, the mechanistically dehumanized group was not expected to be useful in the scenario "writing a poem", as its members were not considered to have HN traits, that is, the emotional responsiveness and cognitive openness needed to create a poem.

This specific procedure allowed us to test the mediational role of objectification in interacting with dehumanized group members over and above their warmth and competence skills. In Study 1, results already showed that the perceptions of animalistic and mechanistic dehumanized groups are related but at the same time significantly differ from warmth and competence judgments. In this study, we compare contexts that are equal in warmth and competence, but for which we expect that only in the context in which dehumanized group members are seen as useful participants will want to interact with them.

Method

Participants

Sixty-eight Italian students of the University of Padova agreed to participate voluntarily in this study (54 women and 14 men). Their mean age was 21.4 years ($SD = 2.51$). Participants were approached and asked to participate at different sites of the campus.

Materials and procedure

As in Studies 1 and 2, participants were asked to read the description of one fictitious group reading either the description of the animalistically dehumanized, mechanistically dehumanized, or human group.

After reading the group description, participants were presented with the four scenarios selected from the pilot study and were asked about their intention to interact with the members of the group presented in these scenarios. This measure was the main dependent variable of the study. Our intention was to ensure that the score on this question reflected instrumentality and not just likeability for the different groups. Hence, we included some items to control for the possible effect of likeability by asking participants the extent to which they would like to meet a person from the group in the presented situation. Three items were used for that purpose (e.g., "I would like to meet a person of this group in the described situation") and answered on a 7-point Likert scale ranging from 1 – *not at all* – to 7 – *totally* –. The reliability of the Likeability scale for each situation was satisfactory: "dancing in a disco" ($\alpha = .92$), "celebrating a birthday party" ($\alpha = .92$), "working on a schedule" ($\alpha = .91$), and "writing a poem" ($\alpha = .90$). The scores of these items were averaged. After that, participants

were asked to complete the objectification measure. A 7-item forced-choice scale was created for this purpose, based on the concept of objectification proposed by Nussbaum (1999) and the objectification scale developed by Gruenfeld et al. (2008). Specifically we included the following dimensions: instrumentality, denial of autonomy, fungibility and denial of subjectivity. For each item, participants were asked to choose one of the four scenarios (e.g., "If you had to choose one of the following situations – going to a disco, celebrating a birthday party, working on a schedule, or writing a poem – in which a member of the group presented might be useful to reach your goals in the situation, which one would you choose?"; If you had to choose one of the following situations - going to a disco, celebrating a birthday party, working on a schedule, or writing a poem –in which you would care more about what the person of the group presented can do for you, compared to what you could do for him/her, which one would you choose?", etc.). Scores in these items were aggregated and formed a relatively reliable objectification scale for each scenario: going to a disco ($\alpha = .72$), celebrating a birthday party ($\alpha = .31$), working on a schedule ($\alpha = .62$), and writing a poem ($\alpha = .61$). The scores in each situation ranged from 0 to 7. Importantly, the intention to have contact with members of the group was rated on a forced-choice scale by asking participants to choose the situation in which they would like to interact with a person of the presented group presented (e.g., "If you had to choose one of the following situations – going to a disco, celebrating a birthday party, working on a schedule, or writing a poem – in which you would like to interact with a member of the presented group, which one would you choose?"; Accordingly, mean scores for each situation ranged from 0 (nobody choose the situation) to 1 (everybody choose it).

Results

Objectification as a mediator

The mediational role of objectification in explaining people's willingness to interact with dehumanized group members was tested conducting two separate mediational analyses for the two types of scenarios (social vs. professional). First of all, Tables 5 and 6 suggest that only in one of the social scenarios (disco) participants preferred to interact with a member of the animalistic group and only in one of the professional scenarios (working on a schedule) did they prefer to work with a member of the mechanistic group.

Table 5: Intention to interact with the dehumanized group in social scenarios

	Human group		Animalistic group		Mechanistic group			
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Disco	.13 ^a	.34	Disco	.48 ^b	.51	Disco	.14 ^a	.35
Birthday	.52 ^b	.51	Birthday	.30 ^a	.30	Birthday	.14 ^a	.35

Note: Higher scores indicate a greater preference to interact with the group in the situations analyzed. Values with different superscripts indicate significant differences across rows ($p < .05$).

Table 6: Intention to interact with the dehumanized groups in professional scenarios

	Human group		Animalistic group		Mechanistic group			
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Schedule	.22 ^a	.42	Schedule	.13 ^a	.13	Schedule	.59 ^a	.50
Poem	.13 ^a	.34	Poem	.09 ^a	.09	Poem	.14 ^b	.35

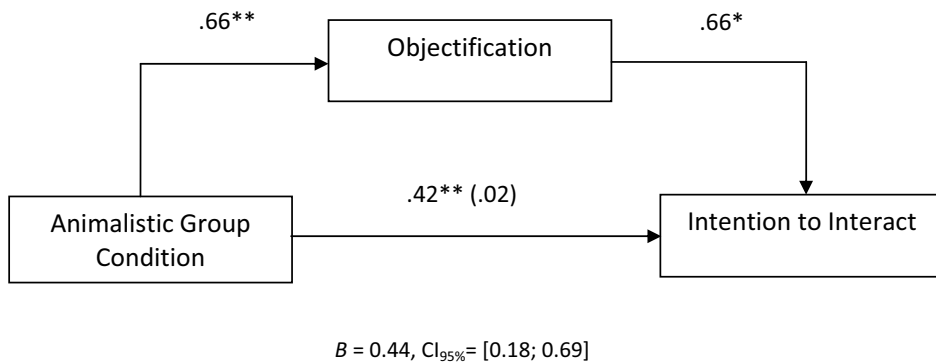
Note: Values with different superscripts indicate significant differences across rows (all $ps < .01$).

Social scenarios. We argued that the willingness to interact with members of an animalistically dehumanized group is restricted to social scenarios in which members of such groups are seen as potentially useful (Hypothesis 5). In order to test this hypothesis, firstly, we conducted a logistic regression analysis in which participants' willingness to interact with the animalistically dehumanized group members in the disco scenario (0 = no, 1 = yes) was regressed on Group Type (contrast-coded as animalistic = 2, mechanistic = -1, human = -1). As it can be seen in Figure 1, this analysis showed that, as it was expected, participants preferred to interact with the animalistically dehumanized group members in the disco scenario. Next, we carried out a lineal regression analysis with the objectification measure as dependent variable. Results showed that the animalistically dehumanized group predicted the objectification of the group in the disco scenario. Moreover, a logistic regression showed that the objectification of this group in the disco scenario also predicted the intention of interacting with this group. Similarly, we also tested that when the objectification measure was entered in the logistic regression equation along with the animalistically dehumanized group (Animalistic Dehumanized vs. Human vs. Mechanized Groups) and the likeability measure, animalistic dehumanization ceased to predict the intention to interact with the mechanistically dehumanized group.

Finally, we used bootstrapping to test the indirect effects (Preacher & Hayes, 2008), taking into account that our dependent variables were categorical (MPlus 6; Muthén & Muthén, 2010). Bootstrapping is recommended for mediation analysis to account for the asymmetric confidence limits (MacKinnon, Fairchild, & Fritz, 2007), and it is preferred over the Sobel test or causal steps approaches to test indirect effects because it has relatively higher statistical power while maintaining control over the

Type I error rate (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; MacKinnon, Lockwood, & Williams, 2004).

So that, we tested the indirect effect of participants' willingness to interact with members of the animalistically dehumanized group in the disco scenario was mediated by the objectification of the group in the disco scenario. It is noteworthy that we controlled for the likeability of the group. Bias-corrected bootstrapping (1000 bootstraps) yielded a significant indirect effect via the objectification measure.



* $p < .05$, ** $p < .01$

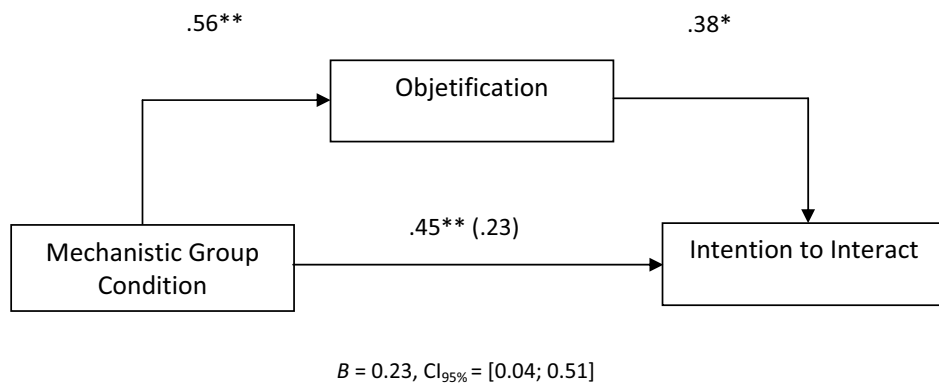
Figure 1: Mediation analysis of objectification in explaining people's preference to interact with animalistically dehumanized group member in the disco scenario (social context)

Moreover, animalistic dehumanization did not predict the intention to interact with the group in the birthday party scenario via the objectification of the group in this context ($B = 0.06, CI_{95\%} = [-0.10; 0.23]$).

Professional scenarios. Several regression analyses were conducted to explore the mediational role of objectification in explaining the preference to interact with mechanistically dehumanized group members in those professional scenarios in which they are seen as potentially useful. The first logistic regression analysis showed that

the willingness to work together with a member of the described group on a schedule (0 = no, 1 = yes) was predicted by Group Type (Contrast-coded as mechanistic = 2, animalistic = -1, human = -1). A similar analysis with objectification as dependent variable revealed that this was also the scenario in which the mechanistically dehumanized group was seen as most useful. The objectification of this group in the schedule scenario also predicted the intention of interacting with mechanistic group members. Finally, when the objectification measure was entered in the regression equation along with mechanistic dehumanization and the likeability measure, mechanistic dehumanization ceased to predict the intention to interact with the mechanistically dehumanized group (see Figure 2).

Next, we used bootstrapping techniques to test the implied indirect effect. Thus we examined the indirect effect of participants' willingness to interact with members mechanistically dehumanized group in the schedule scenario was mediated by the objectification of the group in that situation. We controlled for the likeability measure. Bias-corrected bootstrapping (1000 bootstraps) showed a significant indirect effect via the objectification of the group.



* $p < .05$; ** $p < .01$

Figure 2: Mediation analysis of objectification in the relationship between the mechanistically dehumanized group and the intention to interact with it in the professional context (schedule scenario)

Finally, we also verified that mechanistic dehumanization did not predict the intention to interact with the group in the poem scenario via the objectification of the group in this context, $B = 0.04$, $CI_{95\%} = [-0.07; 0.17]$.

Discussion

As in Study 1, the present findings supported the idea that interacting with animalistically dehumanized group members was preferred in the social sphere, while members of a mechanistically dehumanized group were preferred in the professional sphere. However, qualifying the results of Study 1, this preference did not apply to all social or professional contexts. Animalistically dehumanized group members were only preferred in social situations in which they were considered useful for the goal (i.e., having a good time) that was activated in the specific situation (i.e., dancing in a disco). By contrast, participants did not indicate a higher preference for maintaining contact with members of this group in the social situation in which its members could not help participants achieve their goal (i.e., celebrating a birthday party). Similar findings were obtained for the mechanistically dehumanized group. Participants preferred to interact with members of this group only in those professional situations in which they were seen as useful for achieving participants' goals (i.e., working on a schedule), but not when the members of this group were not objectified (i.e., writing a poem). Importantly, objectification explained people's willingness to interact with dehumanized groups over and above their likeability. This finding has important implications as it shows that dehumanized group members are only approached for their instrumental value, not because they are liked in some situations. This result extends Gruenfeld et al. (2008) framework who emphasized that objectification leads

to approach behavior because the objectified is liked the more he or she has goal relevant attributes. According to these authors, this was also the reason why objectification and dehumanization processes differ from one another. While objectification is linked with approach behavior, dehumanization should be marked by avoidance tendencies. The present findings together with previous research (Vaes et al., 2011) show that both processes can also be clearly related with one another. When we approach dehumanized groups we do so the more we objectify them regardless of whether we like them or not.

GENERAL DISCUSSION

Results of this research demonstrate that animalistic and mechanistic dehumanization are two different forms of dehumanization with contrasting consequences on intergroup relationships with individuals who are dehumanized.

We manipulated the Humanity of three fictitious groups in three studies using the traits included in the two senses of humanness highlighted by Haslam (2006; Human Uniqueness and Human Nature) creating an animalistically dehumanized group, a mechanistically dehumanized group, and a human group.

In Study 1, we used a closeness scale as a dependent variable to analyze the intention to have contact with both dehumanized groups in two different contexts social and professional. This variable has been used as a good indicator of prejudice and negative attitudes toward various out-groups. Unsurprisingly, results showed that participants preferred the human group both in the context of social activities (e.g., going for a walk) and professional activities (e.g., working together). We also obtained evidence of the negative consequences of dehumanization for intergroup

relationships, as participants were reluctant to interact with members of mechanistically dehumanized groups in the social context and with members of the animalistically dehumanized group in activities that required a certain professional contact. These data are consistent with the literature on prejudice and discrimination, according to which people do not want to have members of the groups they discriminate against close to them. However, the main finding of this research is that, relative to the alternative situation, participants did show an interest to interact with the animalistically dehumanized group in social situations and with the mechanistically dehumanized group in professional situations. This result suggests that, although dehumanization of groups is understood as a form of prejudice (Castano & Giner-Sorolla, 2006), members of dehumanized groups may still be approached in certain situations. The social and professional contexts can be associated with key dimensions of social perception such as perceived warmth or competence. Because of this possible confound, warmth and competence perceptions were gathered in Study 1. First, this was useful to explore the attribution of competence and warmth to dehumanized groups; second, we managed to verify whether such attribution explained the intergroup closeness results obtained in that study. As expected, results showed that the human group was attributed high competence and warmth, while the animalistically dehumanized group was perceived as being the opposite, that is, as having low warmth and competence. The mechanistically dehumanized group was perceived as a group with high competence but low warmth, as pointed out by Haslam et al. (2008). These results can be relevant in the literature on dehumanization for two main reasons: first, they provide empirical evidence that members of animalistically and mechanistically dehumanized groups are perceived differently. For this reason, we

consider that both forms of dehumanization should be understood as two different forms of dehumanization that should therefore be explored as such, without assuming that they always have similar consequences. These results also helped us rule out other possible explanations of the results obtained in Study 1 on social and professional closeness. One might suspect that the competence attributed to the mechanistically dehumanized group and the warmth attributed to the animalistically dehumanized group maybe responsible for the higher preference for such groups in the professional and social spheres, respectively. However, the analyses showed the absence of a relationship between animalistic dehumanization, warmth, and the intention to interact in the social sphere, and between mechanistic dehumanization, competence, and the intention to interact in the professional sphere.

Given that the perceived competence and warmth of the groups did not explain participants' intention to interact with dehumanized groups, we conducted a second experiment. The aim of Study 2 was to explore the reasons that may lead individuals to wish to interact with such dehumanized groups. We considered that the lower intention to interact with the animalistically dehumanized group in the social sphere and with the mechanistically dehumanized group in the professional sphere may be due to the perception that their members are successful in such contexts. The study tested these ideas. Participants were asked to assess the groups presented (human, animalistically dehumanized, and mechanistically dehumanized) in the social and professional contexts and to estimate the extent to which they considered that such groups could be successful in the mentioned areas.

Results showed that the human group was perceived as successful in both contexts, while the members of the mechanistically dehumanized group were

perceived as more successful in the professional compared to the social context. Members of the animalistically dehumanized group instead were perceived as having lower success in the professional compared to the social context.

If people report a preference to interact with members of dehumanized groups in those contexts in which they are seen as most successful, one might wonder what are the driving motivations behind these preferences. Recent research has suggested the importance of the link between goal pursuit and interpersonal relationships, showing that automatic connections exist between a given significant other and the goals that one pursues within that relationship context (Fitzsimons & Bargh, 2003; Fitzsimons et al., 2008). Is it possible that people are interested in having contact with dehumanized groups only when they can use them as a means to reach their goals? Study 3 provided empirical evidence for the relationship between dehumanization and such processes of objectification. We were able to prove experimentally that people only report a higher intention to have interpersonal contact with members of dehumanized groups when they consider them to be useful. Results of Study 3 completed the results obtained on intergroup distance in Study 2: animalistically dehumanized groups do not seem to be preferred in all social situations but only in those in which they may be useful for others to reach their goals. Therefore, in the social situation of going to a disco, in which the goal described was to have a good time, participants reported a greater intention to have contact with members of the animalistically dehumanized group. However, in another social situation such as a birthday party, in which it is important to have a good atmosphere and avoid conflicts, animalistically dehumanized individuals were not considered as being useful to reach participants' goals (their lack of HU traits like civility and reasonableness may ruin the

party). Similarly, participants only expressed the intention to interact with the mechanistically dehumanized group in a professional situation in which its members could be useful. Specifically, when the goal was to work on a schedule and therefore plan tasks efficiently, participants reported a greater intention to interact with the mechanistically dehumanized group. By contrast, participants expressed less desire to interact with the mechanistically dehumanized group in another professional situation – writing a poem – with the same perceived competence and warmth required. In this case, it is likely that participants did not consider this group useful because of its lack of HN traits, which imply a greater depth and emotionality of individuals. In short, people seem to be interested in members of dehumanized groups only when they can help them reach their goals. In other situations, they seem to show little interest in interacting with members of such groups. Moreover, these results were obtained controlling for intergroup liking showing that regardless of their likability it was their perceived usefulness that made people to prefer to interact with members of dehumanized groups.

The present research was able to make progress in the study on the consequences of dehumanization. It compared the different possible consequences of animalistic and mechanistic dehumanization and provided evidence for objectification as the underlying psychosocial process that determined the preference for the animalistically dehumanized group in the social context and for the mechanistically dehumanized group in the professional context. The importance of the data is not only that they clarified in which contexts members of the dehumanized groups were preferred or how they were assessed in such contexts. We also found empirical evidence that objectification determines in which social situations people are willing to

interact with animalistically dehumanized groups and in which situations they prefer to interact with members of mechanistically dehumanized groups.

Finally, we consider that the studies presented in this research also have their limitations. One of them is that the manipulation of humanity was useful to control the variables studied but also separated us from reality, as the groups were fictitious and participants had never had any contact with them. Yet, to make progress in the study of inequality and gain insight on prejudice between groups, we consider it is necessary to combine experimental and correlational studies that use different procedures for a more comprehensive understanding of the problem. In addition, it would be interesting to explore other contexts in which people might want to interact with dehumanized groups. Our research only focused on the social and professional areas given that both group a large portion of the daily human encounters and activities. Still, more research is warranted that includes other areas of human conduct in which interactions with dehumanized group members is likely to occur (e.g. wars, national and international conflicts, etc.).

To conclude, we consider that, in line with dehumanization literature our research shows that dehumanization is a phenomenon that extends beyond prejudice toward out-group members. Dehumanizing members of out-groups animalistically or mechanistically implies not only a different perception of their members (as compared to in-group members), but also results in different behavioral tendencies towards members of dehumanized groups.

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ANNEX

Descriptions used in the manipulation of humanity. Versions in Spanish (Studies 1 and 2) and Italian (Study 3) can be requested from the authors of the research.

The animalized group was described with low HU traits. Specifically, participants read the following *“Members of this group often act instinctively. They are not very rational and they do not control themselves well. They are not defined by features such as civility and cultural awareness. They seem coarse and insensitive because they lack refinement. Child-like qualities or lack of maturity are their central defining traits.”*

The mechanized group description was created using low HN characteristics: *“Members of this group often act in an individualistic way. They are passive and very similar to each other, so they are easily interchangeable and fungible. Their manner is generally cold, and they are close-minded. Generally speaking, there are few things that affect them. They are not good at recognizing the emotions of the out-group and are quite rigid and superficial.”*

Finally, the human group was described with characteristics that were both high in HU and HN: *“Members of this group often act very maturely. They could be defined as rational, educated and civilized. Their open minds make them flexible. Moreover, they are sociable and do not have many problems understanding others’ emotions. They are not superficial, so their character may be characterized as deep.”*

Chapter 4: GENERAL DISCUSSION

Summary of Findings

This doctoral dissertation focuses on two forms of dehumanization: animalistic and mechanistic. Our main interest lies in showing that although these two forms of dehumanization hold certain similarities, they should not be considered identical processes. The aim of the first empirical section herein is to enable a better understanding of the relationship between the main approaches adopted in this field of study: the infrahumanization theory (Leyens and colleagues, 2001; Vaes, Leyens, Paladino and Pires-Miranda, 2012), and the two-dimensional humanness model (Haslam, 2006). In the second empirical section, we describe a new task (for Spanish- and English-speaking communities) to measure animalistic and mechanistic dehumanization using the metaphor-based approach. Lastly, we will look at some of the consequences of dehumanization on intergroup relations.

In this dissertation, we present the results of eleven studies. The findings from these studies attempt to answer the following questions:

1. How do the different senses of humanness relate to each other?

If we were to ask people to define the most typically human traits, it is more than likely that they would include secondary emotions among the characteristics that best define us as human beings, perhaps alongside intelligence or language. This was revealed by Leyens and colleagues (2000), in what have become classic studies on infrahumanization. Importantly, these authors found that even though people believed that secondary emotions were uniquely human emotions, they did not consider primary emotions as being exclusively human traits (given that animals can also experience them). Following these findings, Leyens and collaborators began a fruitful

line of research that developed into what is currently one of the most successful lines of research in the field. Some years later, a different research group, led by Haslam (2006), attempted to define humanness using a different set of characteristics, and proposed a model (Haslam, 2006) that relies on two factors: Human Uniqueness, which distinguishes humans from animals; and Human Nature, which distinguishes humans from machines or other objects. This approach brought a new understanding of dehumanization by providing a complementary view of this phenomenon.

Leyens and Haslam, respectively, are the authors of the two main approaches to dehumanization in Social Psychology, and there are certain similarities between the two. First, both focus on the nature of this new, subtle form of prejudice, i.e. how people consider others as not fully human beings. The two approaches also coincide in highlighting the importance of examining not only the nature of the prejudice, but also its interpersonal and intergroup consequences. However, despite these similarities, there are certain differences between them. An important difference, and one that is specially relevant to this thesis, is that, whereas the infrahumanization approach does not differentiate between animalistic and mechanistic dehumanization, Haslam and colleagues have shown the importance of distinguishing these two forms of dehumanization (Haslam, Loughnan, Kashima & Bain, 2008). Similarly, if we look at the methodology used in each of these approaches, we can see how they use different humanness indicators to address the phenomenon: Leyens and colleagues focus on the attribution of emotions (primary and secondary) to ingroups and outgroups; in contrast, Haslam et al. use personality traits (reflecting Human Uniqueness and Human Nature) in their studies.

Our first aim was to gain a better understanding of the relationship between these two main approaches. Until now, no empirical study has been carried out to determine whether these different senses of humanness are related to each other; accordingly, we conducted Study 1 and Study 2 in order to fill this gap in the literature. In Study 1, the humanness of three experimentally created groups (Human-like, Animal-like, and Machine-like) was manipulated, assigning or denying Human Nature (HN) and/or Human Uniqueness (HU) traits to the groups. The attribution of primary and secondary emotions to the different groups was measured, and the pattern of findings showed that denial of Human Uniqueness (HU) traits leads to a low attribution of secondary emotions. Given that secondary emotions are not shared with animals, when participants were confronted with an animalistically dehumanized group (consistent with the infrahumanization theory), they denied the group the capacity to feel uniquely human (secondary) emotions. However, the novelty of this research lies in its evidencing how the denial of Human Nature (HN) traits also leads to a low attribution of secondary emotions. It is therefore noteworthy that the mechanistically dehumanized group was deprived of experiencing secondary emotions to the same extent as the animalistically dehumanized group. This finding has two readings: one, it highlights the importance of secondary emotions in capturing the two forms of dehumanization: animalistic and mechanistic; and two, it also suggests that the use of a measure based on primary and secondary emotions makes it difficult to differentiate whether a group is perceived as animal-like or machine-like.

Additionally, by reversing the design, in Study 2 we manipulated secondary emotions to create two fictitious groups. Participants were given a text in which we had manipulated the frequency with which the group expressed secondary emotions.

Consequently, depending on the experimental condition, the text described a humanized group (high frequency of secondary emotions) or an infrahumanized group (low frequency of secondary emotions). In contrast to Study 1, in this case, the attribution of HN and HU traits was used as a dependent variable. Again, results suggested a strong relationship between both senses of humanness (i.e. primary and secondary emotions, human nature and human uniqueness), and the group described as having a low capacity for expressing secondary emotions was denied both HN and HU factors. Therefore, once again, we confirmed how secondary emotions were related to both animalistic and mechanistic dehumanization.

2. How can we measure animalistic and mechanistic dehumanization?

The findings from Studies 1 and 2 made us aware of the need to create a new instrument that would enable researchers to distinguish between animalistic and mechanistic dehumanization. It is true that the measure used by Haslam and cols. (2005) (hereinafter referred to as "the attribute-based approach") has become an accepted tool for capturing the two forms of dehumanization, and this would be the approach used in studies that start out by defining a number of human characteristics and subsequently focus on exploring to what extent these characteristics are attributed or denied to the ingroup and the outgroup. However, a similar tool would be necessary to enable researchers to differentiate between animalistic and mechanistic dehumanization, using a metaphor-based approach. To the best of our knowledge, this approach (unlike the attribute-based approach) does not include a measure that directly detects the likening of outgroups to animals or robots, and accordingly, the creation of a metaphor-based measure would be helpful in obtaining

further information about how people associate images of non-human entities with certain groups, and would also be a new tool for use by the scientific community in the study of dehumanization of groups.

And this was precisely the main goal of the second empirical section of this thesis: across studies 3 and 4, and using explicit methods, we developed a paper and pencil task in which participants had to link ingroup and outgroup surnames (belonging to Germans in study 3, and to Gypsies in study 4) to a list of human-, animal-, and machine-related words. In both studies, results showed that the ingroup surnames were linked more to human-related words, and unprecedentedly, German surnames were linked to more machine-related words (Study 3), and Gypsy surnames to more animal-related words (Study 4). The same findings were obtained when we used the same trigger words as in Studies 3 and 4, but in this case, using an implicit methodology. Taken together, these results provide empirical evidence of the usefulness of the tool we developed, and given that it was able to distinguish animalistic dehumanization from mechanistic dehumanization, it might also be considered proof that animalistic and mechanistic dehumanization are not be taken as being identical processes. Thus, while some groups seemed to be more likely to be perceived as animal-like, others were more likely to be associated with machines.

The instrument used in studies 3 and 4 was developed in Spanish. In order to develop a similar procedure for the English-speaking community, we conducted Study 7, where we tested the same procedure, using a US sample. In this case, we evaluated a broad-based set of groups. Specifically, participants were asked to rate to what extent thirty-one different groups were perceived as human-, animal-, or machine-like. The set of social groups included groups that differed in nationality (Italians,

Portuguese), ethnicity (Gypsies), occupation (Engineers, Doctors), social status (Drug addicts, Welfare recipients, Businesswomen), etc. On comparing participants' attribution of animal-related vs. machine-related words to the groups, our results showed that, in most cases, participants had distinctly differentiated between the groups. The results confirmed our expectations, showing how some groups (Arabs, Africans, Gypsies) were assigned more animal-related words, while other groups were portrayed using more machine-related words (Doctors, Engineers, Chinese). Therefore, this empirical part of the dissertation also offers further evidence of the existence of different forms of dehumanizing groups, rather than a single form.

3. What are the consequences of animalistic and mechanistic dehumanization?

As discussed in the second empirical section of the thesis, there are groups that seem more likely to be perceived as animal-like, and others as machine-like. However, as social psychologists studying the impact of these two forms of dehumanization, we need to go beyond this point. Based on data from previous studies, we are already fully persuaded of the fact that dehumanization is much more than a perceptual process. Thus, the latter part of the thesis is devoted to the study of certain consequences of animalistic and mechanistic dehumanization.

Study 8 deals with the prejudicial, emotional, and behavioural consequences of dehumanization. Findings from this study showed how animalistic and mechanistic dehumanization have a different impact on the variables examined. The comparison between the two forms of dehumanization provides a solid argument for them not to be considered as being equivalent. In fact, animalistic dehumanization seems to have more dramatic effects than mechanistic dehumanization: respondents expressed more

negative emotions and negative behavioural tendencies; animal-likened groups were also the target of more negative and prejudicial attitudes.

However, the apparently positive (or less negative) consequences of mechanistic dehumanization have to be viewed with caution. As the results show, mechanistic dehumanization provoked greater admiration, jealousy, active, and passive facilitation than animalistic dehumanization; accordingly, animalistic dehumanization should indeed be considered as a more severe form of dehumanization. However, when the mechanistically dehumanized group was compared with the ingroup, results showed that people tended to reserve positive emotions, behaviours, and attitudes to the ingroup.

In this sense, our research shows how, even in this day and age, certain groups are deprived of humanness, and accordingly, are treated unequally in the societies in which they live. If true social equality existed, all groups would be treated in the same way, regardless of their social status, power, number, origin, etc. It can also be inferred from our studies that our emotions, thoughts and behaviours toward the groups we come into contact with will depend largely on the degree of humanness we assign to such groups.

Having looked at the impact of the two forms of dehumanization in respect of the aforementioned variables, for the purpose of this dissertation, we also examined the effects of dehumanization on interpersonal closeness and social perception; accordingly, Study 9 focuses on participants' reported intentions regarding interpersonal closeness with dehumanized people. Interpersonal closeness has been used as a good indicator of prejudice and negative attitudes toward diverse outgroups. When we applied this concept to dehumanization in our study, the results

suggested that participants were reluctant to interact with animalistically and mechanistically dehumanized people, as a function of the context under evaluation. Thus, participants reported fewer intentions of interacting with animalistically dehumanized groups in work-related scenarios, and with mechanistically dehumanized groups in social contexts. In contrast, the human group was preferred for closeness in both social and work-related contexts.

In order to determine whether the different patterns of interaction (closeness) might possibly be related to how the groups were perceived socially, in terms of warmth and competence, Study 9 included a measure for these variables. Results showed that the human group was portrayed as having high competence and warmth, while the animalistically dehumanized group was perceived as being the opposite, i.e. as having low warmth and competence. In contrast, the mechanistically dehumanized group was perceived as a group having high competence, but low warmth, in line with the findings of Haslam and colleagues. (2008). However, a highly insightful aspect of the results obtained in Study 9 was that social and work-related closeness were not explained by the perception of competence and warmth of the groups.

In view of these results, a new research question arose: How is it possible that people might wish closeness with individuals they have dehumanized? One possible explanation might be related to their perceiving the different groups as useful in some way. Why else might someone wish to be close to a group that they perceive as animal-like or machine-like? We might think that whenever people believe that members of animalistically and mechanistically dehumanized groups could prove in some way useful to them in their social or work-related environment, they might be more inclined to interact with them.

In order to determine if this was the case, we first carried out a new study (Study 10), in which we assessed whether the animalistically and mechanistically dehumanized groups were perceived as being successful in the aforementioned environments; results confirmed that, in effect, this was the case. The human group was perceived as successful in both contexts, while members of the animalistically dehumanized group were perceived as being less successful in the work-related field compared to the social context. In contrast, members of the mechanistically dehumanized group were perceived as being more successful in the work-related context than in the social context.

Taken together, results from studies 9 and 10 suggest that people prefer to interact with members of dehumanized groups in those contexts in which the latter are perceived as being most successful, and accordingly, it is possible that people wish to have a certain degree of social or work-related contact with those dehumanized groups that are perceived as having certain skills related to these contexts. Do people associate with dehumanized others when their motivation is to attain certain goals? Study 11 was conducted in order to provide an answer to this question, and we were somewhat disconcerted to find that the results confirmed that when participants objectified an animalistically dehumanized group, they reported a greater intention to interact with the group solely within a social context. Results were also as predicted in the case of mechanistic dehumanization, where participants only reported their intention to interact in a work-related context if the members of a mechanistically dehumanized group might prove useful to their attaining their aims.

Implications

This dissertation might prove relevant in the literature on dehumanization, given that it provides empirical evidence across eleven studies about how groups are dehumanized in different ways, and also underlines the need to explore animalistic and mechanistic dehumanization per se, without assuming that the two processes are similar, since they each have different consequences. In this sense, our studies suggest that members of animalistically and mechanistically dehumanized groups are perceived differently. Furthermore, during our work, we were quite bewildered by the fact that animalistic and mechanistic dehumanization provoke different emotions and elicit different behaviours in the self-same perpetrators of dehumanization. Even more alarmingly, our research also showed that dehumanized groups might even be considered as instruments, or as the means, for the very people who otherwise dehumanize them, to attain their aims.

To acknowledge that animalistic and mechanistic dehumanization are separate processes has important theoretical and practical implications. First, on a theoretical level, results show that a strong relationship between the different humanness indicators (secondary emotions, human nature, and human uniqueness) fosters a better understanding of the relationship between the two main dehumanization approaches in Social Psychology. The clear link found between the two main approaches opens the door to considering secondary emotions as an appropriate index for capturing both animalistic and mechanistic dehumanization, although we also showed that using secondary emotions does not enable us to distinguish whether groups are dehumanized animalistically, or mechanistically.

This dissertation contributes to the study of dehumanization by proposing a new measure that enables us to gain more in-depth knowledge of the phenomenon of dehumanization. Our procedure sheds some light on certain forms of dehumanization that are perpetrated through the metaphor-based approach, thus enabling us to examine its consequences. In this sense, this measure enables us not only to capture when groups are deprived of humanness, but also to distinguish between mechanistic and animalistic forms of dehumanization. Therefore, we are looking here at a potentially highly useful instrument that might be used to enhance clarification of the effects of dehumanization, in much the same way that Viki, Fullerton, Raggett, Tait, and Wiltshire (2012) did using a similar procedure.

Lastly, with regard to the theoretical implications, the research work carried out for the purpose of this dissertation obtained some optimistic, and some rather more pessimistic, findings on the impact of dehumanization on intergroup relations. On the one hand, a positive message can be found by reading between the lines, and by focusing on the effects of humanness being attributed to the groups. Thus, although we looked mainly at animalistic and mechanistic dehumanization, we also observed that when we compared animalistically and mechanistically dehumanized groups with the human groups evaluated, we found solid evidence to support the positive consequences of being considered fully human (more interpersonal closeness, more positive emotions experienced, and more positive behavioural tendencies towards them). Furthermore, by directly comparing the effects of animalistic and mechanistic dehumanization, our results might be considered a step forward in the analysis of the different consequences of this subtle form of prejudice. We believe that discriminatory

behaviour and prejudicial attitudes can only be prevented and eradicated when we have sufficient knowledge about them.

However, we would prefer not to end this section on the implications of this study on a bitter note, and accordingly, we propose that the results referring to prejudice and discrimination be taken from a dual perspective. Although we provide empirical evidence for a sad truth, i.e. the existence of animalistic and mechanistic dehumanization in our lives (and the dramatic consequences that they imply), we also firmly believe that this data should be construed as a key for achieving social change. As researchers, we must consider ourselves part of the problem (in our role as citizens), but we are also part of the solution (as social psychologists). In our opinion, we are obliged to work toward a more equal world. Social equality nowadays is still a hard to reach, yet not impossible, utopia.

Following this line of reasoning, we believe that research on dehumanization is firmly linked to social equality. We could not agree more with Haslam and Loughnan (2011) when they ask what could be more demeaning than to consider others as not fully human individuals. Consequently, this thesis on animalistic and mechanistic dehumanization undoubtedly has several practical implications. First, our data underlines the urgent need to create more educational programs. As Martin, Bennett, and Murray (2008) have reported, infrahumanization has already been observed in 5- and 6-year-olds. Therefore, it is absolutely essential to work with children from an early age in order to eliminate prejudice and break down the barriers that separate "people who believe themselves to be more human from those who are considered to be lesser". This is even more important if we bear in mind that children experience greater cognitive-developmental changes during their early years. Any such

educational program should be aimed at increasing social awareness about how all people are equally human (regardless of which group we belong to) and should emphasize that people should never be likened to animals or machines.

Furthermore, based on the literature and on our own data sourced from different countries, it would appear that dehumanization is ubiquitous. Therefore, we would also encourage the application of socio-psychological knowledge in order to create a new social awareness, not only among children. In this regard, the take-home message of this dissertation might be: "If you want to combat the negative consequences of dehumanization, you must show humanness toward all people who are dehumanized". For this purpose, we propose to follow the procedure described by Vaes, Paladino and Magagnotti (2011) in their work on political credibility, or by Vaes, Paladino and Leyens (2002) in their studies on helping behaviour. Thus, we believe that by integrating indicators of humanness, secondary emotions, human nature, and human uniqueness in advertisements and campaigns, we can achieve a greater involvement of people with those groups who are deprived of humanity, especially in situations where we need to make appeals for help and empathy in respect of such groups. Our recommendation would be to start by portraying outgroups in need of help or aid, first and foremost as humans, and use this as a strategy to get people involved in major social and humanitarian causes (eg. natural disasters, missing children, evictions, people with disabilities who are struggling with architectural barriers, the homeless, the hungry, raising funds for a sick person's treatment, elderly people living alone, immigrants working in inhuman conditions, etc.).

Limitations and Future Research

Having described the main theoretical and practical implications of the research included in this thesis, we will now identify some of its limitations. It is only by recognizing the failings of our work that we will be able to improve it for the future. One limitation of some of our studies possibly lies in our experimental manipulation of humanness, although other authors (e.g. Bastian, Laham, Wilson, Haslam and Koval, 2011) also created fictitious groups with varying degrees of humanness. Future research could examine the effects of animalistic and mechanistic dehumanization by directly studying groups from the real world, as we did in studies 3, 4, 5, 6, 7, and 8 of this dissertation.

A second limitation is related to some of the scales used in our experiments. Specifically, since we were unable to find a measure for the perception of success in different contexts, or an instrumentality scale appropriate to the aims of our research, we developed our own measures for these variables. Accordingly, it should be pointed out that further research is necessary in order to validate the scales used in studies 10 and 11, to increase their robustness for use in this field of study.

Bearing in mind that participants were able to control their responses in some cases, particularly in study 7, it is possible that they did not always reflect their true responses; accordingly, the fact that respondents attributed more human words than animal- or machine-related words to all groups (except the pilots' group) might be explained by social desirability, or perhaps, since they were asked to rate to what extent the human words were appropriate to describe groups of people, it could be the case that participants instinctively rated these words as more appropriate than animal- or machine- related words. A further limitation is that, although a pilot study

was conducted in order to control the desirability of the words, it was not possible to select human-related words that were as positively or negatively perceived as the animal-related or machine-related words. In fact, we are currently working on new research to overcome this limitation. We firmly believe that by using different methodologies (e.g. forced choice procedure, as in Studies 3 and 4), we will be able to provide solid support for some of our findings. Before concluding, we would also like to underline that although our sample is comprised of data from different countries (Spain, Italy, and the USA) and cultures, practically all participants were university students. It is true that many researchers in Social Psychology frequently use university students as participants in their studies; however, there must come a point where we acknowledge the need to include other, more diverse, samples in our research.

Despite of these limitations, the aforementioned weaknesses serve to encourage us to continue the research on the field, as they offer us a number of potentially promising lines for further research. As we broadly described in the introduction, dehumanization appears to have existed throughout history until nowadays. Our research contributes to the growing body of research on dehumanization by comparing animalistic and mechanistic forms of dehumanization. Furthermore, our findings are important to gain more insight into, and a better understanding of, the consequences of mechanistic dehumanization. Bearing in mind that a more recent definition of this form of dehumanization describes outgroups as automata or machines (Haslam, 2006), we felt that further research was needed to foster understanding of this phenomenon. In this sense, and in view of the fact that the infrahumanization theory has already been consolidated by studies on the nature and consequences of animalistic dehumanization, future research on mechanistic

dehumanization is required in order to obtain further evidence about its consequences (e.g. on helping behaviour, empathy, discrimination in the workplace, in the social sphere, etc.).

The work presented in this dissertation have allowed us to understand better social processes, and specifically, how some people dehumanize others who are every bit as human as themselves, and the consequences that dehumanization has on our near or distant environment. We are convinced that only by seeing the world through "social-psychology-tinted glasses", and focusing on the world in which we co-exist with others, will we be able to find more answers about this complex phenomenon that has existed for millions of years.

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