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RESEARCH ARTICLE

Animal, Human and Robot Attribution: Ontologization of Roma, Romanian and Chinese Groups in an Italian Sample

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Abstract:

Background:

The socio-psychological ontologization approach focuses on the attribution of a different “ontology” to outgroup members, that is the attribution of animal (or natural) attributes to the outgroup, and human (or cultural) attributes to the ingroups.

Objectives:

This study aims to enrich the ontologization approach in two ways: (1) A theoretical development of the ontologization approach is proposed, by including the attribution of the essence of automata to outgroup members; (2) whether the ontologization process is also verified for the Romanian and Chinese group is investigated, whereas the ontologization process has traditionally focused on the Roma minority.

Methods:

This study explores the ontologization process of an ingroup member, a Roma, Romanian and Chinese immigrant target *via* the attribution of a set of six randomly ordered animal, human and robot associates to one of the four targets (N = 269). We tested the idea that devaluation of Chinese immigrants relies on a mechanistic form of ontologization, instead of an animalistic one, such as the case for the Roma and Romanian groups.

Results:

The study confirms the animalization of Roma and Romanian targets in Italy. Both groups were ontologized by attributing animal-like associates to them and denying human-like associates. The Chinese target was ontologized based on a mechanistic approach as it was attributed a more automata-like dimension than an animal or human dimension.

Conclusion:

The pattern of the results regarding the association between the Roma and Romanian outgroup and animal-status may have negative consequences for intergroup relations in terms of reduced prosocial and increased antisocial behaviours.

Keywords: Ontologization, Dehumanization, Roma immigrant, Romanian immigrant, Chinese immigrant, Mechanistic approach.

1. INTRODUCTION

Discrimination and xenophobia are persistent in our society, even though they are condemned by legal and social norms [1]. They are not only expressed directly but also indirectly, that is in subtle ways that protect people from being

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seen as transgressors of the anti-racist norm. For instance, Pettigrew and Meertens [2] found evidence of the existence not only of a blatant but also a subtle form of prejudice in seven European countries, that is the defence of traditional values, the exaggeration of cultural differences and the denial of positive emotions towards the outgroup. Moreover, some studies have suggested that ethnic prejudice may have to do with semantic-anthropological considerations, that is judging outgroups in terms of their natural and cultural characteristics [3, 4].

In the study of outgroup discrimination, the ontologization approaches and the dehumanization have sailed as independent ships in the ocean of psycho-social research, their paths intersecting only occasionally, but have never really enjoyed each other's company. In our opinion, this tendency is rooted in the traditional distinction in social psychology between the "minoritarian" Social Representations (SRs) approach, developed in south-Europe, such as France, Spain and Italy, and the mainstream social cognition approach, typical of the Anglo-Saxon environment [5].

1.1. The Ontologization Approach

Starting from the Social Representation Theory (SRT), Pérez, Moscovici & Chulvi [6] studied the way in which members of an ethnic minority, *i.e.* the Roma people in Spain, were grouped and driven outside the realm of humanity, to be located closer to the animal kingdom. Their main focus is on the attribution of a different "ontology" to outgroup members. In particular, the ontologization process is the use of a social representation implying the nature/culture and animal/human binaries, to classify both ingroup and outgroup members [7]. We are used to thinking in terms of opposition or antinomies or themata implicitly as part of our socialization in culture, such as freedom/oppression, male/female, justice/injustice or rich/poor, which are embedded in history and culture [8]. The history of Western civilization has been characterized by an attempt to distinguish humans and animals by means of dimensions such as rationality, language, or consciousness in the belief that these attributes have allowed humans to rise from the irrational, instinctual animal world and to enter the superior cultural domain.

The ontologization paradigm has focused particularly on the attribution of lesser humanity to the Roma minority. Pérez, Chulvi and Alonso [9] suggested that when an ethnic minority constantly withstands the majority's social integration strategies, the majority attributes the absence of integration to the minority's different essence and its inability to abandon an animal-like condition. This condition creates a new ontology for the minority members, excluding them from humanity in the minds of the majority. In Spain, the authors found that Roma people were attributed more natural (or animal-like) characteristics when participants were informed that Roma had not socially integrated despite the various efforts on the part of the majority to integrate them. Researchers have shown that more cultural characteristics are attributed to the ingroup than to the Roma, whereas more natural characteristics are assigned to the Roma than to the ingroup in Great Britain and Romania [4], and in Italy [10].

1.2. The Dehumanization Approach

Over the last ten years, the study of dehumanization has received considerable attention and has gained strong empirical support [11, 12]. While humanity is strongly associated to the ingroup [13], dehumanization is the process by which outgroup members are perceived as less than human (attribute-based dehumanization) or by being associated with more animal-like or automata-like status (metaphor-based dehumanization) [14]. Haslam [15] has proposed a comprehensive dehumanization model where humanness is defined by attributes that are unique to humans (Human Uniqueness, HU) and those that are essential to being human (Human Nature; HN). In the intergroup context, the denial of HU attributes (*e.g.* higher cognition, moral sensibility, sophistication) leads to likening outgroup members to animals, whereas the denial of HN attributes (*e.g.* emotionality, interpersonal warmth, flexibility, and animation) leads to likening them to automata [14, 16 - 18].

As for animalistic dehumanization, empirical research takes into consideration the likening of outgroups to animals. For instance, across four studies, Viki *et al.* [19] found that participants would associate their ingroup more with human *vs.* animal related words in comparison to outgroups. Along the same lines, Saminaden, Loughnan and Haslam [20] have shown that traditional people, such as Australian Aborigines, Melanesians, and Romani, were associated with animal-related stimuli more readily than Europeans or European-Americans when participants were tested using either implicit or explicit methods. Haslam *et al.* [18] describe that animalistic dehumanization as typical of the representations of "primitive" peoples, immigrants, criminals, and the disabled, and this is frequently accompanied by the use of explicit animal labels (*e.g.* vermin, beasts, apes, cockroaches).

As for mechanistic dehumanization, HN attributes are denied, and others are represented as unfeeling, cold, passive, rigid, and lacking individuality. Mechanistic dehumanization has been little investigated on an empirical level and it is

commonly associated with the contexts of objectification, technology, and modernization. For instance, Martínez, Rodríguez-Bailón and Moya [21] found that Spanish participants linked more Romani surnames to animal-related words and German surnames with machine-related words.

1.3. Ontologization and Dehumanization: An Attempt for Reconciliation

In our view, some attempts can be made to reconcile the two approaches (*i.e.* dehumanization and ontologisation) based on the following reasoning. The two approaches are close in the sense that they both describe a process of denying humanity to social groups based on the distinction between nature and culture. They both share the idea that outgroup members are more similar to animals than ingroup members.

Both approaches contrast the ingroup humanity with the outgroup lack of humanity and both rely on the human-animal dichotomy [22 - 24]. According to the metaphor-based approach, outgroup members are assimilated to animals, due to the lack of human uniqueness traits. In our view, this idea is similar to the asymmetric attribution of animal traits to minority members, within the ontologization approach. At the empirical level, animalistic dehumanization and ontologization were similarly investigated via the attribution of human and animal traits to the ingroup and the outgroup. In some cases, the very same stimulus word was used to measure animalistic dehumanization and ontologization. For instance, Saminaden, Loughnan and Haslam [20] have used stimuli words such as polite, analytic, impulsive and simple, whereas Berti, Pivetti and Di Battista [10] used educated, instinctive and simple.

As for the difference between them, the research within the animalistic dehumanization involved either explicit and implicit measures, while researches within the ontologization approach involved only explicit measures.

As by definition, the ontologization approach consists in the attribution of animal characteristics, to our knowledge no studies have been made to investigate the attribution of a different ontology to outgroup members in terms of automata. For instance, the stereotype of Asian immigrant depicts them as hard-working and unsociable, and this group could be the target of the attribution of a machine-like essence. This study aims to enrich the ontologization approach in two ways. In our view, objectification and mechanization do not need to be seen only through the lens of dehumanization theory, but can also be understood in terms of ontologization. In other words, outgroups members can be assigned a different ontology, that is a robot-like essence, within an ontologization process. The ontologization approach can proficiently take advantage of Foucault's works, suggesting that the new institutions and scientific disciplines of modernity are characterized by an objectification of bodies and human subjects. Institutions such as the clinic, the prison, and the mental health system have further objectified people as objects for research and disciplinary practices, leading to a normalization of bodies and subjectivities [25]. This way, we propose a theoretical development of the ontologization approach, by including the attribution of automata essence to outgroup members.

The second novelty of the study lies in the target group. While ontologization research has traditionally focused on the Roma minority, we aim to investigate whether this process is also verified for other immigrant groups such as the Romanian and Chinese groups, in order to broaden its field of application. Clues in this sense stem from the study by Roncarati, Perez, Ravenna & Navarro-Pertusa [26] who found evidence of stronger ontologization in case of interethnic mixing (*i.e.* Black-White).

2. THE CONTEXT OF THE RESEARCH

The Roma group is an ethnicity of Indian origin, living mostly in Europe and the Americas. Currently, there are about 120,000 - 150,000 Roma living in Italy, most of whom are divided into two groups: Sinti (mainly living in the North of Italy) and Roma. Sixty percent of Roma are Italian citizens, while the remaining 40% are either citizens of European Union member countries or other countries, non-citizen refugees, legal and illegal immigrants, or stateless people or people with no official immigration status. Roma people are situated at the bottom of many social comparative indices concerning average income, employment rate, life expectancy, education and health. There is a deep-rooted xenophobic tradition against Roma in Italy and they are among the most discriminated against and marginalized groups in all modern European societies [27].

Romanians are the largest immigrant group in Italy numbering about one million people [28]. Romanians are also recognized as being a target of prejudice and discrimination [29]. Albarello and Rubini [30] found evidence of the outgroup projection effect, where Italians extend the negative prejudice toward Roma to the more inclusive Romanian immigrant group. Roma people are depicted as less pleasant, less typical of a human group and more threatening than Romanians. More than this, the Roma group is perceived as a representative example of Romanians to a greater extent

than the Romanians being representative of Roma people. Finally, Chinese immigrants currently represent the fourth largest ethnic group in Italy, numbering 265,820 [28]. Chinese people's main areas of activity are in manufacturing industries such as the production of ready-to-wear garments, leather goods and bags, and woolen sweaters, and in retail [31]. Ninety percent of Chinese immigrants in Italy come from Wenzhou, a municipality in Zhejiang province in south-east China [32]. Due to historical, geographical and social factors, Wenzhounese culture is substantially different from the mainstream Chinese one. In Wenzhou, merchants have been highly valued and respected for hundreds of years, this being rooted in the "Yongjia School" an independent school of thought originating from this region, which defends the value of commercial practices and trade.

Chinese immigrants are generally seen as "culturally different" from the European tradition, given their language, writing and habits, and their resistance to acculturation and assimilation within the host society. Many Italians point to their tendency to isolate themselves from the majority by settling and working in certain neighbourhood (*i.e.* the "Chinatowns" of Milan and Rome) as a sign of their unwillingness to integrate with the majority. Psychosocial research has shown that Asians are commonly stereotyped as being competent but unsociable, which makes them potential racial targets of a prejudice tinged with envy and discomfort. Anti-Asian American prejudice exemplifies envious prejudice, the type directed against outgroups viewed as competent, ambitious, hard-working but not sociable (Stereotype Content Model, S.C.M.) [33]. Seeing others as lacking traits related to the warmth dimension means denying other traits such as honesty, sincerity, sociability, and emotional sensitivity. According to Martinez *et al.* [21], this denial may involve seeing others as, for example, being robot-like.

3. THE PRESENT RESEARCH

Following previous research into the ontologization process, we carried out a study to explore the idea that also groups different from Roma could be ontologized, that is, ascribed a different ontology, such as the Romanian and Chinese immigrants, that is two large immigrant groups currently present in Italy.

A between-group design is used to investigate the attribution of animal, human and automata-like associates to the four targets: ingroup (Italian) member, Roma, Romanian and Chinese immigrants. The Italian ingroup was introduced as a control group. Participants rated one of the four targets, on a set of six randomly ordered associates. As for the ontologization process, we chose the same animal and human associates used in previous studies [10]. By means of two pilot studies, we obtained a list of seven automata-like associates to be used as a measure of mechanistic dehumanization.

We expected the Roma and Romanian groups to be ontologized by attributing to them animal-like associates and denying human-like associates. As for the Chinese immigrant, the target will be ontologized by attributing to them automata-like associates and denying them human traits. We predict that the Chinese are ontologized based on a mechanistic and not an animalistic approach. Specifically, we predicted that:

H₁. Participants would show an ontologization of the Roma and Romanian immigrant targets by attributing to each of them more animal than human characteristic (H_{1a}); moreover, participants would attribute more animal and human than automata-like characteristics to Roma and Romanian targets (H_{1b});

H₂. Participants would show a mechanistic ontologization of the Chinese immigrant target by attributing to them more automata-like than human characteristics (H_{2a}), more automata-like than animal characteristics (H_{2b}), and more human than animal characteristics (H_{2c});

H₃. Participants would attribute more human than animal characteristics to the ingroup (H_{3a}); participants would attribute more human than automata characteristics to the ingroup (H_{3b});

H₄. Animal-like associates would be attributed more to the Roma and Romanian targets than to the Chinese one (H_{4a}); moreover, they would be attributed more to the Roma and Romanian than to the ingroup (H_{4b});

H₅. Automata-like associates would be attributed more to the Chinese target than to the Roma and Romanian ones (H_{5a}); moreover, they would be attributed more to the Chinese than to the ingroup (H_{5b});

H₆. Human associates would be attributed more to the ingroup than any other target (H_{6a}); moreover, they would be attributed more to the Roma and Romanian target than to the Chinese target (H_{6b}).

3.1. Preliminary Studies

We first performed two pilot studies to select automata-like associates for the Italian context. In the first pilot study, we chose 22 associates related to automata-like characteristics (e.g. insensitive, dependent, lacking personality, cognitively strict), following Haslam *et al.* [18] and Martinez *et al.* [21]. A sample of 28 undergraduates students rated to what extent each associate was representative of an automata, on a 10-point scale from 1 (= not at all) to 10 (= very much). We obtained a list of 10 associates, whose mean was reliably different and higher from the neutral point of the scale (Table 1).

Table 1. List of mechanistic associates obtained from pilot study 1.

<i>Associates</i>	<i>Mean</i>	<i>SD</i>	<i>t</i>	<i>p</i>
Insensitive	7.29	3.53	2.68 (27)	0.01
Dependent	7.89	2.47	5.03 (26)	0.00
Lacking Personality	7.57	2.92	3.75 (27)	0.00
Indifferent	7.41	2.27	4.36 (26)	0.00
Technological	9.50	1.00	21.17 (27)	0.00
Active	6.85	2.21	3.17 (26)	0.00
Automatic	7.93	2.40	5.35 (27)	0.00
Mechanical	9.33	1.14	17.42 (26)	0.00
Rigid	7.29	2.49	3.79 (27)	0.00
Efficient	8.04	2.06	6.50 (27)	0.00

We then conducted a second pilot study to test the valence of the 10 associates, as we aimed to obtain a list of positive and negative automata-like associates, comparable with the list used on previous studies containing animal and human associates. Thirty-one students rated the valence of each associate, on a 10-point scale from 1 (= totally negative) to 10 (= totally positive). The mean of each of three positive associates was above and reliably different from the neutral point of the response scale (*i.e.* technological, active, efficient). The mean of each of the six negative associates was below and reliably different from the neutral point of the response scale (*i.e.* lacking personality, insensitive, indifferent, dependent, rigid, mechanical) (Table 2).

Table 2. List of mechanistic associates obtained from pilot study 2.

<i>Associates</i>	<i>Mean</i>	<i>SD</i>	<i>t</i>	<i>p</i>	<i>Valence</i>
Lacking personality	1.84	1.71	-11.89 (30)	.00	Negative
Insensitive	2.13	1.02	-18.32 (30)	.00	Negative
Indifferent	3.26	1.84	-6.77 (30)	.00	Negative
Dependent	3.77	2.26	-4.25 (30)	.00	Negative
Rigid	4.03	1.49	-5.47 (30)	.00	Negative
Mechanical	4.90	1.40	-2.38 (30)	.02	Negative
Technological	6.59	1.57	3.85 (30)	.001	Positive
Active	8.65	1.14	14.87 (28)	.00	Positive
Efficient	8.97	1.11	17.39 (30)	.02	Positive

3.2. Methods

3.2.1. Participants

The study included 269 participants, 117 males and 152 females, ranging in age from 18 to 81 ($M = 35.62$; $SD = 13.89$). All the participants were of Italian background. Of those, 87 participants were students (32.3%; missing $n = 16$; 9.7%). For detailed sample description, (Table 3). Participants were recruited via informal student networks. Each student was randomly allotted four questionnaires. Students were instructed to fill in one questionnaire and to administer the other three questionnaires as follows: one to another student of the opposite sex and two questionnaires to two working or retired persons (one male and one female). The research complied with the Code of Ethics of the Italian Psychology Association [34].

Table 3. Sample description.

	N (%)
Gender	
Male	117 (43.5%)
Female	152 (56.5%)
Education	
Primary School	3 (1.1%)
Lower Secondary School	31 (11.5%)
Upper Secondary School	131 (48.7%)
Bachelor's degree	56 (20.8%)
Master's degree	43 (16%)
Missing	5 (1.9%)
Occupation	
Student	87 (32.3%)
Employee	96 (35.7%)
Unemployed	21 (7.8%)
Retired	11 (4.1%)
Housewife	13 (4.8%)
Missing	41 (15.2%)

3.2.2. Measures and Procedure

A between-group design was used to investigate the attribution of animal, human and automata-like associates to the four targets: Roma immigrant ($n = 64$, 23.8%), Romanian immigrant ($n = 75$, 27.9%), Chinese immigrant ($n = 79$, 29.4%) and in-group target ($n = 51$, 19%).

Firstly, each participant answered an open-ended question, asking “Describe a “Roma immigrant” or “Romanian immigrant” or “Chinese immigrant” or “Italian” in your own words”, aiming to help participants to focus on the object of the study. Then, participants rated one of the four targets, on a set of six randomly ordered associates. Participants indicated how well two animal (one negative: aggressive, and one positive: free), two human (one negative: cruel and one positive: intelligent) and two automata-like associates (one negative: rigid, and one positive: technological) described a typical Roma immigrant, a typical Romanian immigrant, a typical Chinese immigrant or a typical Italian target (1 = not at all; 7 = very well). Animal and human associates were selected from the previous study to measure the ontologization process [10], while automata associates were selected from Pilot Study 1 and 2 to measure mechanistic dehumanization. Based on an ad-hoc study, the animal negative and positive associates were rated equally in terms of negativity/positivity. The same applies to the human and automata-like associates¹. Moreover, the three indexes (*i.e.* animal, human, and automata-like one) were rated equally in terms of valence².

4. RESULTS

We computed three indexes on the grounds of the mean of associates: animal index (aggressive, free; $r = .19$; $p = .002$), human index (cruel, intelligent; $r = -.23$; $p < .001$), automata index (rigid, technological; $r = .03$; $p = .40$) (Table 4).

¹ One-hundred and two participants rated the 6 attributes on a 10-point scale (1 = negative; 10 = positive). To test whether the positive and negative associates, for each dimension, were equal in term of negativity/positivity, the three positive associates (*i.e.* free, intelligent and technological) were reversed and a series of paired t-test was run. As for animal index, aggressive and free were equal in term of negativity/positivity ($t(100) = 1.3$, $p = .20$; $M_A = 2.34$; $M_F = 2.05$). As for human index, cruel and intelligent were equal in term of negativity/positivity ($t(99) = -1.91$, $p = .06$; $M_C = 1.94$; $M_I = 1.57$). As for automata index, rigid and technological were equal in terms of negativity/positivity ($t(101) = -.13$, $p = .90$; $M_R = 3.57$; $M_T = 3.78$).

² The three indexes (animal, human and automata) were computed based on the mean. In order to test whether the three indexes were perceived equally in term of valence, a repeated measure ANOVA was run. Results showed that the three indexes were perceived as similar in terms of valence ($F(2, 100) = .91$; $p = .41$; $\eta^2_p = .018$; $M_A = 5.63$; $M_H = 5.68$; $M_R = 5.49$).

Table 4. Descriptive Statistics and Correlations of the Study Variables.

–	–	1	2	Mean	SD	N. of items
1.	Animal Index	1		4.03	1.47	2
2.	Human Index	.45*	1	3.83	1.12	2
3.	Automata Index	.05 ^a	.30*	3.91	1.42	2

* $p < .001$; ^a $p = .40$

In order to investigate the way the three indexes were ascribed to the four targets, we carried out four (target: Roma, Romanian, Chinese, ingroup) × 3 (animal-like, human-like and automata-like associates) mixed ANOVA, with the latter factors varying within subjects. Unless otherwise stated, $p < .001$.

There was a significant main effect of target ($F(3, 265) = 2.65$; $p = .05$; $\eta^2 P = .029$). Averaging over animal/human/automata attributions, participants attributed higher scores to the Roma than to the Romanian group ($M_R = 4.18$; $M_{Romanian} = 3.74$; $p = .006$), and marginally more to the Roma than to the Italian ingroup ($M_R = 4.18$; $M_I = 3.87$; $p = .07$).

There was a significant effect of animal/human/automata indexes ($F(2, 264) = 5.18$; $p = .006$; $\eta^2_p = .038$). Participants attributed more animal than human ($p = .002$) and more animal than robot scores ($p = .05$) ($M_A = 4.07$; $M_H = 3.82$; $M_R = 3.89$).

The two-way interaction between target and animal/human/automata indexes was significant ($F(6, 530) = 27.4$, $\eta^2_p = .237$), revealing that the associates were differently ascribed to the target groups (Table 5 and Fig. 1). To break down this interaction, we performed contrasts comparing each target group across the ontologization indexes. The contrast revealed significant interaction when comparing participants' animal/human/automata attribution to the Roma group ($F(2, 264) = 55.5$; $\eta^2_p = .296$), to the Romanian group ($F(2, 264) = 10.2$; $\eta^2 P = .072$), to the Chinese group ($F(2, 264) = 50.6$; $\eta^2_p = .277$), and marginally significant interaction when comparing participants' animal/human/automata attribution to the Italian group ($F(2, 264) = 3.01$; $p = .05$; $\eta^2_p = .022$).

Table 5. Means and standard deviations in parenthesis for the three indexes by target group.

–	Ingroup	Roma	Romanian	Chinese	Total
Animal index	3.82 (1.03)	5.18 (1.07)	4.11 (1.60)	3.16 (1.24)	4.03(1.47)
Human index	3.66 (.97)	4.09 (1.06)	3.75 (1.14)	3.79 (1.23)	3.83 (1.12)
Robot index	4.12 (.98)	3.27 (1.39)	3.35 (1.1)	4.82 (1.46)	3.91 (1.42)

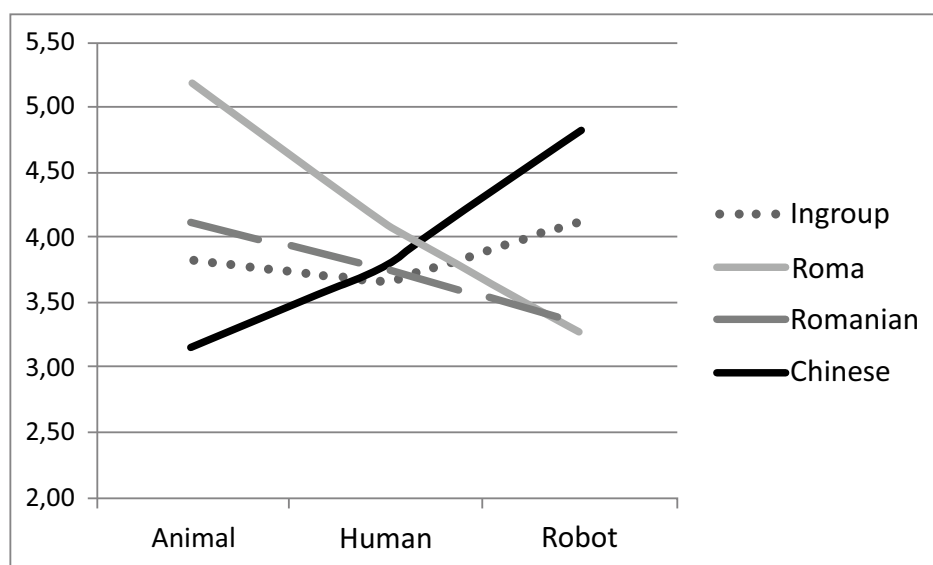


Fig. (1). Means of animal, human and robot index across target.

With regard to the Roma target, participants attributed more animal-like associates than human ones (supporting H_{1a}), and more animal-like than automata-like associates, and more human-like associates than automata-like associates (supporting H_{1b}). The attribution of more animal than human or robot associates confirms the ontologization of the Roma group.

With regard to the Romanian target, participants ascribed more animal-like associates than human ones to them ($p = .01$) (supporting H_{1a}), and more animal-like than automata-like associates, and more human-like associates than automata-like associates ($p = .009$) (supporting H_{1b}). This pattern of results is similar to those regarding the Roma target, confirming the ontologization process of the Romanian minority as well.

With regard to the Chinese target, participants attributed to them more automata-like associates than human-like associates (supporting H_{2a}), more automata-like than animal associates (supporting H_{2b}), and more human-like than animal-like associates (supporting H_{2c}). In other words, the Chinese were denied human status and the automata dimension was attributed to them.

With regard to the ingroup, participants attributed more automata-like associates than human associates ($p = .02$) (not supporting H_{3a} nor H_{3b}). The attribution of human essence to the Italian ingroup was not verified.

Moreover, we performed contrasts comparing each ontologization index across target groups. The contrast revealed significant interaction when comparing participants' animal attribution to the target groups ($F(3, 265) = 29.79$; $\eta^2_p = .252$), and when comparing robot attribution to the target groups ($F(3, 265) = 24.4$; $\eta^2_p = .217$). With regard to the animal index, participants ascribed more animality to the Roma than to the Chinese target, more to the Romanian than to the Chinese target (supporting H_{4a}), more to the Roma than to the Romanian, more to the Roma than to the Italian (partially supporting H_{4b}), more to the Italian than to the Chinese target ($p = .004$), more to the Roma than to the Romanian. In other words, the Roma target was rated higher than any other study group on the animal dimension. With regard to the robot index, the Chinese target was rated higher than the Roma target and higher than the Romanian target (supporting H_{5a}) and higher than the Italian target ($p = .002$) (supporting H_{5b}), revealing that the Chinese target was rated higher than any other study group on the automata dimension. No other effects were reliable on these measures.

5. DISCUSSION

The main aim of this study was to investigate the ontologization process of the Roma, Romanian and Chinese minorities in an Italian sample. As for the Roma and Romanian groups, our results allowed us to observe the existence of an ontologization process, where each group was ascribed more animal than human characteristics. Those results are consistent with the empirical research into the ontologization process [4, 7, 10, 22].

Moreover, the similar pattern of results for the Roma and the Romanian group conveys the idea that not only Roma but also Romanian immigrant group could be ontologised by attributing them to more animal characteristics than human ones [35, 36]. This is also in line with the outgroup projection effect, according to which the negative prejudice toward Roma people is generalized to the Romanian people. The prejudice toward the Romanians is explained by the prototypicality of the Roma for the Romanian group and by the prejudice towards the Roma [30].

The animal metaphor is also echoed in the linguistic field of study, going back to the seminal work by Lakoff and Johnson [37]. They suggest that much of our conceptual system is metaphorically structured, enabling us to understand complex areas of experience in terms of more familiar and more easily imaginable ones [38]. Specifically, it was found in the press and online media that frequent dehumanizing metaphors depict immigrants as parasites, leeches, or bloodsuckers [39].

The main novelties of the study are twofold. In our view, outgroup members could be ontologized by attributing a different essence in terms of animal ontologization or automata ontologization. While animal ontologization has been already studied at theoretical and empirical level, we put forward the idea that depicting outgroup members as automata- or robot-like can be viewed as an ontologization process. Hence, we propose a theoretical development of the ontologization approach, by including the attribution of an automata essence to outgroup members. The second novelty of the study lies in the target group. While the ontologization research studies have traditionally focused on the Roma minority, to our knowledge this is the first attempt to investigate whether this process is also verified for other immigrant groups such as the Chinese group and the Romanian group, in order to broaden its field of application. In line with our predictions, the study revealed that Chinese group was attributed a more automata-like essence than an animal or human essence. We hypothesize that in the same way as the Roma people are attributed a different quality,

i.e. an animal-like status, other groups such as the Asian immigrants or the Germans or the Northern Italians can be attributed a different quality, *i.e.* an automata-like status [40]. The denial of humanity in the case of Chinese group is also supported by the predictions of the SCM body of literature, indicating that Asians are commonly stereotyped as competent but unsociable, which makes them potential targets of racial prejudice tinged with envy and discomfort [33].

Starting from a different theoretical perspective, many researchers dealing with the dehumanization approach have also proved that some groups are animalistically dehumanized and others are mechanistically dehumanized [19]. Specifically, Bain, Park, Kwok and Haslam [16] also found empirical evidence about how the Chinese group was mechanistically dehumanized by denying the HN traits to the group.

Current literature shows that humanity is commonly ascribed to the ingroup, while lesser humanity is ascribed to the outgroup [13, 41]. In our study, humanity was equally attributed to the four targets, that is Italian, Roma, Romanian and Chinese people. This unexpected result indicates the need to deepen the investigation of the attribution of human essence as compared to animal or robot essence to the ingroup, within the ontologization process. One possible explanation lies in the stereotype Italian people have about themselves. The self-stereotype of Italians does not involve the idea of being more cruel and/or more intelligent than immigrant groups. Right-wing political discourse, for instance, refers to the idea that Italians have stronger rights to access the jobs market and accommodation than immigrant groups based on Italian heritage, no matter how intelligent/capable/in need the competing immigrant may be.

Moreover, the attribution of more human than animal/robot essence to the Italian ingroup was not verified, whereas the ingroup was perceived as marginally more automata than human. To clarify the human dimension, future research could make an effort to integrate the two senses of humanness described by Haslam [15] into the ontologization approach, in order to investigate whether participants ascribe (or not) HN (*e.g.* emotionality, flexibility) or HU (*e.g.* cognition, morality) to the ingroup. This could lead to a further theoretical advancement of the ontologization approach.

The originality of the study relies in the effort to reconcile the ontologization and the dehumanization approaches, by showing the many similarities they share in terms of attribution of animal/human/automata essence to outgroup members. Moreover, we consider that the instrument described to measure the attribution of different ontologies to the outgroup is direct and simple, and could be easily applied to different targets to explore outgroup devaluation.

As for the many limitations of the study, we have to mention the non-significant correlation between the two automata associates, that is “rigid” and “technological” ($r = .03; p = .40$). Nevertheless, we consider that both associates emerged as typical of the robot essence in the pilot studies and were proficiently used in previous research to study mechanistic dehumanization [15, 21, 42]. Moreover, they proved to be equally positive/negative in an ad-hoc study (footnote #1). For those reasons, “rigid” and “technological” were combined to build the automata index.

The pattern of results regarding the association between Roma and Romanian outgroup and animal-status may have negative consequences for intergroup relations in terms of reduced prosocial and increased antisocial behaviours [43]. During Nazism (in Germany) and Fascism (in Italy), Hitler's and Mussolini's propaganda depicted Jews and Roma people as parasites preying upon the white race, and denying them human status, thus paving the way to genocide in the case of Nazis. These days, similar reasoning can be applied to the case of attitudes towards immigrants. In the same line, Louis, Esses and Lalonde [36] showed that dehumanizing beliefs (*i.e.* seeing immigrants as cheaters) were associated with more negative attitudes toward immigrants. Viki, Osgood, Phillips [44] found that to the extent that Christians dehumanized Muslims, they were more likely to self-report willingness to torture Muslim prisoners of war. The consequences of the ontologization of Chinese immigrants has yet to be empirically explored.

CONCLUSION

Future research should study both processes of ontologization (*i.e.* animal-like and robot-like attributions) and their consequences in terms of negative attitudes towards immigrant and refugee groups in Europe. This topic is particularly pressing nowadays, given the growing number of immigrant applicants at the EU borders and the current debate on refugee policies at national as well as European levels.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The research complied with the Code of Ethics of the Italian Psychology Association.

HUMAN AND ANIMAL RIGHTS

Not applicable.

CONSENT FOR PUBLICATION

A written informed consent was obtained from all patients when they were enrolled.

CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

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