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Attribution theory and constrcual level theory in relation to environmental problem

Teoria da atribuição e do nível de interpretação em relação à problemática ambiental

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ABSTRACT
The objective of this study was to verify the theories of attribution and the level of interpretation in relation to the environmental problem of garbage. Therefore, a theoretical reference was made on the evolution of the environmental discussion and the emergence of the concepts of sustainable development and sustainability, as well as the theories of attribution and the level of interpretation. The method was characterized by a quantitative approach, carried out through a series of nine surveys with 259 participants, investigating which agent to blame for the generation of garbage is attributed by the participants according to various manipulations in the information text. With that, it was clear the difficulty and resistance of the participants in taking the blame for the garbage and / or making this problem close, with the other agents being repeatedly blamed. This happened despite the gradually more incisive report in the course of the treatments used. As a consequence, a tendency towards distancing and abstraction is reflected in relation to environmental issues, which can contribute to a low engagement in later attitudes related to this.
Keywords: environmental issue; sustainability; theory of attribution; theory of level of interpretation.

RESUMO
O trabalho teve como objetivo verificar as teorias da atribuição e do nível de interpretação em relação à problemática ambiental, aqui especificamente concernente aos resíduos (lixo). Sendo assim, elaborou-se um referencial teórico acerca da evolução da discussão ambiental e da emergência dos conceitos de desenvolvimento sustentável e sustentabilidade, bem como sobre as teorias da atribuição e do nível de interpretação. O método se caracterizou por uma abordagem quantitativa, realizada por meio de uma série de nove levantamentos (*surveys*) junto a 259 participantes, investigando a qual agente os participantes atribuíam a culpa pela geração de lixo, de acordo com diversas manipulações no texto informativo. Com isso, sobressaiu a clara dificuldade e resistência dos participantes em assumir sua parcela de culpa pelo lixo e/ou se aproximar dessa, sendo repetidamente atribuída culpa para os demais agentes. Isso aconteceu apesar do informe gradualmente mais incisivo no decorrer dos tratamentos empregados. Como consequência, reflete-se uma tendência de distanciamento e abstração quanto às questões ambientais, o que pode contribuir para um baixo engajamento em atitudes posteriores relacionadas a isso.
Palavras-chave: questão ambiental; sustentabilidade; teoria da atribuição; teoria do nível de interpretação.

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1 INTRODUCTION

The man, in his interaction with nature, over time, realized that natural resources were not inexhaustible, on the contrary, they are scarce and not easily renewable - or even renewable through the implementation of new technologies, but these also impact the environment (NASCIMENTO, 2012; ANDREOLI; LIMA; PREARO, 2018). With this evidenced, the environmental issue was gradually put on the agenda, also discussing the impacts of economic exploitation and, as a consequence, the current economic model, on the environment (LIRA; FRAXE, 2014).

As a result of this growing concern, as of the 1960s, several international events focused on the discussion of this issue have emerged, culminating in the emergence of the concepts of sustainable development and sustainability (NASCIMENTO, 2012). With this, a new posture of society is required, putting on the agenda the question of how to promote economic growth without compromising the environment and future generations (PINSKY; DIAS; KRUGLIANKAS, 2013).

Despite this, environmental awareness has not yet managed to permeate the consumer sphere. On the one hand, it is noticeable the considerable movement by organizations, which demonstrate environmental concern in their speeches and even develop practical actions to act directly on the problem. However, on the other end, users and final consumers still remain aloof from the environmental problem, choosing to maintain the belief of exemption from responsibility and, consequently, also from blame. After all, it seems to the consumer that his role in the process is being fulfilled, which is to consume. But the consequence of this consumption, in this case addressed in terms of waste generated (garbage), is not seen as an effect of the act of consuming, itself, but the action of producing; that is, reiterating: it is not the responsibility of the individual consumer, who is exempt from the sense of guilt. In this sense, the engagement in more eco-friendly living, buying and consumption habits depends on the perception that individuals have about environmental issues. Thus, there are two theories of fundamental importance in this context: attribution theory and interpretation level theory.

First, attribution theory postulates how individuals process the problematics made available to them, and how they react according to the perceived attributions (FISKE; TAYLOR, 1991; REILLY, 2014). In other words, according to the attribution that is perceived by the individual, basically internal or external, the reaction towards certain issues will in fact be effective or not. In this sense, if the environmental problem is attributed by individuals as their own internal fault, their attitudes towards it will tend to be greater, in the sense of actually engaging in diminishing this feeling or arguing against it. However, if it is observed that, for some reason, individuals tend to resist the attribution of internal guilt, their attitudes towards it will be smaller, if not null; after all, if there is no perception of the problematic and no guilt attached to it, there is also no motivating factor for reflection or action.

Similarly, the interpretation level theory holds that there is a two-way relationship between the level of interpretation and psychological distance felt, i.e., that both the level of elaboration is able to influence the distance felt by the individual, and the distance felt is able to influence their thoughts and behaviors (TROPE; LIBERMAN; WAKSLAK, 2007; TROPE; LIBERMAN, 2010). More importantly, the consequence is of different evaluations and reactions to objects, which tend to be more evident when the issue is elaborated and/or felt as close by individuals, just as the inverse is true

(WILLIAMS; STEIN; GALGUERA, 2013).

In this way, if the problem is seen as close at hand, a greater level of elaboration will also be devoted to it, with a consequent greater tendency to engage in future actions.

Ness In this sense, as an aggravating factor, there is a belief that the environmental issue, in general, is characterized as a problem that finds it difficult to get support and engagement of individuals, precisely because of the distance felt in relation to it (SPENCE; PIDGEON, 2010; SCANNELL; GIFFORD, 2013; BRÜGGER; MORTON; DESSAI, 2016; GUTTRY; DÖRING; RATTER, 2017). However, such belief has been questioned by academia, including the emergence of counterintuitive evidence to this effect (SCHOENEFELD; MCCAULEY, 2015; BRÜGGER; MORTON; DESSAI, 2016; DUAN; ZWICKEL; TAKAHASHI, 2017). Thus, such research lacks a consensus, and empirical studies about it are also still scarce (GUTTRY; DÖRING; RATTER, 2017; O'CONNOR; KEIL, 2017).

Accordingly, this study aimed to verify the theories of blame attribution and level of interpretation in relation to an environmental problem, specifically regarding the waste generated (garbage). Such effort seeks to verify possible influences on the behavior of individuals in relation to environmental issues, here directed to two psychological theories: attribution and interpretation. C As a result, it is expected to obtain a better understanding of the effect of communication on individual accountability for such issues, in order to contribute to a better future construction for greater effectiveness. The method was characterized by a quantitative approach, carried out through a series of nine surveys, investigating to which agent the blame for waste generation was attributed by the participants according to various manipulations in the information text.

2 THEORETICAL REFERENCE

The paper conducted a survey of the literature, focusing on the evolution of the environmental discussion and the emergence of the concepts of sustainable development and sustainability, as well as on attribution and interpretation level theories.

2.1 Evolution of environmental concern

A The discussion of issues related to environmental concerns was driven by the realization of several international events, which began in the 1960s (ANDREOLI; CRESPO; MINCIOTTI, 2017). Among them, we highlight some, explained below.

Initially, the Club of Rome (1968) was the first attempt to bring together people from various interest groups (businessmen, economists and scientists) to discuss environmental issues. In it, it was alerted, specifically, for the limit of growth within the economic model in force until then, guided by exacerbated consumption and highly concentrated in a few nations, more industrialized (OLIVEIRA , 2012). In this sense, this meeting was marked by a pessimistic tone, based on the belief that economic and environmental interests were incompatible.

Responsible for publishing the report "The Limits to Growth", the main proposal of the meeting was the zero growth, which was widely criticized by less industrialized countries, since it would culminate with the stagnation of their development (LIRA; FRAXE, 2014). This report served as the basis for the United Nations Conference on the Environment (1972), held in Stockholm, which was considered the first major international meeting, with the participation of over one hundred countries (OLIVEIRA, 2012).

In 1987, another important environmental report was published, the "Our Common Future" Report, also known

as the Brundtland Report, which formed the basis of the United Nations Conference on Environment and Development (1992), held in Rio de Janeiro (NASCIMENTO, 2012). This document corroborated the premise of unsustainability of the current economic development paradigms, which could be solved, however, through the alignment of economic interests with the environmental issue (LIRA; FRAXE, 2014). It is, therefore, a more optimistic view about the environmental issue, which originated the concept of sustainable development (OLIVEIRA, 2012).

Other international events were also important, such as the World Summit on Sustainable Development, held in 2002 and 2012, popularly known as Rio+10 and Rio+20 (ANDREOLI; BASTISTA, 2020). These events aimed to evaluate the commitments previously signed, reinvigorating the political commitment to sustainable development, in addition to discussing and proposing new and emerging themes (LIRA; FRAXE, 2014). In this sense, it is noted an increasingly accentuated global discussion, contributing both to the consolidation of the terms sustainable development and sustainability, as well as the emergence of new concepts related to environmental concerns, such as green economy (DINIZ; BERMANN, 2012).

2.2 Sustainable Development and Sustainability

In its origin, the concept of sustainable development can be considered generalist, defined as the development that is concerned with meeting the needs of the present, without, however, compromising the ability of future generations to meet their own needs (LENZI, 2006; MARCON; SORIANO-SIERRA, 2017). It is configured, thus, in the emergence of a new rationality, not only economic, traditionally prevailing, but originating from ecology (BARONI, 1992). In this sense, Acselrad (2000) argues that sustainable development means, above all, a technical adjustment in the current order, in the sense of incorporating environmental capital (which is not a free good, but rather liable to capitalization) in order to respond to the negative impacts of the industrialist conception of progress.

As a consequence, the term sustainability is also coined, which, according to Leff (2005), can be defined as a social and political project for the ecological ordering and territorial decentralization of production, as well as for the diversification of types of development and lifestyles of populations. It is a new value, guided by the prospect of a new development model with respect for all forms of life, or another rationality, which considers issues of environmental prudence, economic efficiency, and social justice (LIRA; FRAXE, 2014). Thus, it is configured as the main objective of sustainability the construction of a citizenship that enables better living conditions for humanity, as well as respect for other forms of life, equally important (NASCIMENTO, 2012; LIRA; FRAXE, 2014). A natureza clássica do termo sustentabilidade propõe uma visão tridimensional, pautada pelos aspectos ambiental, econômico e social. A dualidade existente entre o ambiente e a economia, presente na discussão sobre a questão ambiental desde seu primórdio, justifica a inserção dos dois primeiros aspectos (NASCIMENTO, 2012). Já o aspecto social começa a ser considerado, principalmente, devido à constatação de que vários dos problemas ambientais decorrem de externalidades próprias, tanto do excesso quanto da escassez de desenvolvimento: como, por exemplo, consumo excessivo, de um lado, e baixo PIB per capita, do outro (NASCIMENTO, 2012).

Thus, considering the triad of sustainability, the environmental aspect proposes that production and consumption occur while respecting the resilience of ecosystems, while the economic aspect advocates increasing the efficiency of

production and consumption by saving natural resources and continuous technological innovation (eco-efficiency), and the social aspect strives for social justice, with the eradication of poverty and respect for the right to equality (NASCIMENTO, 2012; LIRA; FRAXE, 2014).).

However, more recently, an expansion of the classical nature of sustainability is demanded, encompassing two new dimensions: the political and territorial (SACHS, 1993; PETARNELLA; HOURNEAUX JUNIOR; SILVEIRA, 2016). This criticism is justified, firstly, by the importance of politics in the process of change, as well as by its function of providing an understanding or even alignment among the various agents involved (NASCIMENTO, 2012; LIRA; FRAXE, 2014). Secondly, every action occurs in a certain time and space, being subject to its context of realization, with its own culture (NASCIMENTO, 2012; LIRA; FRAXE, 2014).

Given this new scenario of inclusion of environmental issues in business, government and society discussions in general, as well as the appreciation of the concepts and practices of sustainable development and sustainability, a change in the standards of living of the population is required, inherently linked to their buying and consumption habits. Not surprisingly, there has been a proliferation of studies aimed at understanding this theme, centered on what is conceptualized as conscious consumption. However, the engagement in more ecologically correct living, buying, and consumption habits depends on the perception that individuals have about environmental issues. Two theories that influence this perception will be explored below.

2.3 Attribution Theories and Interpretation Level

During the various situations that involve everyday life, the individual engages in multiple attempts to identify the factors that generate the results experienced, a process conceptualized as causal analysis (FISKE; TAYLOR, 1991). In this sense, attribution theory investigates how individuals interpret and use available information in order to generate causal explanations for the events experienced (FISKE; TAYLOR, 1991; WEINER, 2000; LOPES; MOTA; FREITAS, 2015).).

In general, attribution can be internal or external (FISKE; TAYLOR, 1991; MALLE, 2011). Internal attribution is characterized when the cause of a given event is associated with internal characteristics, such as personality traits, for example, while external attribution is characterized when this cause is assigned to external factors, which are beyond the control of the individual in question, such as situational or environmental factors, for example.

In this sense, Reilly (2014) argues that internal attribution is capable of generating greater affective consequences than when the attribution is external. This happens because, in the first case, the proximity felt is greater, including the evocation of feelings of guilt and shame, which does not happen in the second case, in which the responsibility for the cause of the event is directed to others, thus distancing the individual from the fact (REILLY, 2014). As a result, it can be expected that individuals' attitudes towards a given problem are greater when the attribution of blame is directed at themselves, compared to when the blame is attributed to third parties.

Similarly, interpretation level theory refers to how people mentally represent information (WILLIAMS; STEIN; GALGUERA, 2013), investigating the relationship between interpretation level and perceived psychological distances (TROPE; LIBERMAN; WAKSLAK, 2007; TROPE; LIBERMAN, 2010). In general, the authors argue that people mentally

interpret objects that are psychologically close or distant in two distant ways. When objects are psychologically close, the mental interpretation that occurs is low-level, characterized as detailed, concrete, and contextualized. On the other hand, when objects are psychologically distant, the interpretation that occurs is high-level, characterized as more abstract, stable, and schematized.

In addition, the reciprocal, less intuitive effect has been observed, that is, that psychological distances influence people's thoughts and behaviors, whether in terms of time or space (TROPE; LIBERMAN; WAKSLAK, 2007; TROPE; LIBERMAN, 2010; WILLIAMS; STEIN; GALGUERA, 2013). In this sense, the psychological distance felt in relation to the object affects the level of mental interpretation, which, in turn, affects the evaluation and behavior of individuals in relation to that object (TROPE; LIBERMAN; WAKSLAK, 2007; TROPE; LIBERMAN, 2010)).

Trope, Liberman, and Wakslak (2007) quote as examples the uses of appeals such as "every day" or "in this locality," which invoke meanings of close, probable, and concrete, encouraging a low-level interpretation level, as opposed to expressions such as "every year" or "in a distant locality," which denote meanings of distant, improbable, and abstract, and thus lead to a high-level interpretation. Another example given by the authors refers to Chandran and Menon's (2004) study, which investigated the concreteness of risk communications by adopting the sayings "every day" or "every year." Similarly, risk presented in terms of day was perceived as closer in time, more concrete, and more likely, thus evoking a greater sense of risk, compared to those presented in terms of year.

Thus, the authors argue that both the level of activated interpretation affects the perceived distance, and the perceived distance affects the level of interpretation, which, in turn, affects the future evaluation and behavior in relation to them. In this sense, Williams, Stein and Galguera (2013) state that one of the possible consequences is the influence on the evaluation of a given object, improving the perception about those considered positive and worsening about those perceived as negative, as well as accentuating the actions that will be taken in relation to them.

More than that, Trope and Liberman (2010) suggest that the effect arising from the interpretation level is "super generalized", occurring all the time, as a result of a certain automatic tendency of the mind, and persisting even when the initial reason is no longer present. In this sense, it is expected that there will be an influence of the interpretation level, both in the direct and indirect sense, that is, both in relation to the interpretation level, directly, and in relation to the distance of the objects presented, which will influence the interpretation level. Thus, it is expected that the consumer admits more guilt in relation to the garbage problematic, to the detriment of directing the blame to other possible agents, because of two scenarios: firstly, indirectly, when the environmental problematic is informed in a close way, temporally and spatially; secondly, in a direct way, when there is the elaboration of the informative message.

As The influences of these two constructs on environmental issues have been the subject of study by previous articles (BRUGGER; MORTON; DESSAI, 2016; DUAN; ZWICKEL; TAKAHASHI, 2017; GUTTRY; DÖRING; RATTER, 2017; O'CONNOR; KEIL, 2017), without, however, a consensus between the results found and the strands of discussions outlined.

3 METHODOLOGICAL PROCEDURE

To meet the proposed objective, a quantitative approach was adopted, carried out through a series of nine surveys with 259 participants. The sample was non-

probabilistic, chosen by convenience, and randomly distributed among the groups. By power testing, a minimum sample size of 28 participants per survey was calculated in order to obtain a degree of power above 81% (effect size of 0.5 and error of 0.05).

The procedure consisted in the presentation of an informative text about an environmental problem related to the waste generated (garbage), prepared by adapting a story published by *Agência Brasil* in 2015, entitled "Waste production grows 29% in 11 years, shows research". Different manipulations of blame attribution of the text were employed among the eight surveys, with a gradual increase in the individual's accountability, i.e., with increasingly incisive sentences referring to the individual reader's guilt.

After the presentation of the informative text, the participants were asked to mark how distant or close the blame for the reported problem seemed to be related to the companies, the inhabitants, and themselves. This involved three questions with a bipolar semantic differential scale from 0 to 10, 0 being extremely distant and 10 being extremely close, presented randomly to each respondent. The analysis consisted of exploring descriptive statistics and identifying significant differences in the attribution of blame to these three agents, analyzed using the Wilcoxon non-parametric test.

4 PRESENTATION AND DATA ANALYSIS

Below, the nine surveys carried out are presented and analyzed. The problem of garbage was always informed in a close manner, both temporally (per day) and spatially (country), in the expectation that this would facilitate the attribution of internal guilt: that is, the information of the daily rate and the location Brazil was used, aiming to bring the respondent closer to the problem. Thus, the text remained the same in the different surveys, with the exception of the part highlighted in bold.

The first manipulation (n=29) consisted of presenting the following informational text to the participants, indicating the companies as the ones responsible for waste generation.

> We are the third country in the world - after China and the United States - that generates the most waste, a rate that increased by 29% from 2003 to 2014. Statistics speak of 220 million tons of garbage per day. Who is to blame? It is estimated that: **(1) the more than 100,000 companies operating in the country.**
> And the studies show that only 58% of the garbage collected is disposed of properly, with the rest going to dumps and "controlled landfills", places considered inadequate and that offer risks to the environment and to the population's health.

In this first case, the responses ranged from a maximum of 10 for all agents to a minimum of 5 for the companies and inhabitants and 4 for the respondents themselves. The modes were 10 for the companies and 8 for both the inhabitants and themselves. A significant difference was also obtained in the three pairs: inhabitant and company ($Z=-2.410$, $p=0.016$), inhabitant and themselves ($Z=-2.699$, $p=0.007$) and company and themselves ($Z=-3.122$, $p=0.002$), with the mean (average) scores given to the companies, the inhabitants and themselves being 8.97, 8.21 and 7.55, respectively. In other words, it could be observed that when the attribution of blame is made to the organizations, the participants responded in agreement.

However, when the attribution of blame was directed to themselves, in a more or less subtle way, the results were

different. In this sense, a second manipulation (n=29) consisted in directing the blame for the generation of garbage to the inhabitants of the country, with the reformulation of the sentence to **"(2) the more than 180 million inhabitants in the country"**. The responses ranged from a maximum of 10 for all groups to a minimum of 4 for the companies, 3 for the inhabitants, and 2 for themselves. The modes were 10 for both the companies and the inhabitants and 7 for themselves. Significant differences were found only between themselves and inhabitants (Z=-2.574, p=0.010) and between themselves and companies (Z=-2.283, p=0.022), with the means assigned to companies, inhabitants and themselves being 8.03, 8.00 and 6.83, respectively. Again, it was observed that participants direct responsibility towards the attribution of blame reported in the text, even though companies were also considered.

A third manipulation (n=28) consisted in adding a complementary phrase to the previous sentence, leaving it as **"(3) the more than 180 million inhabitants in the country, in this case ourselves"**. The responses ranged from a maximum of 10 for all groups to a minimum of 1 for companies, 4 for inhabitants, and 3 for themselves. The modes were again 10 for both the companies and the inhabitants, and 8 for themselves. Significant differences were repeated between groups, found only between themselves and inhabitants (Z=-4.113, p=0.000) and between themselves and firms (Z=-3.111, p=0.002). In this case, however, there was variation in the means being 8.36 for the companies, 8.57 for the inhabitants, and 6.32 for themselves.

As the fourth manipulation (n=33), the reader was explicitly blamed, with the saying **"(4) more than 180 million inhabitants in the country, in this case people like you."** Responses ranged from maximum ten for all groups and minimums of 1 for companies and themselves to 4 for inhabitants. The modes were 10 for both the companies and the inhabitants and 8 for themselves. Again, significant differences were found between themselves and the companies (Z=-3.023, p=0.003) and themselves and the inhabitants (Z=-3.795, p=0.000), with the means similar to the previous manipulation of 8.46, 8.79 and 6.82 for the companies, the inhabitants and themselves, respectively.

The fifth manipulation (n=28) counted on saying **"(5) yours and the other 180 million people in the country, in this case people like you"**. Responses ranged from a minimum of 0 to a maximum of 10 for all groups, with equal modes of 10. Again, significant differences were found between themselves and companies (Z=-3.277, p=0.001) and themselves and inhabitants (Z=-3.496, p=0.000), with means of 7.89, 7.50, and 5.89 for companies, inhabitants, and themselves, respectively.

The sixth manipulation (n=28), in turn, consisted in the presentation of the saying "(6) your, one of the more than 180 million inhabitants in the country, in this case people like you". The responses ranged from a maximum of 10 for all groups to a minimum of 3 for the companies and a minimum of 0 for both themselves and the inhabitants, with equal modes for the three agents, of 8. Significant differences were found again between themselves and the companies (Z=-3.496, p=0.000) and themselves and the inhabitants (Z=-3.277, p=0.000), with the means 8.18, 7.75 and 5.65 for the companies, the inhabitants and themselves, respectively.

That is, it was observed that in all cases where the attribution of blame was directed at the participants themselves, statistically significant differences were found between themselves and the others (either the companies or the inhabitants), and in all cases the scores were higher for the others than for themselves. The difference was that in tests 3 and 4, the scores were higher for the inhabitants, while in tests 5 and 6, the scores were higher for the companies, with almost a tie in the first

test. The scores assigned to themselves ranged from an average of 5.65 to 7.55. It was noted, therefore, that in all the aforementioned cases the participants absolved themselves of blame for the environmental problem of waste generation, regardless of the texts presented.

In an attempt to manipulate the text to be even more incisive in the attribution of blame, two last tests were run. Thus, the seventh manipulation (n=28) was even more explicit and direct, not only directing the blame at themselves, but reinforcing it, by saying **"(7) yours. That's right, yours, one of more than 180 million people in the country"**. Responses ranged from a maximum of 10 for all agents to minimums of 4 for companies, 5 for inhabitants, and 2 for themselves, with means of 8.14, 8.46, and 6.46, respectively. The modes were modes of 8 for companies, 10 for inhabitants, and 7 for themselves. There was a significant difference between themselves and inhabitants (Z=-3.846, p=0.000) and themselves and companies (Z=-3.199, p=0.001). Thus, despite the reinforcement inserted, once again there was attribution of blame to third parties, to the detriment of themselves.

The eighth manipulation (n=28) was not only more explicit and direct, but also exclusive, attributing the blame to only themselves, as well as reinforcing the idea. Therefore, the text has been changed **to (8) yours. That's right, yours**. The answers varied from maximum 10 for all agents and minimum 4 for the companies, 3 for the inhabitants, and 0 for themselves, with means of 8.36, 8.11, and 6.71, respectively. The modes were 10 for both firms and inhabitants and 6 for themselves. Again, significant differences were identified between themselves and the inhabitants (Z=-3.158, p=0.002) and themselves and the companies (Z=-3.296, p=0.001).).

Finally, using the interpretation level theory in a direct way, the participants (n=28) were asked to elaborate a short summary about what they had understood in relation to the presented text. In this case, the manipulation present in the test **(4) 180 million people in the country, in this case people like you,** was repeated, since it presented the highest mean score for attributing blame to themselves. The responses ranged from maximum 10 for all agents and minimum 0 for the companies, 1 for themselves and 5 for the inhabitants. The (modes) were 10 for both the companies and the inhabitants and 5 for themselves. This time, significant differences were found between inhabitants and companies (Z=-2.418, p=0.016) and between themselves and inhabitants (Z=-2.922, p=0.003), with a higher mean for inhabitants (8.57), followed by companies (7.39) and themselves (7.14).). In other words, even with an increase in the mean blame attribution to themselves, the other agents still received higher scores, including a significant difference between the scores given to the inhabitants and to themselves.

Table 1: Summary of the means, variances and significant differences of treatments

Manipulations	Companies	Inhabitants	They	Significant Differences (Wilcoxon)
(1) more than 100 thousand companies operating in the country	8,97 (5-10)	8,21 (5-10)	7,55 (4-10)	inhabitants < companies (Z= -2,410, p=0,016) Themselves < inhabitants (Z= -2,699, p=0,007) and companies (Z= -3,122, p=0,002)
(2) 180 million people in the country	8,03 (4-10)	8,00 (3-10)	6,83 (2-10)	Themselves x inhabitants (Z= -2,574, p=0,010) and companies (Z= -2,283, p=0,022)
(3) 180 million people in the country, in this case ourselves	8,36 (1-10)	8,57 (4-10)	6,32 (3-10)	themselves < inhabitants (Z= -4,113, p=0,000) and companies (Z= -3,111, p=0,002)

(4) 180 million people in the country, in this case people like you	8,46 (1-10)	8,79 (1-10)	6,82 (4-10)	themselves < inhabitants (Z= -3,795, p=0,000) and companies (Z=-3,023, p=0,003)
(5) yours and the other 180 million inhabitants in the country	7,89 (0-10)	7,50 (0-10)	5,89 (0-10)	themselves < inhabitants (Z= -3,496, p=0,000) and companies Z= -3,277, p=0,001)
(6) yours, one of the more than 180 million inhabitants in the country	8,18 (3-10)	7,75 (0-10)	5,65 (0-10)	Themselves < inhabitants (Z= -3,277, p=0,000) and companies (Z= -3,496, p=0,000)
(7) yours. That's right, yours, one of the more than 180 million inhabitants in the country	8,14 (4-10)	8,46 (5-10)	6,46 (2-10)	Themselves < inhabitants (Z= -3,846, p=0,000) and companies (Z= -3,199, p=0,001)
(8) yours. That's right: yours.	8,36 (4-10)	8,11 (3-10)	6,71 (0-10)	Themselves < inhabitants (Z= -3,158, p=0,002) and companies (Z= -3,296, p=0,001)
(9) 180 million inhabitants in the country, in this case people like you. (*With elaboration)	7,39 (0-10)	8,57 (5-10)	7,14 (1-10)	Inhabitants > companies (Z= -2,418, p=0,016) Themselves < inhabitants (Z= -2,922, p=0,003)

Source: Own elaboration.

In order to further explore the data obtained in this last (ninth) test, the open answers of informative text elaboration were tabulated in three groups: those that presented general information of the text (n=2), those that showed their own attribution for the blame of the garbage problem (n=9) and those that directed this blame to any third party (n=17). As examples, we have the following answers, respectively:

> "It is important to recycle garbage, so that it doesn't all go to the landfill, polluting the environment even more and making it harder to recycle." (group 1)
>
> "We are the third largest garbage generator in the world, only behind China and the USA. More than half of this generated garbage does not have an adequate destination, and we are to blame!" (group 2)
>
> "The people who are lazy and do not respect the environment are to blame for this excess of garbage" (group 3)

Comparing the mean scores attributed to each agent, it was verified that, although the inhabitants were responsible for the highest mean score and themselves for the lowest, when the blame for the garbage problem was attributed to themselves (group 2), no significant difference was found between these two agents (Z=-1.826, p=0.068). However, on the other hand, this difference was found in group 3, when the attribution of blame was directed to third parties (Z=-2.056, p=0.04).

It is also interesting to point out that significant positive correlations were found between the scores attributed to themselves and to the inhabitants in 8 of the 9 surveys carried out, verified by Spearman's non-parametric test, which varied between weak (test 4, with S=0.361, p=0.039) and strong (test 1, with S=0.844, p=0.000), with greater expression of moderate (tests 2, 3, 6, 7, 8 and 9, with

S=0.483 and p=0.008, S=0.538 and p=0.003, S=0.440 and p=0.019, S=0.483 and p=0.009, S=0.435 and p=0.021, and S=0.551 and p=0.002, respectively). These show that the participants demonstrated a relationship between the agents called 'inhabitants' and 'themselves'. Moreover, as the agent called 'themselves' is a subgroup of the agent 'inhabitants', it is reasonable to assume that this relationship is seen as even more direct by the respondents themselves. Thus, the significant differences found between these two agents in all surveys are even more aggravating and can even be interpreted as a contradiction. Perhaps this is why the environmental theme still lacks congruent and consolidated understandings.

In this sense, it could be noted that in all nine different tests, with or without reinforcement, with or without elaboration, and even in the test where the blame was directed exclusively to the participants themselves, there was attribution of blame to third parties, with significant differences found between themselves and others, with higher scores attributed to the companies (tests 1, 3, 4, and 7) or the inhabitants (tests 5, 6, 8, and 9), or even both (test 2). Thus, the difficulty or resistance of the participants to effectively assume the blame for the garbage is clear, regardless of the manipulations employed.

Thus, the results found here support the strand that argues for the lack of backing and engagement of individuals about environmental issues (BRÜGGER; MORTON; DESSAI, 2016), adding empirical evidence to this (GUTTRY; DÖRING; RATTER, 2017).

As argued by Brügger, Morton and Dessai (2016), the perception of people in relation to environmental issues is still configured as a little explored theme, with little empirical evidence, which are even discordant, without consensual results. Corroborating this, Guttry, Döring and Ratter (2017) add the great complexity involved in this relationship, both concerning the theme of environmental issues, which is, at the same time, absolute, intangible, inexorable, unlimited, and convincing, and the perception process of the receiver, subject to several variables of influence.

More importantly, both studies argue that a low perception of personal relevance regarding these issues is problematic in the sense of losing an important source of motivation to perform and engage in future actions concerning them. This argument is congruent with what was found here. Thus, we corroborate the suggestion to work with the proximity of individuals to these issues, a fundamental point in the development of strategies that can mobilize and engage the population about the importance of environmental issues.

5 FINAL CONSIDERATIONS

This study aimed to verify the theories of blame attribution and the level of interpretation in relation to the environmental problem of garbage. In this sense, it could be noted that in all the different tests, regardless of the different modifications made to the texts presented, the attribution of blame was always directed to third parties, including significant differences found between themselves and the two other agents, sometimes with higher scores attributed to companies, sometimes to the inhabitants.

Furthermore, the significant positive correlations found between the scores attributed to themselves and to the country's inhabitants, found in almost all the nine surveys conducted, make it possible to suggest a contradiction in the participants' answers, that is, the blame is attributed to the inhabitants, in general, but not to themselves, specifically, even though they are also inhabitants. The synthesis of the results indicates a clear difficulty and/or resistance of the participants to effectively take the blame for the garbage and/or make this problem close to them, supporting one of the strands of study about this. As the

philosopher Leandro Karnal says, there is an inherent tendency in us to believe that the problem is always the others.

As an aggravating factor, according to attribution theory, the less closeness one feels toward guilt, the less likely one is to engage in attitudes toward the issue in question. Similarly, according to the interpretation level theory, the smaller the thoughts related to a certain issue, the less evident are the evaluations and reactions towards it. The results found indicate that the environmental problem of waste fits into this scenario. This means that it is reasonable to state that if individuals tend to reject the attribution of blame for littering, as well as resist making it a proximate issue, they will also tend to engage in fewer attitudes towards it. If such a lack of engagement was already found in self-attribution and perception as a proximate problem, one can assume that this picture is much more aggravated.

With that said, it becomes necessary to understand in more depth the occurrence of the results obtained in this research, either testing new manipulations or even extending the analysis to new environmental issues, besides the issue of solid waste (garbage), such as, for example, forest deforestation, water pollution, global warming, among others. It is suggested that such scenario is also susceptible to the influence of culture (GUTTRY; DÖRING; RATTER, 2017), thus lacking a greater understanding of how environmental issues are viewed and faced in the country. More importantly, it is emphasized the need to identify possible ways to reverse the presented picture.

Finally, the question that remains is, if such distance is in fact felt in relation to the garbage problem, aren't there also other environmental problems that encounter difficulty and/or resistance from society? Is this an isolated case, or is this in fact the population's reaction to environmental issues in a systemic way?

In this sense, we leave as a recommendation for future studies the survey and investigation of variables that could contribute to minimizing the resistance felt by individuals in taking the blame and/or the proximity for the environmental problem of garbage. This is a research gap that is not only theoretical, but has important managerial implications, in the sense that it could contribute to the improvement of the work and the results obtained with environmental awareness programs among the population.

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