

The ontogeny of cooperative cognition and fairness norms in distributive dilemmas

La ontogenia de la cognición cooperativa y las normas de equidad en dilemas distributivos
A ontogenia da cognição cooperativa e das normas de justiça em dilemas distributivos



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Resumen

Este artículo explora una perspectiva naturalista y culturalmente situada sobre la ontogénesis de la cognición cooperativa y las normas de justicia en dilemas distributivos que implican la asignación de recursos. Según este enfoque, el proceso de toma de decisiones en los dilemas distributivos se basa en consideraciones generales sobre el bienestar de los demás y el respeto de los intereses y derechos de todos en las interacciones conflictivas. El sentido de la equidad se concibe además como el resultado de interacciones sociales y como modulado por factores contextuales. Sin embargo, sostengo que el sentido humano de la justicia en los dilemas distributivos está ciertamente delimitado por principios muy concretos que rigen su expresión y orientan el establecimiento de soluciones razonables, generalizables y prescriptivas en situaciones de cooperación. Esta lógica se ve ampliamente confirmada por múltiples evidencias procedentes de estudios evolutivos y transculturales dentro de las ciencias del comportamiento. Por último, sugiero que la cognición cooperativa y las normas de justicia en los dilemas distributivos deben explorarse como cuestiones científicamente relevantes que son independientes de los supuestos ideológicos sobre la materia que suelen terminar en interpretaciones problemáticas de los datos empíricos

Abstract

This paper explores a naturalistic and culturally situated perspective on the ontogeny of cooperative cognition and fairness norms in distributive dilemmas involving the allocation of resources. According to this approach, the decision-making process in distributive dilemmas is grounded on general considerations about others' well-being and respecting everyone's interests and rights in conflictive interactions. The sense of fairness is also conceived as the outcome of social interactions and is modulated by contextual factors. However, I claim that the human sense of fairness in distributive dilemmas is certainly bounded by concrete principles that govern its expression and guide the establishment of reasonable, generalizable, and prescriptive solutions in cooperative situations. This logic is broadly confirmed by multiple pieces of evidence from evolutionary-informed and cross-cultural studies within behavioral sciences. Finally, I suggest that cooperative cognition and fairness norms in distributive dilemmas must be explored as scientifically relevant issues independent of ideological assumptions that usually result in problematic interpretations of the empirical data

Resumo

Este artigo explora uma perspectiva naturalista e culturalmente situada sobre a ontogenia da cognição cooperativa e das normas de justiça em dilemas distributivos que envolvem a alocação de recursos. De acordo com esta abordagem, o processo de tomada de decisão em dilemas distributivos baseia-se em considerações gerais sobre o bem-estar dos outros e no respeito pelos interesses e direitos de todos em interações conflituosas. O sentido de justiça também é concebido como resultado de interações sociais e é modulado por fatores contextuais. No entanto, afirmo que o sentido humano de justiça nos dilemas distributivos é certamente limitado por princípios concretos que regem a sua expressão e orientam o estabelecimento de soluções razoáveis, generalizáveis e prescritivas em situações cooperativas. Esta lógica é amplamente confirmada por múltiplas evidências de estudos evolucionistas e interculturais dentro das ciências comportamentais. Finalmente, sugiro que a cognição cooperativa e as normas de justiça em dilemas distributivos devem ser exploradas como questões científicamente relevantes, independentes de pressupostos ideológicos que geralmente resultam em interpretações problemáticas dos dados empíricos.

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Introduction

Concerns for fairness in distributive dilemmas are one of the first moral expressions to emerge in early childhood and have enormous relevance for the understanding of human moral decision-making in contexts where the distribution of resources is conflictive (**Essler, Lepach, Petermann & Paulus, 2020**). This empirical problem has been traditionally studied by social and developmental psychologists as the problem of “distributive justice”. From this perspective, distributive justice encompasses the evaluative concerns, beliefs, and judgments that people have about how the outcomes of human cooperation (**i.e., resources, well-being**) should be distributed among individuals (**Deutsch 1975, 1985**)¹.

Some researchers have proposed the existence of an innate sense of fairness (**Geraci and Surian, 2011; Schmidt and Sommerville, 2011; Sloane et al., 2012**). These authors claim that a rudimentary sense of fairness is expressed as early as 15 or 20 months old, taking into consideration the capacity of babies to react to unequal or inequitable distributions (**Surian, Ueno, Itakura, & Meristo, 2018**), the tendency to spontaneously prefer equal distributors (**Geraci & Di Nuovo, 2018**), and the expectancy for equal resource allocations (**Buyukozer Dawkins, Sloane, & Baillargeon, 2019**). These proposals make part of a recent trend in developmental psychology that explores preverbal infants’ social-cognitive abilities, such as moral evaluations and preferences (**Hamlin, Wynn, & Bloom, 2007; Hamlin & Wynn, 2011**).

¹ The concepts of fairness and distributive justice considered in this paper are commonly used in the behavioral sciences and their definitions are guided and limited by empirical research. Therefore, this paper does not involve any consideration of additional definitions or conceptualizations coming from the philosophical reflections in the fields of ethics and political philosophy. For a useful discussion on this matter see Sarmiento-López & Yáñez-Canal (**2019**).

However, different authors have pointed out the difficulties of this approach, since it is grounded on questionable biological and evolutionary assumptions recently confronted in life and evolutionary sciences (Carpendale & Wallbridge, 2023). Human concerns for fairness in distributive scenarios are modulated, instead, by multiple ecological, contextual, and cultural factors (Nettle & Saxe, 2020), including parental and socialization practices (Blake et al., 2015), culture-specific concepts of self and social-collective responsibility (Rochat et al., 2009; Paulus, 2015) political orientations (Mitchell et al., 2003; Haidt, 2012) and social-economic status (Cappelen et al., 2013; Almas et al., 2017).

The rules and considerations performed by human individuals in distributive dilemmas also show a very complex developmental pattern. For instance, it has been proposed that human children first focus on strict equality, allocating resources in an egalitarian manner and without considering situational factors (Damon, 1975; Fehr et al., 2008; Malti et al., 2016; Rizzo & Killen, 2016). Later, human children start to take into consideration situational and contextual factors to embrace norms that deviate from equality when distributing resources (Almås, Cappelen, Sørensen, & Tungodden, 2010; Kanngieser & Warneken, 2012; Kienbaum & Wilkening, 2009; Rizzo & Killen, 2016; Schmidt, Svetlova, Johe & Tomasello, 2016; Huppert et al., 2019; Sequeira, 2023).

In brief, the sense of distributive justice gets more complex with age and involves the application of divergent principles. The capacity of human individuals to understand these “legitimate reasons for allocating resources unequally” (Schmidt et al., 2016), is grounded on a complex interaction of affective and cognitive processes, group concerns, and cultural values.

This paper explores a naturalistic and culturally situated perspective on the development of cooperative cognition and concerns for fairness in distributive dilemmas involving the allocation of resources. More specifically, I defend the idea that human capacities for the solution of cooperative dilemmas involving the distribution of resources are the consequence of situated social interactions, but they are also grounded on evolved social-cognitive capacities that limit their expression. This perspective then contributes to the study of human moral development from a developmental-systems perspective (Carpendale, Hammond, & Atwood, 2013). Moreover, the sense of fairness is considered a critical manifestation of a moral domain of social knowledge, configured as independent from conventional or personal issues, and grounded on concerns for others’ welfare and respect for others’ interests in conflictive situations (Smetana et al., 2018).

In the first section, I summarize some of the most important findings about cooperative cognition and the sense of fairness in distributive dilemmas from the perspective of behavioral sciences. Later, I explore a naturalistic and culturally situated perspective on the matter and claim that our sense of fairness is the outcome of social interactions that foster and/or hinder the emergence of considerations, judgments, and reasons about what it means to establish just solutions in cooperative situations. However, this sense of fairness is presented as bounded and guided by concrete principles that govern its expression. In the final part, I suggest that cooperative cognition and fairness concerns must be explored as empirically relevant issues independent of normative judgments and ideological assumptions on the matter that usually end up in problematic interpretations of the empirical data.

Fairness norms in distributive dilemmas. An overview of early and contemporary psychological research

One of the first models to identify the diversity and situational nature of fairness concerns was the one proposed by psychologist Melvin J. Lerner. In some of his classical works on the social psychology of justice, Lerner realized that humans have different motives for achieving and maintaining justice, and these motives change depending on the context and the sort of human interactions or relationships established (1977).

His model considered four types of justice. First, when humans perceive or experience a feeling of belongingness or close relation such as the one that exists in families, the principle of justice most used is the one of need. When humans feel like a part of a group, and as units or members of a team, the principle of justice most used is the one of parity (or equality). The third principle of justice is one of equity, which appears when humans feel a difference, independence, and nonequivalence with others. In these cases, human individuals apply the logic of merit and deservingness. Finally, there exists a justice of the law where the most crucial aspect is to respect the given rules governing an exchange.

Classical authors further explored the idea of a close relationship between the type of interpersonal relationship established by two or more agents and the justice principles they apply in distributive scenarios. For instance, Greenberg and Leventhal (1976) claimed that the contribution principle does not foster social or emotional bonds but applies as an instrument for motivating people to work hard. Conversely, when an agent wants to foster positive interpersonal bonds with other individuals, she usually applies the principle of equality/parity (Schwinger, 1986).

In other words, the principles of justice applied in distributive scenarios were initially approached as multidimensional and dependent on different types of situational and/or interpersonal factors. Later, the main consensus in the behavioral sciences was the existence of at least three principles of justice: equity or contribution, equality-parity, and need (Deutsch, 1975; Lerner, 1977; Leventhal, 1976; Mikula & Schwinger, 1978).

The cognitive-developmental tradition in moral psychology also explored the ontogeny of the sense of fairness and proposed an age-related stage model according to which the transition between these moral principles is related to developmental changes in general cognition and thinking. Damon (1977) found that justice concerns seemed to develop through a series of age-related stages and addressed the previous hypothesis of Jean Piaget (Piaget, 1932/1965), Lawrence Kohlberg, and Carol Gilligan (Kohlberg & Gilligan, 1971; Kohlberg, 1981), who had previously suggested that justice and fairness concerns have a parallel development with the consolidation of logical operations in children².

2 For instance, Piaget (1932/1965) suggested that both logic and morality develop through stages and that each stage is a structure that, formally considered, is in better equilibrium than its predecessor. However, as Lawrence Kohlberg explained “...moral judgments (or moral equilibrium) involve two related processes or conditions absent in the logical domain. First, moral judgments involve role-taking, taking the viewpoints of others conceived as subjects, and coordinating those viewpoints, whereas logic involves only coordinating viewpoints on objects. Second, equilibrated moral judgments involve principles of justice or fairness”. (Kohlberg, 1981, p.194)

According to Damon, children develop their fairness concerns starting from a point of self-interest and egocentrism, where they attend to wishes and desires of reward or physical irrelevant characteristics of physical objects. Then they advance to a preference for equal division and later acquire an understanding of behavioral and psychological reciprocity, where reward in proportion to input or need is the rule. This developmental progression, and the relation between moral development and logical reasoning, was later confirmed by cross-cultural studies performed by Robert Enright and colleagues, including studies in the Democratic Republic of the Congo (**formerly known as Zaire**), the United States, and Sweden (**Enright, Franklin, & Manheim, 1980; Enright et al., 1984**).

But where do these principles come from? In recent years, the main assumptions of the cognitive-developmental model of distributive justice have been put into question. For instance, as it was convincingly demonstrated by Turiel and the proponents of the social-domain theory, children distinguish between the conventional and the moral domain of social knowledge from a very early stage of development (**Turiel, 1983; Killen & Smetana, 2006; Smetana, Jambon, & Ball, 2013**). This poses a crucial challenge for studying the motives and reasons that children have when distributing resources in a conflictive situation. Additionally, it seems that the use of different rules and principles in distributive scenarios is present from a very early stage of development, even as early as three years old. This would contradict the idea of age-related stages for the development of moral cognition applied to decision-making in distributive dilemmas.

Alternatively, the empirical evidence favors a developmental-systems approach to the matter (**Carpendale, Hammond, & Atwood, 2013**) which is still highly influenced by the pioneering work of Piaget (**1932/1965**) Kohlberg (**1981**), and the social-domain theory (**Turiel, 1983; Killen & Smetana, 2006; Smetana et al., 2018**). From this perspective, it is the ontogeny through social interactions and the progression in the knowledge of the physical and the social world that constitutes the development of moral concerns for fairness in the first place.

As mentioned above, decades of research in social and developmental psychology have shown the complexity of distributive justice concerns including equity and merit, equality, and need. Human individuals seem to prefer egalitarian distributions during the first years of life, but later start to develop and understand “legitimate reasons for allocating resources unequally” (**Schmidt et al., 2016**). These legitimate reasons include considerations of merit or deservingness (**Baumard et al., 2012; Hamman, Bender, & Tomasello, 2014; Kanngiesser & Warneken, 2012**) and ‘need’ (**Schwinger & Lamm, 1981; Lamm & Schwinger, 1980, 1983; Paulus & Moore, 2017; Paulus, 2014**).

For instance, when an individual considers that a reward or product of social cooperation should be distributed according to a principle of proportionality that favors agents who contribute the most we talk about the principle of merit. More importantly, this principle follows the prescriptive rule that we must distribute resources according to the contribution of every agent involved in collaborative and cooperative activities. Children do show sensitivity to this principle as early as age three using first-party and third-party contexts, following relevant evidence found by Anderson & Butzin (**1978**), Baumard and colleagues (**Baumard et al., 2012**), Hamman, Bender, & Tomasello (**2014**), Kanngiesser & Warneken (**2012**), Kenward & Dahl (**2011**), and Warneken et al. (**2011**)³.

3 Some cultural factors certainly affect the consideration of these rules in distributive tasks. For instance, some studies have not found the presence of merit concerns in groups of rural and indigenous children in Africa and South America during resource allocation scenarios (**Schäfer, Haun, & Tomasello, 2015; Angarita & Viciano, 2022**).

This sense of merit especially emerges when children are engaged in situated collaborative activities (**Engelmann & Tomasello, 2019**). According to a systematic review on the topic, “While meritocratic sharing (**i.e., sharing rewards by taking merit into account**) was found with 3 – to 4-year-olds in a collaboration task, a similar sharing pattern was not found for a parallel work setup where there was no collaborative task (**Hamman et al., 2014**) or for a neutral windfall situation where children were merely given some resources instead of earning them” (**Noh, 2019, p. 3**).

The disposition to favor needy agents is also present from a very early age in human development. Leventhal & Weiss (**1975**), Karuza & Leventhal (**1976**), and Leventhal (**1976**) were the first to show that children take into consideration the material needs of other agents when deciding how to distribute a resource, and they do favor needier agents. In a seminal study, Schwinger & Lamm (**1981**) showed that when a needier person had contributed significantly less than the other in the task of obtaining the resource to be distributed, she received on average about half of the profit, which means that the principle of need was taken into consideration over the one of equity. Lamm & Schwinger (**1980, 1983**) and Schwinger & Lamm (**1981**) also found that the consideration of ‘need’ is the option of choice to distribute resources among agents who have contributed equally to a task but differ in their material needs.

Moreover, the consideration of ‘need’ showed to be more significant when it was the result of an explicit request for acting “justly” (**Lamm & Schwinger, 1983**), it was higher when the social relationship between the agents was one of close friendship, and it was indifferent in respect to the source of the need condition (**Lamm & Schwinger, 1980**). More recent experiments have further explored and confirmed the early development of concerns for equality, need, and charity in children (**Paulus & Moore, 2017; Paulus, 2014; Elenbaas, 2019; Rizzo, Elenbaas, Cooley, & Killen, 2016**).

Finally, one factor that affects the emergence of fairness concerns is the nature of the resource and the possibility of applying different rules of distribution in the experimental scenarios. For instance, children take merit more into consideration when the resource to distribute is a ‘luxury resource’, but ‘necessary resources’ are distributed more equally (**Rizzo & Killen, 2016**). In a study performed by Rizzo et al. (**2016**), children from 3 to 8 years old had to allocate necessary and luxury resources to recipients who were either rich or poor. With age, children allocated more resources to the poor recipient, rectified existing inequalities, and showed concern for disadvantaged individuals (**Elenbaas et al., 2016**).

On the cultural origins of the human sense of fairness

Based on the previous ideas, I adopt the idea that the sense of human fairness is a dimension of the moral domain of social knowledge that develops and emerges from human cooperative interactions and is grounded on concerns, judgments, and norms related to the preservation of others’ well-being and the respect of everyone’s interests in conflictive situations (**Smetana et al., 2018**).

This position was conceptualized long ago by Piaget (**1932/1965**), who claimed that “...the sense of justice, though naturally capable of being reinforced by the precepts and the practical example of the adult, is largely independent of these influences, and requires nothing more for its development than the mutual respect and solidarity which holds among children themselves. (...) the rule of justice is a sort of immanent condition of social relationships or a law governing their equilibrium” (**p. 195, 196**).

At this point, I shall insist that 1) human individuals have a plural and flexible way when thinking about distribution in cooperative di-

lemmas but most importantly, 2) these flexible ways of thinking are always related to the respect of others' well-being, rights, and interests in conflictive situations. In distributive dilemmas, these concerns are expressed by pondering altogether deservingness and effort, property, and leadership, as well as the role of disadvantage, equality, and compensation depending on the circumstances that shape our decision-making.

Consequently, both merit and need are emergent properties of cooperative interactions grounded on a sense of equality and must be considered in any approach to the development of moral cognition in distributive dilemmas. The application of our moral sense of fairness just implies the expression of different dispositions in flexible and complex social situations, which include concerns for other contributions and other needs on a background of equal respect. This is the reason

behind the overt variability of principles of fairness applied in distributive scenarios.

I further claim that this diversity is a consequence of divergent developmental systems that gradually shape the ways human adults consolidate their fairness concerns. The cultural heterogeneity in terms of moral concerns, evaluations, and norms, is partially explained by processes of social conformity and group affiliation which have driven the mechanisms of cultural evolution (Henrich & Muthukrishna, 2021). As was explored by House et al. (2020), human children coming from different social groups tend to diverge in their development of social preferences in dilemmas involving prosocial actions, but what seems to be a 'universal' psychological fact is that they tend to move with age toward the behaviors and normative judgments of adults in their communities (see Figure 1).

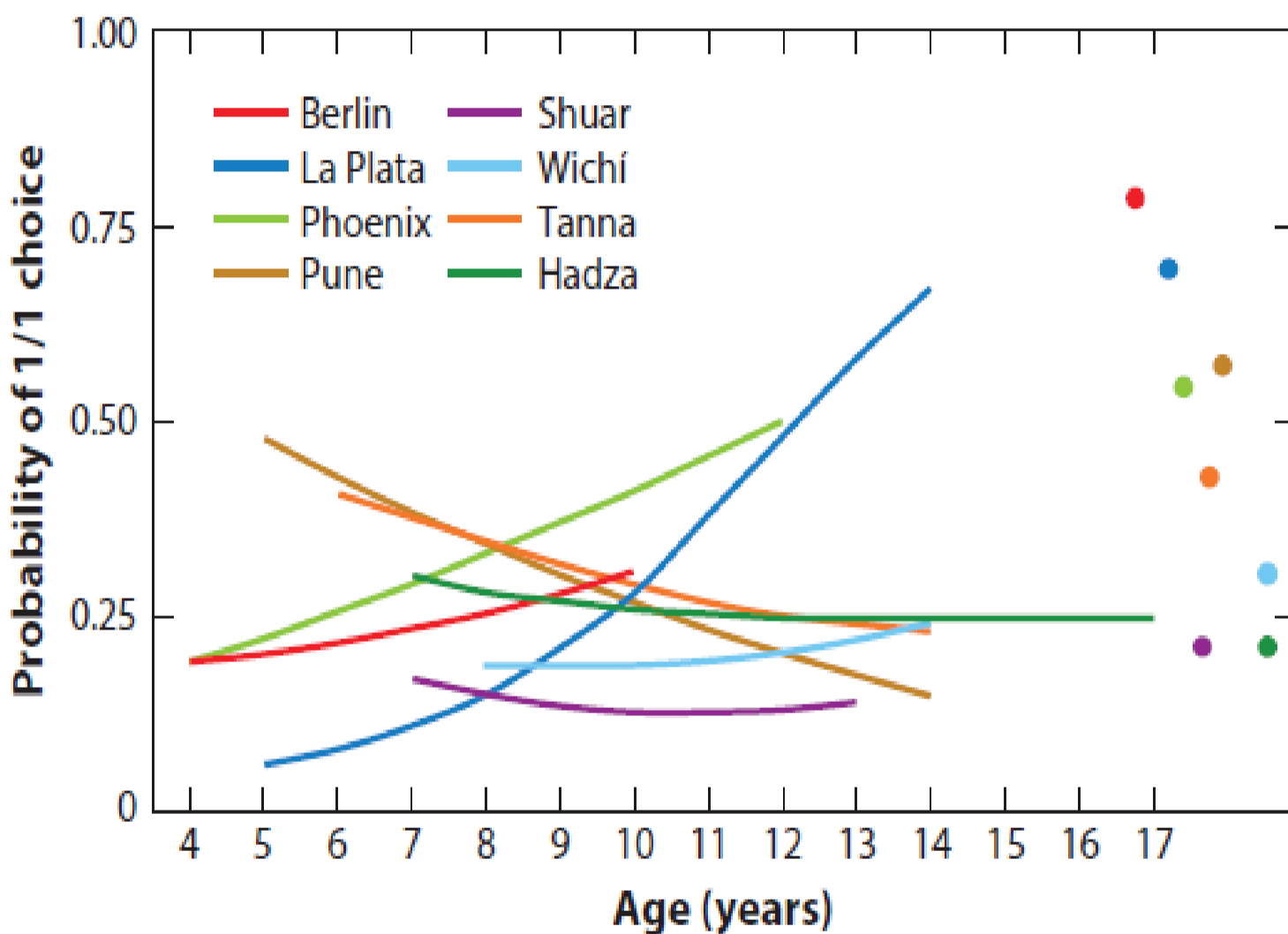


Figure 1. The proportion of children who choose an egalitarian option in an economic game at different ages in eight (8) different cultural groups. Children of each culture tend to move with age toward the normative standard of adults in their communities.

Taken from: House, B. R., Kanngiesser, P., Barrett, H. C., Broesch, T., Cebiglu, S., Crittenden, A. N., Erut, A., Lew-Levy, S., Sebastian-Enesco, C., & Smith, A. M. (2020). Universal norm psychology leads to societal diversity in prosocial behavior and development. *Nature Human Behaviour*, 4(1), 36-44.

Human beings develop in a social world full of cultural meanings, institutions, and social norms that determine ethical prescriptions or considerations of the correct way to live and how to distribute the benefits of cooperation. Consequently, the emergence and reproduction of values and attitudes during social interactions, and subsequent moral experiences of individuals, shape the way fairness and distributive justice concerns are conceived and expressed. This circumstance is even higher in adulthood. Social and political attitudes of people, as well as contextual and geographical factors, influence our cooperative cognition in resource allocation dilemmas and this is reflected in the context

of political life where the perceptions, judgments, and normative thinking about economic disparities between people are higher.

Deutsch (1975) suggested that what guides different orientations towards the distribution of resources and the application of principles of equity, equality, and need, are the different contextual configurations on the level of social interaction within a community. For instance, he argued, that equity rather than equality or need will be the dominant principle of distributive justice in cooperative relations where economic productivity is a primary goal. In other words, if a cooperative system is oriented toward increasing its economic productivity, the rational ten-

gency of its members will be to allocate economic products and goods (resources, roles, and means of production) to those able to use them effectively.

Conversely, in cooperative relations where fostering enjoyable social relations is a primary emphasis, equality will be the dominant principle of distributive justice. In these circumstances, the most critical conditions for justice are mutual esteem and respect. Equality is the principle endorsed by these solidarity-oriented groups. Finally, in cooperative relations where the fostering of personal development and personal welfare is the primary goal, 'need' will be the dominant principle of distributive justice.

Following these ideas, Ali Kazemi, Eek, & Garling (2017) found that when the goal established in a cooperative interaction is productivity, people tend to prefer equitable allocations. However, when the goal is harmony and social cohesion, they prefer equal outcomes. In a similar vein, Meindl, Iyer, and Graham (2019) confirmed the existence of at least two main distributive justice principles that people follow according to their ideals about the ultimate goals of society. When people think that the goal of a society is well-being, they show a distributive justice belief based on the principle of equality/need. When people think the goal of a society is societal power, they show a distributive justice belief based on equity/merit instead.

Finally, according to Cappelen, Falch & Tungodden (2020), there are three salient fairness views around which humans determine the fairest distribution of the costs and benefits of cooperation, considering the role of luck and personal responsibility in the result. In the first place, there is an 'Egalitarian fairness' view, according to which income inequalities that derive from luck and performance should be eliminated. Secondly, the meritocratic fairness view has it that inequalities resulting from performance are fair and acceptable, whereas inequalities resulting from luck are unfair. Finally, according to the libertarian fairness view, income inequalities due to luck and performance are fair and should be accepted.

All this evidence invites us to conceptualize a coherent naturalistic and culturally situated approach to cooperative cognition and fairness in distributive dilemmas. Accordingly, and having in mind that both human children and adults follow at least two principles when distributing resources that result from cooperation (i.e., merit and need), it is reasonable to think that these two principles are true emergent manifestations of a sense of fairness and should be considered natural boundaries of fair reciprocity during cooperative interactions that involve the management of scarce resources.

As I suggested before, these boundaries of fair reciprocity may be expressed differently in distributive dilemmas depending on the general preferences of social groups in their cooperative interactions (see **Figure 1**). These disparities may cause the impression that principles of fairness are just "...ideological formations embedded in socioeconomic and historical contexts" (Goudarzi, Badaan, & Knowles, 2021).

However, I claim that the sense of fairness is an emergent property of cooperative interactions, naturally bounded by moral concerns and corrective attitudes that follow the respect and preservation of everyone's interests in collaborative and conflictive interactions. These principles are in general terms, merit, and need. These two principles legitimately belong to the domain of human cooperative cognition, and both are endorsed by individuals in distributive dilemmas depending on the task at hand and independently from the socioeconomic and historical context.

At this moment, it is relevant to clarify some points. To claim that these principles are expressed independently from the socioeconomic-

ic and historical contexts means that both principles are endorsed by human individuals in almost any group so far empirically studied (for results that contradict this claim see: Schäfer, Haun, & Tomasello, 2015 and Angarita & Viciano, 2022). To properly understand this claim, we must consider that human social cognition and behavior occur at different levels of interaction, from the micro to the macro. For instance, individualistic societies⁴ (traditionally depicted as dominated by neoliberal ideologies) may express a more generalized tendency towards merit and effort when evaluating the distribution of resources (Goudarzi et al., 2021). However, this does not exclude whatsoever the fact that millions of individuals within these individualistic societies also orient themselves toward equality and need when reasoning about fairness and even oppose the imposition of "meritocratic" narratives when considering distributive issues. The opposition to the neoliberal and meritocratic order is, not surprisingly, fueled by powerful critiques coming from the Western academic context.

In the same vein, collectivistic societies generally conceived as more oriented to harmony and social cohesion are usually the most unequal societies in the world and base their collective concerns for fairness on intuitions about hierarchy, dominance, and merit (Singelis et al., 1995). Hofstede and colleagues (2001) are well-known for their research on the close association between collectivistic attitudes and values and the presence of 'power distance', or the expectation and acceptance of an unequal distribution of power and wealth in different contexts.

To sum up, historical, and socioeconomic contexts do shape a generalized orientation of certain groups toward a principle of fairness over another, but this does not exclude the fact that both principles do exist in a generalized and prescriptive manner when we focus on the micro-contexts of social encounters and cooperative activities. Moreover, this is in line with an undeniable and intuitive fact: human societies do pursue both social cohesion and productivity; and human beings take into consideration disadvantages and needs, as well as efforts and personal responsibility, when deciding how to distribute resources that result from cooperation in a fair way. The recent proliferation of historical cases in favor of social, moral, and economic progress, in terms of a 'great enrichment' of humanity (McCloskey, 2016; Mokyr, 2016) and a constant and strong orientation towards equality (Piketty, 2022), obeys the situated materialization of these principles of fairness in the last centuries, despite there is an increasing debate around the historical and material causes for the emergence of such processes.

To sum up, considerations of merit and need in distributive dilemmas belong to the moral domain of social knowledge and pursue the preservation of others' well-being, rights, and interests in collaborative or conflictive situations. This is extremely relevant to have in mind, for some theoretical approaches on the matter tend to incorporate normative judgments and/or ideological considerations when evaluating the appropriateness or plausibility of moral intuitions and judgments expressed by people.

For instance, the emergence of fairness concerns based both on merit and need has been used to promote pictures of human nature that validate researchers' normative positions about the right way to behave socially or politically. This has led to a very partialized perspective on the empirical facts, expressed in the way that researchers, following their prior judgments, explain opposing data as anomalies or inconsistencies. In what comes, I finish this work suggesting the adoption of a

4 According to Hofstede and colleagues (2001), individualism is high in societies in which "ties between individuals are loose: everyone is expected to look after him – or herself and his or her immediate family" (p. 92). Conversely, there exists collectivism when people "...from birth onward are integrated into strong, cohesive in-groups, which throughout people's lifetime continue to protect them in exchange for unquestioning loyalty".

more impartial perspective on the matter, considering a more realistic perspective on human fairness, based on the legitimacy of both merit and fairness as valid moral intuitions that emerge from cooperative interactions in human individuals.

has been a wrong interpretation of the empirical behavioral data of distributive justice studies since human beings are concerned with equality just in cases when there are no opportunities to apply fairness as the rule of equity. Moreover, they state that “when fairness and equality clash, people prefer fair inequality over unfair equality”.

Do people prefer social inequality? Yes, and yet we are all moral beings!

In a paper titled “Why people prefer unequal societies?”, Starmans, Sheskin, and Bloom (2017) argued that human beings are not concerned at all by socioeconomic equality and that the only concerns that we consider when thinking about socioeconomic issues are equity and proportionality (‘economic unfairness’). These authors claim there

When defending their argument, the authors make use of a study performed by Norton and Ariely (2011). In the study, Norton and Ariely found that adolescents and adults underestimate the actual level of economic inequality in contemporary societies such as the US, but they do consider ideal societies in which there still are inequalities in the distribution of wealth. In a similar study, Arsenio & Willems (2017) further showed that US adults consider that the top 20% of society should own 30% of the nation’s wealth, while just 10% is considered fair to be owned by the bottom 20% (see Figure 2). These results have been confirmed in further studies in different social contexts around the world (Niehues, 2014; Barreiro, Arsenio, & Wainryb, 2019).

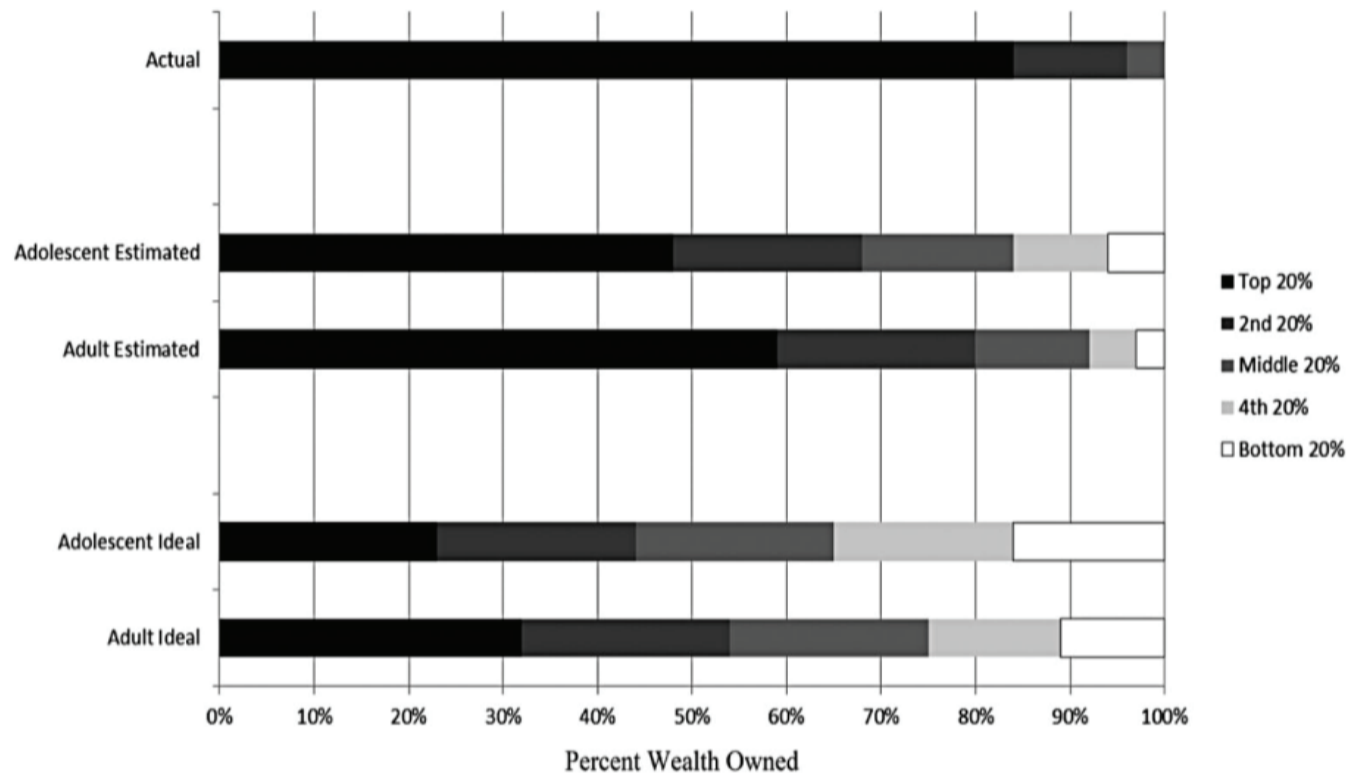


Figure 2. US Adults and Adolescents estimated and ideal distributions of wealth.

Taken from: Arsenio, W. F., & Willems, C. (2017). Adolescents’ conceptions of national wealth distribution: Connections with perceived societal fairness and academic plans. *Developmental Psychology*, 53(3), 463.

According to some analysis of the International Social Survey Program (ISSP), a global initiative that includes more than 56,000 participants from 40 different countries, people all over the world tend to underestimate the level of wealth inequality, and they consider more

egalitarian distributions of wealth in their countries as ideal. However, these ideal distributions still reflect a considerable level of inequality since the ideal societies conceived are constituted by divergent socio-economic levels (Evans & Kelley, 2017, see Figure 3).

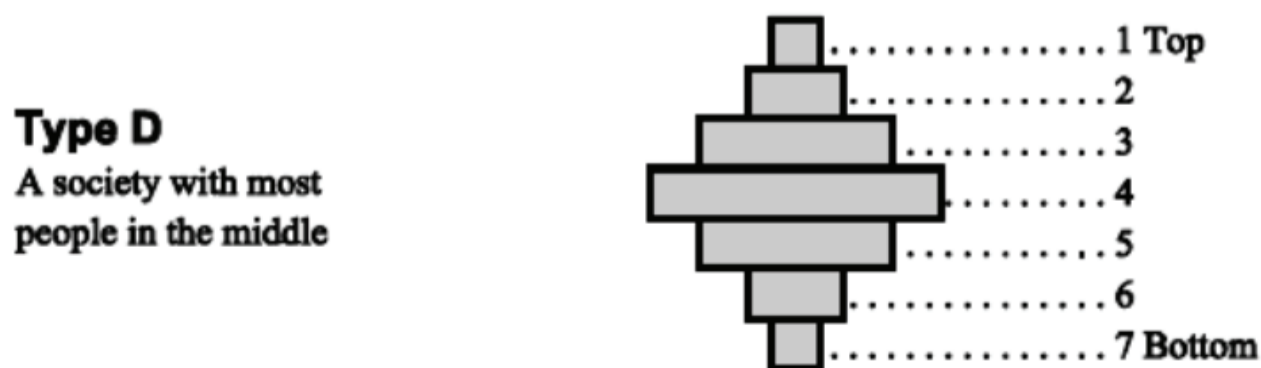


Figure 3. The type of society that most people around the world consider as ideal according to the International Social Survey Program (ISSP). In this society some people are at the top, some people are at the bottom, and most people are in the middle.

Human beings are especially worried about the fulfillment of needs in other individuals and are worried about disadvantages when distributing resources from a very early age. However, our cooperative cognition in distributive dilemmas gets complex with age and also includes the consideration of social responsibility and effort in large-scale cooperative interactions, which explains why people still consider fair some unequal distributions that aim for efficiency and productivity while preserving certain levels of social cohesion and solidarity⁵ (García-Sánchez et al., 2021; Cappelen, Falch, & Tungodden, 2020; Freyer & Günther, 2022; Ahrens, 2022; André et al., 2022).

These reflections are extremely relevant when analyzing current research on the topic. For instance, multiple studies and theoretical proposals on the matter still consider an anomaly the fact that people tend to legitimate certain economic inequalities when considering distributive principles at the collective level. Guided by the premise that socioeconomic inequalities are morally impermissible per se, these studies approach cooperative cognition in distributive dilemmas grounded on the notion that people intuitions on fair inequality are morally wrong and must be studied to be reverted. This is particularly true for the case of social and political psychologists who study “system justification” and “system-justifying beliefs”, which are explored as people’s motivation to defend “the status quo” (García-Sánchez et al., 2018; Jost, 2020; Goudarzi et al., 2020; Liaquat, Jost, & Balcetis, 2023; Iturra et al., 2023; Barreiro & Wainryb, 2023).

In this regard, I must insist that this piece of work does not pretend whatsoever to justify large inequalities that still have a profound negative effect on human well-being globally and have produced problematic levels of economic disparities, poverty, and the systematic exclusion of minorities around the world. Conversely, I aim to put an eye on the fact that the acceptance of inequalities in the distribution of resources resulting from human cooperation is an inherent element of our cooperative cognition and is the outcome of normative intuitions about concrete boundaries of fair reciprocity when dealing with scarce resources.

The acceptance of merit, deservingness, and fair inequalities as legitimate intuitions about the boundaries for fair reciprocity requires, as was mentioned before, to be aware that human societies do pursue both social cohesion and productivity; and human beings take into consideration disadvantages and needs, as well as efforts and personal responsibility when deciding how to distribute resources that result from cooperation.

This reality is not only proven by developmental evidence (Paulus & Essler, 2020) but is well aligned with increasing evolutionary-informed archaeological and anthropological evidence on the pervasiveness of conceptions and institutions related to fair inequalities and hierarchical organization in different human communities and cultural groups across times (Cheng et al., 2013; Ronay et al., 2018; Garfield, Syme, & Hagen, 2020; Cheng, 2020; Ozono, 2021; Singh & Glowacki, 2022).

Accordingly, and aiming to contribute to the current discussion on the matter, I finally suggest that recognizing the legitimacy of merit concerns as crucial elements of cooperative cognition in distributive dilemmas is mandatory if we want to further comprehend the legitimation of certain social-economic inequalities and the existence of certain public narratives about distribution, including “meritocracy”. I insist on this matter given the prominent orientation to simplify the empirical

evidence concerning the acceptance of fair inequalities in distributive dilemmas and public surveys.

Consequently, if we accept that human individuals tend to incorporate merit and deservingness as boundaries of fair reciprocity and that the acceptance of fair inequalities is a logical consequence of our cooperative cognition, it would be easier to understand why adolescents and adults tend to explain and/or justify economic disparities as they do (Flanagan, 2014; Gatica et al., 2017; García-Sánchez et al., 2018; Kornbluh, Pykett, & Flanagan, 2019; Mistry et al., 2021; Sainz et al., 2023).

In brief, it is not necessarily true that adolescents and adults “ignore historical, economic, and political factors” when explaining the divergence of people’s socioeconomic status, that their explanations about poverty are “individualistic and reductionistic”, or that especially poor individuals are excessively optimistic about their opportunities in the world and do have an erroneous conviction about the world as a just place where everyone gets what they deserve (Barreira & Wainryb, 2023, 3-4).

Rather, and considering that all human individuals inhabit a world where there is easily observable the plurality of interests, motivations, ambitions, and capacities among people that depend on cooperation to survive and thrive, the justification of current economic disparities just reflects the simple prescriptive intuition that material inequalities coming from differences in performance, contribution, or merit during cooperative interactions are fair and should be considered as justifiable outcomes according to certain boundaries of fair reciprocity.

Naturally, this cannot be further explored if researchers do not take into consideration evolutionary-informed anthropological evidence on the complexity of human social organization and instead continue to base their hypotheses on the discredited idea that human beings are egalitarian “by nature” and material inequalities are just the consequence of dark episodes of our history, from the neolithic revolution to the imposition of neoliberal ideologies.

Finally, moral cognition and fairness concerns in distributive dilemmas cannot be properly addressed if researchers insist on holding the problematic conviction that human economic and productive relations are all together reduced to a struggle between two and only two antagonistic segments (the oppressors, and the oppressed), or that the distribution of scarce resources resulting from cooperation is not cooperative at all if it ends up in unequal results.

References

- Adriaans, J., Eisnecker, P., & Liebig, S. (2019). A comparison of earnings justice throughout Europe: Widespread approval in Germany for income distribution according to need and equity. <https://ideas.repec.org/a/diw/diwdwr/dwr9-44-1.html>
- Ahrens, L. (2022). Unfair inequality and the demand for redistribution: Why not all inequality is equal. <https://academic.oup.com/ser/article-abstract/20/2/463/6032881>
- Almås, I., Cappelen, A. W., Salvanes, K. G., Sørensen, E. Ø., & Tungodden, B. (2017). Fairness and family background. <https://journals.sagepub.com/doi/abs/10.1177/1470594X15618966>
- Almås, I., Cappelen, A. W., Sørensen, E. Ø., & Tungodden, B. (2010). Fairness and the development of inequality acceptance. <https://psycnet.apa.org/record/2010-12154-002>

⁵ It seems that for most individuals the best strategy is to follow a ‘maximin’ principle in distributive dilemmas that shifts the focus to the fate of the least well-off while preserving efficiency and productivity (Mitchell et al., 1993; Cetre et al., 2019; Ueshima, Mercier, & Kameda, 2021; Ueshima & Kameda, 2021).

- Anderson, N. H., & Butzin, C. A. (1978). Integration theory applied to children's judgments of equity. <https://psycnet.apa.org/record/1979-28339-001>
- André, J.-B., Fitouchi, L., Debove, S., & Baumard, N. (2022). An evolutionary contractualist theory of morality. <https://osf.io/preprints/psyarxiv/2hxgu>
- Angarita, R. G., & Viciana, H. (2022). Merit Is Not Meritorious Everywhere: Fairness in First and Third Party Tasks among Kogi Children. https://brill.com/view/journals/jocc/22/3-4/article-p246_4.xml
- Arsenio, W. F., & Willems, C. (2017). Adolescents' conceptions of national wealth distribution: Connections with perceived societal fairness and academic plans. *Developmental Psychology*, 53(3), 463. <https://psycnet.apa.org/record/2017-07782-003>
- Barreiro, A., Arsenio, W. F., & Wainryb, C. (2019). Adolescents' conceptions of wealth and societal fairness amid extreme inequality: An Argentine sample. *Developmental psychology*, 55(3), 498.
- Barreiro, A., & Wainryb, C. (2023). Adolescents thinking on economic inequality: Expanding the discussion beyond the Global North. *New Ideas in Psychology*, 71, 101045.
- Baumard, N., Mascaro, O., & Chevallier, C. (2012). Preschoolers are able to take merit into account when distributing goods. *Developmental psychology*, 48(2), 492.
- Blake, P. R., McAuliffe, K., Corbit, J., Callaghan, T. C., Barry, O., Bowie, A., Kleutsch, L., Kramer, K. L., Ross, E., & Vongsachang, H. (2015). The ontogeny of fairness in seven societies. *Nature*, 528(7581), 258-261.
- Buyukozer Dawkins, M., Sloane, S., & Baillargeon, R. (2019). Do infants in the first year of life expect equal resource allocations? *Frontiers in Psychology*, 116.
- Cappelen, A. W., Falch, R., & Tungodden, B. (2020). Fair and unfair income inequality. *Handbook of Labor, Human Resources and Population Economics*, 1-25.
- Cappelen, A. W., Moene, K. O., Sørensen, E. Ø., & Tungodden, B. (2013). Needs versus entitlements—An international fairness experiment. *Journal of the European Economic Association*, 11(3), 574-598.
- Carpendale, J. I., Hammond, S. I., & Atwood, S. (2013). A relational developmental systems approach to moral development. *Advances in child development and behavior*, 45, 125-153.
- Carpendale, J. I., & Wallbridge, B. (2023). From action to ethics: A process-relational approach to prosocial development. *Frontiers in Psychology*, 14, 1059646.
- Cetre, S., Lobeck, M., Senik, C., & Verdier, T. (2019). Preferences over income distribution: Evidence from a choice experiment. *Journal of Economic Psychology*, 74, 102202.
- Cheng, J. T. (2020). Dominance, prestige, and the role of leveling in human social hierarchy and equality. *Current opinion in psychology*, 33, 238-244.
- Cheng, J. T., Tracy, J. L., Foulsham, T., Kingstone, A., & Henrich, J. (2013). Two ways to the top: Evidence that dominance and prestige are distinct yet viable avenues to social rank and influence. *Journal of personality and social psychology*, 104(1), 103.
- Damon, W. (s. f.). *The social world of the child*. (No Title).
- Damon, W. (1980). Patterns of change in children's social reasoning: A two-year longitudinal study. *Child development*, 1010-1017.
- Deutsch, M. (1975). Equity, equality, and need: What determines which value will be used as the basis of distributive justice? *Journal of Social Issues*, 31(3), 137-149.
- Deutsch, M. (1985). *Distributive justice: A social-psychological perspective*.
- Elenbaas, L. (2019). Interwealth contact and young children's concern for equity. *Child development*, 90(1), 108-116.
- Elenbaas, L., Rizzo, M. T., Cooley, S., & Killen, M. (2016). Rectifying social inequalities in a resource allocation task. *Cognition*, 155, 176-187.
- Engelmann, J. M., & Tomasello, M. (2019). Children's sense of fairness as equal respect. *Trends in Cognitive Sciences*, 23(6), 454-463.
- Enright, R. D., Franklin, C. C., & Manheim, L. A. (1980). Children's distributive justice reasoning: A standardized and objective scale. *Developmental Psychology*, 16(3), 193.
- Enright, R. D., Lapsley, D. K., Franklin, C. C., & Steuck, K. (1984). Longitudinal and cross-cultural validation of the belief-discrepancy reasoning construct. *Developmental psychology*, 20(1), 143.
- Essler, S., Lepach, A. C., Petermann, F., & Paulus, M. (2020). Equality, equity, or inequality duplication? How preschoolers distribute necessary and luxury resources between rich and poor others. *Social Development*, 29(1), 110-125.
- Evans, M. D. R., & Kelley, J. (2017). Communism, capitalism, and images of class: Effects of reference groups, reality, and regime in 43 nations and 110,000 individuals, 1987-2009. *Cross-Cultural Research*, 51(4), 315-359.
- Fehr, E., Bernhard, H., & Rockenbach, B. (2008). Egalitarianism in young children. *Nature*, 454(7208), 1079-1083.
- Flanagan, C. A., Kim, T., Pykett, A., Finlay, A., Gallay, E. E., & Pancer, M. (2014). Adolescents' theories about economic inequality: Why are some people poor while others are rich? *Developmental psychology*, 50(11), 2512.
- Freyer, T., & Günther, L. R. (2022). Inherited inequality and the dilemma of meritocracy. *ECONtribute Discussion Paper*.
- García-Sánchez, E., Correia, I., Pereira, C. R., Willis, G. B., Rodríguez-Bailón, R., & Vala, J. (2022). How fair is economic inequality? Belief in a just world and the legitimation of economic disparities in 27 European countries. *Personality and Social Psychology Bulletin*, 48(3), 382-395.
- García-Sánchez, E., Willis, G. B., Rodríguez-Bailón, R., García-Castro, J. D., Palacio-Sañudo, J., Polo, J., & Rentería-Pérez, E. (2018). Perceptions of economic inequality in Colombian daily life: More than unequal distribution of economic resources. *Frontiers in psychology*, 9, 1660.
- Garfield, Z. H., Syme, K. L., & Hagen, E. H. (2020). Universal and variable leadership dimensions across human societies. *Evolution and Human Behavior*, 41(5), 397-414.
- Gatica, L., Martini, J. P., Dreizik, M., & Imhoff, D. (2017). Psychosocial and psycho-political predictors of social inequality justification. *Revista de Psicología*, 35(1), 279-310.
- Geraci, A., & Nuovo, S. D. (2018). Toddlers' Spontaneous Reactions to Inequality in Distributive Actions. *J Child Adolesc Behav*, 6(379), 2.
- Geraci, A., & Surian, L. (2011). The developmental roots of fairness: Infants' reactions to equal and unequal distributions of resources. *Developmental science*, 14(5), 1012-1020.
- Goudarzi, S., Badaan, V., & Knowles, E. D. (2021). Neoliberalism and the ideological construction of equity beliefs. *Perspectives on Psychological Science*, 17456916211053312.
- Goudarzi, S., Pliskin, R., Jost, J. T., & Knowles, E. D. (2020). Economic system justification predicts muted emotional responses to inequality. *Nature communications*, 11(1), 383.
- Greenberg, J., & Leventhal, G. S. (1976). Equity and the use of overreward to motivate performance. *Journal of Personality and Social Psychology*, 34(2), 179.
- Haidt, J. (2012). *The righteous mind: Why good people are divided by politics and religion*. Vintage.
- Hamann, K., Bender, J., & Tomasello, M. (2014). Meritocratic sharing is based on collaboration in 3-year-olds. *Developmental Psychology*, 50(1), 121.
- Hamlin, J. K., & Wynn, K. (2011). Young infants prefer prosocial to antisocial others. *Cognitive development*, 26(1), 30-39.
- Hamlin, J. K., Wynn, K., & Bloom, P. (2007). Social evaluation by preverbal infants. *Nature*, 450(7169), 557-559.
- Henrich, J., & Muthukrishna, M. (2021). The origins and psychology of human cooperation. *Annual Review of Psychology*, 72, 207-240.
- Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions and organizations across nations*. Sage publications.

- House, B. R., Kanngiesser, P., Barrett, H. C., Broesch, T., Cebiglu, S., Crittenden, A. N., Erut, A., Lew-Levy, S., Sebastian-Enesco, C., & Smith, A. M. (2020). Universal norm psychology leads to societal diversity in prosocial behaviour and development. *Nature Human Behaviour*, 4(1), 36-44.
- Huppert, E., Cowell, J. M., Cheng, Y., Contreras-Ibáñez, C., Gomez-Sicard, N., Gonzalez-Gadea, M. L., Huepe, D., Ibanez, A., Lee, K., & Mahasneh, R. (2019). The development of children's preferences for equality and equity across 13 individualistic and collectivist cultures. *Developmental science*, 22(2), e12729.
- Iturra, J., Castillo, J. C., Maldonado, L., & Orellana, C. I. R. (2023). La percepción de desigualdad económica y su influencia sobre la justificación de las diferencias de ingreso legítimas. *Estudios Sociológicos*, 41(122), 309-352.
- Jost, J. T. (2020). *A theory of system justification*. Harvard University Press.
- Kanngiesser, P., & Warneken, F. (2012). Young children consider merit when sharing resources with others.
- Karuz, J., & Leventhal, G. S. (1976). *Justice Judgements: Role Demands and Perception of Fairness*.
- Kazemi, A., Eek, D., & Gärling, T. (2017). Equity, equal shares or equal final outcomes? Group goal guides allocations of public goods. *Frontiers in Psychology*, 8, 36.
- Kenward, B., & Dahl, M. (2011). Preschoolers distribute scarce resources according to the moral valence of recipients' previous actions. *Developmental psychology*, 47(4), 1054.
- Kienbaum, J., & Wilkening, F. (2009). Children's and adolescents' intuitive judgements about distributive justice: Integrating need, effort, and luck. *European Journal of Developmental Psychology*, 6(4), 481-498.
- Killen, M., Smetana, J. G., & Smetana, J. (2006). Social-cognitive domain theory: Consistencies and variations in children's moral and social judgments. En *Handbook of moral development* (pp. 137-172). Psychology Press.
- Kohlberg, L. (1981). *The philosophy of moral development: Moral stages and the idea of justice*.
- Kohlberg, L., & Gilligan, C. (1971). The adolescent as a philosopher: The discovery of the self in a postconventional world. *Daedalus*, 1051-1086.
- Kornbluh M. E., Pykett A. A., Flanagan C. A. (2019). Exploring the associations between youths' explanations of poverty at the societal level and judgments of distributive justice. *Developmental Psychology*, 55, 488-497. <https://doi.org/10.1037/dev0000523>
- Lamm, H., & Schwinger, T. (1980). Norms concerning distributive justice: Are needs taken into consideration in allocation decisions? *Social Psychology Quarterly*, 425-429.
- Lamm, H., & Schwinger, T. (1983). Need consideration in allocation decisions: Is it just? *The Journal of Social Psychology*, 119(2), 205-209.
- Lerner, M. J. (1977). The justice motive: Some hypotheses as to its origins and forms 1. *Journal of personality*, 45(1), 1-52.
- Leventhal, G. S. (1976). The distribution of rewards and resources in groups and organizations. En *Advances in experimental social psychology* (Vol. 9, pp. 91-131). Elsevier.
- Leventhal, G. S., & Weiss, T. (1975). Perceived need and the response to inequitable distributions of reward. Unpublished manuscript, Wayne State University.
- Liaquat, U., Jost, J. T., & Balcetis, E. (2023). System justification motivation as a source of backlash against equality-promoting policies—And what to do about it. *Social Issues and Policy Review*, 17(1), 131-154.
- Malti, T., Gummerum, M., Ongley, S., Chaparro, M., Nola, M., & Bae, N. Y. (2016). "Who is worthy of my generosity?" Recipient characteristics and the development of children's sharing. *International Journal of Behavioral Development*, 40(1), 31-40.
- McCloskey, D. N. (2016). The great enrichment: A humanistic and social scientific account. *Scandinavian Economic History Review*, 64(1), 6-18.
- Meindl, P., Iyer, R., & Graham, J. (2019). Distributive justice beliefs are guided by whether people think the ultimate goal of society is well-being or power. *Basic and applied social psychology*, 41(6), 359-385.
- Mikula, G., & Schwinger, T. (1978). Intermember relations and reward allocation: Theoretical considerations of affects. *Dynamics of group decisions*, 229-250.
- Mistry, R. S., Elenbaas, L., Griffin, K. M., Nenadal, L., & Yassine, A. (2021). Advancing developmental intergroup perspectives on social class. *Child Development Perspectives*, 15(4), 213-219.
- Mitchell, G., Tetlock, P. E., Mellers, B. A., & Ordóñez, L. D. (1993). Judgments of social justice: Compromises between equality and efficiency. *Journal of Personality and Social Psychology*, 65(4), 629.
- Mokyr, J. (2016). Institutions and the Origins of the Great Enrichment. *Atlantic Economic Journal*, 44, 243-259.
- Nettle, D., & Saxe, R. (2020). Preferences for redistribution are sensitive to perceived luck, social homogeneity, war and scarcity. *Cognition*, 198, 104234.
- Niehues, J. (2014). Subjective perceptions of inequality and redistributive preferences: An international comparison. *Cologne Institute for Economic Research. IW-TRENDS Discussion Paper*, 2(1), 23.
- Noh, J. Y. (2020). Children's developing understanding of merit in a distributive justice context. *Journal of Child and family studies*, 29, 1484-1492.
- Norton, M. I., & Ariely, D. (2011). Building a better America—One wealth quintile at a time. *Perspectives on psychological science*, 6(1), 9-12.
- Ozono, H. (2021). Function of hierarchy on Cooperation in large-scale human societies. *Japanese Journal of Animal Psychology*, 71(1), 63-75.
- Paulus, M. (2014). The early origins of human charity: Developmental changes in preschoolers' sharing with poor and wealthy individuals. *Frontiers in Psychology*, 5, 344.
- Paulus, M. (2015). Children's inequity aversion depends on culture: A cross-cultural comparison. *Journal of experimental child psychology*, 132, 240-246.
- Paulus, M., & Essler, S. (2020). Why do preschoolers perpetuate inequalities? Theoretical perspectives on inequity preferences in the face of emerging concerns for equality. *Developmental Review*, 58, 100933.
- Paulus, M., & Moore, C. (2017). Preschoolers' generosity increases with understanding of the affective benefits of sharing. *Developmental science*, 20(3), e12417.
- Piaget, J. (2013). *The moral judgment of the child*. Routledge.
- Piketty, T. (2022). *A brief history of equality*. Harvard University Press.
- Rizzo, M. T., Elenbaas, L., Cooley, S., & Killen, M. (2016). Children's recognition of fairness and others' welfare in a resource allocation task: Age related changes. *Developmental psychology*, 52(8), 1307.
- Rizzo, M. T., & Killen, M. (2016). Children's understanding of equity in the context of inequality. *British Journal of Developmental Psychology*, 34(4), 569-581.
- Ronay, R., Maddux, W. W., & Von Hippel, W. (2020). Inequality rules: Resource distribution and the evolution of dominance-and prestige-based leadership. *The Leadership Quarterly*, 31(2), 101246.
- Sainz, M., García-Castro, J. D., Jiménez-Moya, G., & Lobato, R. M. (2023). How do people understand the causes of poverty and wealth? A revised structural dimensionality of the attributions about poverty and wealth scales. *Journal of Poverty and Social Justice*, 31(1), 81-100.
- Sarmiento-Lopez, J. C., & Yáñez-Canal, J. (2019). Discusiones políticas y morales referentes a la justicia y su aporte a la psicología del desarrollo moral. *Revista colombiana de psicología*, 28(1), 165-179.
- Schäfer, M., Haun, D. B., & Tomasello, M. (2015). Fair is not fair everywhere. *Psychological science*, 26(8), 1252-1260.
- Schmidt, M. F., & Sommerville, J. A. (2011). Fairness expectations and altruistic sharing in 15-month-old human infants. *PloS one*, 6(10), e23223.

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- Schmidt, M. F., Svetlova, M., Johe, J., & Tomasello, M. (2016). Children's developing understanding of legitimate reasons for allocating resources unequally. *Cognitive Development*, 37, 42-52.
- Schwinger, T. (1986). The need principle of distributive justice. En *Justice in social relations* (pp. 211-225). Springer.
- Schwinger, T., & Lamm, H. (1981). Justice norms in allocation decisions: need consideration as a function of resource adequacy for complete need satisfaction, recipients' contributions, and recipients' interpersonal attraction. *Social Behavior and Personality: an international journal*, 9(2), 235-241.
- Sequeira, M.-E. (2023). Fairness, partner choice, and punishment: An ethnographic study of cooperative behavior among children in Helsinki, Finland. *Ethos*.
- Singelis, T. M., Triandis, H. C., Bhawuk, D. P., & Gelfand, M. J. (1995). Horizontal and vertical dimensions of individualism and collectivism: A theoretical and measurement refinement. *Cross-cultural research*, 29(3), 240-275.
- Singh, M., & Glowacki, L. (2022). Human social organization during the Late Pleistocene: Beyond the nomadic-egalitarian model. *Evolution and Human Behavior*.
- Sloane, S., Baillargeon, R., & Premack, D. (2012). Do infants have a sense of fairness? *Psychological science*, 23(2), 196-204.
- Smetana, J. G., Jambon, M., & Ball, C. (2013). The social domain approach to children's moral and social judgments. En *Handbook of moral development* (pp. 23-45). Psychology Press.
- Smetana, J. G., Jambon, M., & Ball, C. L. (2018). Normative changes and individual differences in early moral judgments: A constructivist developmental perspective. *Human Development*, 61(4-5), 264-280.
- Starmans, C., Sheskin, M., & Bloom, P. (2017). Why people prefer unequal societies. *Nature Human Behaviour*, 1(4), 1-7.
- Surian, L., Ueno, M., Itakura, S., & Meristo, M. (2018). Do infants attribute moral traits? Fourteen-month-olds' expectations of fairness are affected by agents' antisocial actions. *Frontiers in psychology*, 1649.
- Turiel, E. (1983). *The development of social knowledge: Morality and convention*. Cambridge University Press.
- Ueshima, A., & Kameda, T. (2021). Reducing variance or helping the poorest? A mouse tracking approach to investigate cognitive bases of inequality aversion in resource allocation. *Royal Society open science*, 8(3), 201159.
- Ueshima, A., Mercier, H., & Kameda, T. (2021). Social deliberation systematically shifts resource allocation decisions by focusing on the fate of the least well-off. *Journal of Experimental Social Psychology*, 92, 104067.
- Warneken, F., Lohse, K., Melis, A. P., & Tomasello, M. (2011). Young children share the spoils after collaboration. *Psychological science*, 22(2), 267-273.