

Development of the sense of justice in childhood: a brief review of some evolutionary and sociocognitive theories

Abstract

Introduction: Justice is key for social stability, progress and peace, but the scientific understanding of its development is still in its early stages. This paper reviews some sociocognitive and evolutionary key theories on how the sense of justice develops during childhood.

Methods: This is a scientific essay, based on a critical review of the current specialized literature on the topic. Two AI programs were used only to help identify key theories (Gemini and Elicit), not to review the content and synthesize each of them, which is an original writing work based on the interpretation of the present author.

Results: Eight main theories and its basic ideas are reviewed. These theories identify core themes and mechanisms in the development of the sense of justice, and are: interdependence, cooperation, respect, mind reading, social norms, difference principle, aversion to inequality, and punishment.

Discussion: It is posited that these eight core themes represent key sociocognitive mechanisms without which the human sense of justice would not be possible as we know it. Theoretical and practical implications for understanding the complexity of early human and sociocultural development of the sense of justice are discussed.

Keywords: justice, moral development, childhood, culture, cooperation, evolutionary theory

Introduction

Justice is a human value universally recognized; that is, it is taken as a good in human relations that must be observed and followed by individuals and groups. In other words, the lack or imbalance of justice is a central component of almost any social conflict.¹ Although it is an essential factor in social equilibrium present in all human societies, the specific meaning and criteria to define justice in different situations change from society to society and from culture to culture (Schäfer, 2015).

For example, whereas in urban modern large-scale societies people tend to consider merit as a key criterion to distribute spoils, this criterion is not as important in rural traditional small-scale societies. How come? According to the research by Schäfer and colleagues (2015) children in modern societies tend to use merit as a criterion to distribute gains, while this is not considered in traditional societies. Why? One possible explanation could be related to the type of economic activity and the size of societies, because when people are dedicated to hunting, gathering, pastoralism and agriculture, without any safety nets, and when people know each other personally in their communities, then, instead of merit, the criteria of “today for you, tomorrow for me” can take more relevance. And the fact that kids at early ages behave differentially between large-scale and small-scale societies regarding distributive justice, shows that the cultural and socioeconomic environment of socialization has an important weight in the development of the sense of justice.²

In evolutionary terms, justice can be derived from the human need of cooperation, which in turn is driven by the interdependent nature of human beings.³ This cooperative approach of justice is

based on evolutionary and cognitive theories, which has been taking increasing attention probably because of their contributions, insights and explanatory power into human nature. The present article makes a brief review of these type of theories, providing a description of certain of its constituents and its contribution to the understanding of the development of the sense of justice during childhood.

Methods

This is a scientific essay based on a critical review of the resent scientific literature on the topic. The main question to be answered is: what are key theories from a sociocognitive and evolutionary perspective to explain the development of the sense of justice in childhood? Firstly, a consultation using this question based on the AI Gemini by Google was made, obtaining an initial identification of five sociocognitive theories and four evolutionary theories (<https://gemini.google.com/app?hl=es>). As a second step, the academic AI program Elicit was used to further consultation (see: <https://elicit.com/>), obtaining an initial identification of five general theories. Then, considering this information, the author of the present review took the decision of choosing the following eight key theories of both themes and mechanisms considered as key components in the development of the sense of justice: interdependence, cooperation, respect, mind reading, social norms, difference principle, aversion to inequality, and punishment. This decision was made based on the interpretation of the author of which key themes and mechanisms seem to better explain the unfolding of the human sense of justice. No AI was used in the writing of the following review, which is constructed according to the interpretation and own words of the present author. The literature from the last ten years (2015-2025) at the moment of this review

making was privileged, but other older sources were also considered when they were supported by more recent research.

Evolutionary theories on the development of the human sense of justice

Some theories serve to explain diverse aspects of the development of the sense of justice in humans. Certain key ingredients in this development can be the following eight theories, each one pointing to a particular sociocognitive mechanism to make human justice possible.

Interdependence theory (Tomasello et al., 2012)⁴

According to this view, the evolutionary human lineage has been particularly intensive in the need for cooperation, because when human ancestors came down and out from forests millions of years ago, they required very high amounts of collaborative work in unknown places and ecologies, so that natural selection should privilege the reproduction of genes that meant dispositions to work intensively, flexibly and constantly with conspecifics, which may be the explanation of why humans are capable of living in almost every ecology on earth. This theory can serve to explain the intrinsic dispositions in early childhood to connect with other intentions and to understand very early what is required to sustain cooperation with others, which needs reciprocity. Other species cooperate, but only humans do it in highly flexible and massive ways at the same time.⁵ In this view intense interdependence and flexible cooperation may be the foundations for the sense of justice, which can be seen as a mechanism to sustain long term and complex forms of cooperation, something absent in other primates. For example, other primates cooperate, but they do not share the spoils in "fair" manner, but following the dominance hierarchy and without active sharing to the less strong and smallest ones. Also, in humans, collaboration encourages equal sharing, but this is not the case in chimpanzees, who make spoils (food) available to another individual just as often whether they have collaborated with them or not.⁶ This way of not sharing equally discourages cooperation among apes.⁷

Morality as cooperation theory (Curry et al., 2019)⁸

In this approach morality is seen as a set of solutions to conflicts in social cooperation. The capacity of judging acts as "good" or "bad" may be rooted in cooperation needs at an interpersonal and group levels. Behaviors that serve to preserve cooperation in the group are taken to be good and behaviors that impede cooperation are taken as bad. This theory is rooted in evolutionary perspectives which postulate that humans are essentially a cooperative species because this is crucial for its survival. In this sense, morality is the form in which humans judge increasingly complex behaviors and establish values to praise certain attitudes that predict cooperation and thus are taken to be criteria needed for the group survival. Groups differ in their moral values because they confront different survival needs, which demand different behaviors. For example, group loyalty and fight bravery will be more appreciated in contexts of scarce resources and high intergroup conflict.⁹ This theory can help to understand the emergence of morality in social and cooperative situations rather than other types of situations. In the view of this theory, humans evolved to cooperate, and moral judgements were naturally selected and emerge specially in cooperative contexts. This theory propose that morality is a set of solutions to cooperative situations, emphasizing seven types of cooperation: 1) helping kin, 2) helping group, 3) reciprocating, 4) being brave, 5) respecting superiors, 6) dividing resources, 7) respecting property. According to the theory proponents, previous research suggests that these seven types of morality are evolutionarily

ancient and cross-culturally universal. Regarding the development of the sense of fairness, this theory implies that diverse societies will socialize their youngsters into these seven forms of cooperation to become considered fully fair members of their group, but also that the universal nature of these ways of cooperating suggest that humans are predisposed to follow them.

Fairness as equal respect theory (Engelmann et al., 2019)¹⁰

When kids are just starting to talk is not unusual to hear them saying: "that is not fair" in certain activities, particularly when they refer to interpersonal or social situations that they judge as unacceptable. But how are they capable of this judgment? One possibility is that kids around three years old might have a basic sense of fairness derived from an intrinsic need to be treated as equal partners in simple interactions. For example, if you are distributing pieces of cake to a group of preschoolers, you can see them spontaneously comparing the size of the pieces, especially if those pieces seem to be different. Why are they interested in receiving an equal treatment without any kind of instruction our treatment to do that? An explanation might have to do with an expectation of being treated as equal partners in interchanges. But this is not the whole story, because children can accept unequal treatment if they judge the distribution proceedings as fair. For example, if kids are playing a game of luck in which they spin a "wheel of fortune," then they can accept a lower price than other partners if they themselves also receive the same opportunity as other partners. Other situation would be if only some kids receive the opportunity to spin the wheel and obtain a price, in which the words "it is not fair" might come out easily. This means that kids are not necessarily expecting the same result in any circumstance, but that they are capable to understand a different and unequal result if they judge the distributive situation as fair. This also means that kids have a sense of self-worth that implies an intrinsic motivation to feel bad and/or to claim for fairness when they feel it is not respected. The development of this capacity to distinguish between equality of opportunity from equality of result implies certain increase of the sophistication of moral judgment during childhood. And the fact that kids expect a fair treatment from a very early age (around the second year of life) (Sloane et al., 2012) may be based on an intrinsic sense of self-worth.

Morally relevant theory of mind (Killen et al., 2011)¹¹

From around 3 to 5 years old, children are able to understand false beliefs in other persons and more precisely in other minds, which implies the understanding not only of the intentions of others, but also the beliefs and knowledge of others. This is key for the forming sense of justice, because to properly judge other people moral behaviors it is key to understand their intentions and their beliefs. Nobody would judge an apple hitting on the head of a person as a bad action from the apple, since no one attributes intentions nor beliefs to apples or trees. So, understanding intentions and not only actions and results is key to form moral judgment and reasoning, without which no sense of justice might take place. But if a person is on the tree and he is throwing down apples that are impacting on people's heads in the ground, then we can start moral judgments. In a situation like this, the knowledge of the other person knowledge and intention is required to do moral reasoning. This capacity to use theory of mind in this type of circumstances is called "morally relevant" because the knowledge of the other person mind is needed to understand her intentions. Then, if the person is throwing apples down without knowing that there are persons around that can be hit, moral responsibility can be diminished or not attributed at all. Properly distinguishing between accidental and

intentional harm requires false beliefs understanding, that continues to develop through middle childhood.¹¹

Social norms theory (House et al., 2020)²

Around three years of age kids are capable of understanding, creating, following and watching over the concept of social norms; that is, rules that apply to participants in a given situation and that are expected to be followed from all of them. At around this age, kids are able to spontaneously create rules in their games. For example, kids can use imperative language and exclaim ideas like: "you cannot do that," and collective language like: "we play in this way" referring to the two essential points of social norms: their regulatory nature and their collective nature. According to Tomasello¹² this social normative psychology is rooted in a deeper sense of shared intentionality, by which early infants (from around 9 months old and on) are capable of a basic understanding of intentions (like goals or desires) in their own and in others. When kids play and develop joint goals, they require a sense of "we" that might be key in creating the shared ground for morality and justice. Without this capacity for shared intentionality kids would not be able to create the common ground of "we" and also would not be able to understand the concept of social norms. This theory is crucial to understand the development of the sense of justice in childhood because it is not possible to understand the necessarily collective nature of justice, justice claims and justice systems of any kind in the human sense without social norms. Also, this theory serves to explain the relationship between universal human nature and cultural diversity, because all human groups have social norms, but they change from group to group as a response to diverse demands and challenges in their different historical paths.²

Equality and equity distinguishing theory (Sobel et al., 2021)

Kids are capable of distinguishing equality from equity at around 7 years old. Imagine the following situation: you have three cookies to distribute between two other persons. What do you do? Now imagine the same situation but one of the persons have one cookie and the other have none. What do you do now? Most people would give one cookie to the person with already another cookie and two cookies to the person without cookies at all, which is unequal in action but equal as an overall resulting distribution (Sobel et al., 2021). This means that people are more able to give unequal distributions when that inequality creates an equal resulting outcome. This capacity to consider different needs and to compare them is at the heart of differentiating between equality and equity, which may be one criterion for an advanced understanding of justice according to Rawls¹³ who formulated the principle of difference, saying that social and economic inequality are fair only if they benefit the less advantaged, which is similar to the cookies inequality case just described. Research by Sobel and Blankenship (2021) shows that kids can acquire this principle earlier if they are taught to do so by learning to consider the point of view of the other persons in the distribution. This means that sociocognitive processes like socialization, social norms and moral reasoning can be particularly important in the developing sense of fairness during childhood.

Inequality aversion theory (Fehr et al., 2006)¹⁴

Justice is about reasons but also about emotions. With only reasons and not emotions people could lack the internal motivation for acting to correct unfair treatment. In this sense, empathy, as the capacity to identify cognitively and emotionally with other people's needs is key to provide them a fair treatment. Without an aversion to inequality people can understand inequality but lack a motivation to amend it.

This aversion to inequality emerges around 3 to 4 years old in the version of disadvantageous inequality (when the person suffers directly the inequality), but appears at 8 years old in its version of advantageous inequality (when the person receives more than her counterpart) as concerns of fairness focused on others develop. In our research in Costa Rica, we found that inequality aversion can be stronger than social norms suggesting to be conformist and humble when receiving an unequal treatment in adolescents.¹⁵ Inequality aversion may be a powerful driver of social change when it escalates to macro-social level as discontent and anger are usual explanations of rebellions against injustice in the historical record.¹⁶

Costly punishment theory (Bernhard et al., 2020)

Kids can react to unfairness when they experience it personally, but also when they perceive unfairness towards others. Costly punishment occurs when kids experience it and are willing to lose something in order to punish another person. For example, in experimental research with economic games, children prefer to miss a gain if they perceive it as unfair; for instance, if the other person receives more. It seems that costly punishment behavior emerges around 4 to 5 years of age and occurs systematically from around 6 years onward (Bernhard, Martin, & Warneken, 2020). But kids can also apply third party or altruistic punishment when they are not directly involved in order to punish someone else who mistreated another person. Kids of 7 years old but not 5 years old, engage in third party punishment of unfair outcomes. Children's punishment may be driven by outcome rather than intent because they present equal rates of punishment when unequal outcomes were either the result of chance or the intentional act of another child, but children around 7 years old seem to be more capable to differentiate intent from accident than younger kids.¹⁷ These findings suggest that younger children (5 years of age) may be mainly motivated to create equal outcomes between themselves and others, whereas older children (7 years of age) may be motivated to enforce fairness norms based on a better understanding of other people intentions. This line of evidence questions the theory of the rational choice because it implies that people consider fairness and intentions, and not only gaining, when they participate in distributive situations and even when they see other people in distributive situations. This implies that justice in human terms is not only a rational matter, but also an issue of moral and emotional valence.

Discussion

The eight theories reviewed are not to be taken as an exhaustive representation of all the evolutive and sociocognitive mechanisms at the base of the development of the human sense of justice. But, because of the robust evidence supporting their main tenets, they are strong candidates to be considered as key drivers for what human justice means and how its ontogeny unfolds regarding both genetic and cultural forces (Figure 1).

How is the sense of justice developed? As can be seen considering the theories reviewed, the building of the human sense of justice is more than just a moral issue, as it has to do with the very nature that defines what a homo sapiens is and how our species is capable to build complex societies based on sustained cooperation. In this sense, it could be said, the more just a society is, the more socially sustainable it will be. On the contrary, the more unjust a society is, the more socially unsustainable it may become.

The human sense of justice is built on the deep interdependent nature of human beings,¹⁸ that make sustained cooperation a matter of life or death in humans' evolution. To demand justice for oneself, a person needs to consider itself as a worthy member of the group, and

has to be capable of understanding other people intentions, in order to differentiate accident from intent. In this context, social norms might serve to predict fairer outcomes and prevent abusive behaviors, and inequality aversion and punishment may also serve personal and group interests of maintaining justice as a basis for sustained cooperation. The difference principle emerges as a way to distinguishing between equality and equity, considering differentiated needs in interchanges and cooperation.

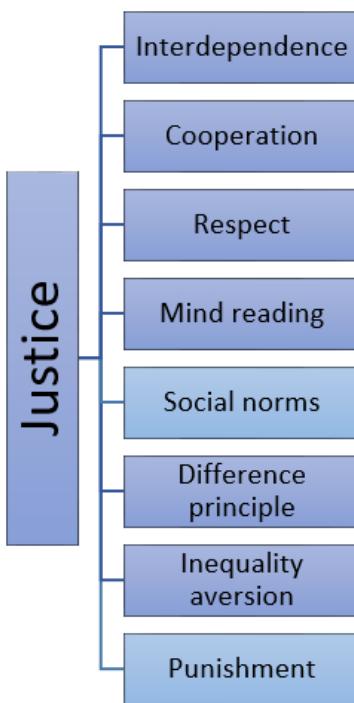


Figure 1 Some sociocognitive mechanisms in the development of the human sense of justice.

How do these theories solve the puzzle of selfishness versus solidarity? Sociocognitive mechanisms in cultural context can be seen as ways of solving conflict between personal and others interests and needs. As the theory of morality as cooperation suggests, morality can be viewed as a sociocognitive mechanism humans evolved to try to solve interpersonal and social conflicts. Do humans succeed? Although human history shows a pattern of moral progress and social improvement in the long run,^{19,20} injustice, abuse, exploitation, inequity and domination are very present in everyday life all around the world, remembering that our mechanisms for fairness are clearly imperfect and incomplete, and also that humans have mechanisms too for violence, imposition, selfishness, discrimination, oppression, exclusion, evil and damage²¹ that are not the object of the present article.

Is the human being a fair and altruistic being? It seems that the theories reviewed posit a kind of strategic being, capable of behaving in fair and altruistic ways, but also capable of behaving in selfish and exploitative forms depending on physical and social circumstances, and particularly of social beliefs and norms, and imbalances in power.²² Justice as a sociocognitive mechanism can be the way created by humans to regulate behavior in order to protect sustained cooperation.

In what sense justice is universal and in what sense it is not? Justice seems to be a human universal in its essence, but not in the

particular ways it is understood and applied. The case of merit as a more modern construct can be a crucial point of differentiation between traditional and modern societies. Also, the philosophical critique to the construct of merit and how it may hide deep injustices can be taken into account to illuminate how difficult it is to fully and absolutely determine justice, since meritocracy is usually considered a criterion of fairness.²³

What exactly is unfair, how are situations to be judged, what norms do apply and how they do, and how strict or loose may norms should be Gelfand et al.,²⁴ is a quite complicated conundrum of layers and layers of psychological and sociocultural complexity that exceeds by far the purpose of this paper, but here it is suggested that the consideration of evolutionary and sociocognitive theories may shed light for future advances in this field of research and action, both to generate new hypothesis to advance knowledge and to generate new actions, interventions, policies, norms and institutions capable of producing more justice and then more human wellbeing and progress.²⁵⁻²⁸

Acknowledgments

None.

Conflicts of interest

The author declares there is no conflict of interest.

References

1. Sen A. *The idea of justice*. Penguin Books. 2009.
2. House BR, Kannigieser P, Barrett HC, et al. Universal norm psychology leads to societal diversity in prosocial behaviour and development. *Nature Human Behaviour*. 2020;4(1):36-44.
3. Tomasello M, Vaish A. Origins of human cooperation and morality. *Annual Review of Psychology*. 2013;64(1):Article 1.
4. Tomasello M, Melis AP, Tennie C, et al. Two key steps in the evolution of human cooperation: The interdependence hypothesis. *Current Anthropology*. 2012;53(6):673-692.
5. Harari YN. *Sapiens: A brief history of humankind*. Random House. 2015. p. 1-303.
6. Hamann K, Warneken F, Greenberg JR, et al. Collaboration encourages equal sharing in children but not in chimpanzees. *Nature*. 2011;476(7360):328-331.
7. Radovanović K, Lorskens A, Schütte S, et al. Bonobos respond aversively to unequal reward distributions. *Proceedings Biological Sciences*. 2025;292(2045):20242873.
8. Curry OS, Mullins DA, Whitehouse H. Is it good to cooperate? Testing the theory of morality-as-cooperation in 60 societies. *Current Anthropology*. 2019;60(1):47-69.
9. Inglehart RF. *Cultural evolution*. Cambridge University Press. 2018.
10. Engelmann JM, Tomasello M. Children's sense of fairness as equal respect. *Trends Cogn Sci*. 2019;23(6):454-463.
11. Killen M, Lynn Mulvey K, Richardson C, et al. The accidental transgressor: morally relevant theory of mind. *Cognition*. 2011;119(2):197-215.
12. Tomasello M. *Becoming human: A theory of ontogeny*. Belknap Press. 2021.
13. Rawls J. *Teoría de la justicia*. Fondo de Cultura Económica. 2006.
14. Fehr E, Naef M, Schmidt KM. Inequality aversion, efficiency, and maximin preferences in simple distribution experiments: Comment. *American Economic Review*. 2006;96(5):1912-1917.

15. Chaverri Chaves P, Fernández I. Inequality aversion and social norms in resource distribution by Costa Rican adolescents. *Ánfora*. 2025;32(58):263–289.
16. Bargain O, Jara X, Rivera D. Social gaps, perceived inequality and protests. *IZA Discussion Paper No. 17769*. 2025. p. 36.
17. Arini RL, Bocarejo Aljure J, Bueno Guerra N, et al. Cognitive and affective processes in children's third-party punishment. *Quarterly Journal of Experimental Psychology*. 2025;78(10):2091–2109.
18. Tomasello M. The ultra-social animal. *European Journal of Social Psychology*. 2014;44(3):187–194.
19. Pinker S. *The better angels of our nature: Why violence has declined*. Viking Books. 2011.
20. Pinker S. *Enlightenment now: The case for reason, science, humanism, and progress*. Penguin Books. 2018.
21. Sapolsky R. *Behave: The biology of humans at our best and worst*. Penguin Press. 2017.
22. Cochard F, Le Gallo J, Georgantzis N, et al. Social preferences across different populations: Meta-analyses on the ultimatum game and dictator game. *Journal of Behavioral and Experimental Economics*. 2021;90:101613.
23. Sandel M. *The tyranny of merit: What's become of the common good?* Farrar, Straus and Giroux. 2020.
24. Gelfand MJ, Raver JL, Nishii L, et al. Differences between tight and loose cultures: a 33-nation study. *Science*. 2011;332(6033):1100–1104.
25. Ensminger J, Henrich JP. *Experimenting with social norms: Fairness and punishment in cross-cultural perspective*. Russell Sage Foundation. 2014. p. 1–21.
26. Hawkins RXD, Goodman ND, Goldstone RL. The emergence of social norms and conventions. *Trends in Cognitive Sciences*. 2019;23(2):158–169.
27. Henrich JP. *The secret of our success: How culture is driving human evolution, domesticating our species, and making us smarter*. Princeton University Press. 2016.
28. Sloane S, Baillargeon R, Premack D. Do infants have a sense of fairness? *Psychological Science*. 2012;23(2):196–204.