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How Evolution Explains Generosity. Key Mechanisms, Individual Differences, and Practical Insights

Jak ewolucja tłumaczy hojność. Podstawowe mechanizmy, różnice indywidualne i praktyczne zastosowania

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ABSTRACT

Generosity is a form of prosocial behavior that is increasingly featured in psychological research. Many studies cite generosity as a socially desirable behavior, thus, seeking its psychological correlates. However, without an overarching concept, many of these inquiries may overlook significant cues that coherently capture generosity as an adaptation that currently increases or decreases in similar circumstances as those in evolutionary history. Therefore, this article focuses on evolutionary approaches to this phenomenon. The inclusive fitness theory and the reciprocal altruism theory have been presented as two key explanations of prosociality. Findings on the environmental and individual indicators of generosity, which support predictions derived from the evolutionary concepts, are then discussed. It has been explained how, for reasons outlined by evolutionary history, individual differences can shape various strategies regarding prosociality. Ways in which generosity can be situationally activated are also presented, as well as guidance, both for practitioners and researchers in related disciplines, on how generosity can be studied and reinforced.

Keywords: generosity; prosocial behavior; kin altruism; reciprocal altruism

INTRODUCTION. GENEROSITY AS A FORM OF PROSOCIAL BEHAVIOR

By definition, prosocial behavior is directed towards acts that benefit society as a whole (see, e.g. Penner et al., 2005). Much of the research on this issue refers

to the concept of altruism, which has a solid theoretical basis in many disciplines. Altruism is defined as behavior in which an individual takes action for the good of others and incurs some loss in the process (Buss, 2019). One of the indicators of prosocial behavior is generosity as well, which has recently attracted the attention of researchers as an independent phenomenon. An oft-cited definition of generosity is "the virtue of giving good things to others freely and abundantly" (Science of Generosity Initiative, 2012).

We have outlined three concepts: prosocial behavior, altruism, and generosity. Let us now assume that prosocial behavior is the overarching concept, encompassing both altruism and generosity, as each contributes to the benefit of the others, yet they differ in the way these benefits are provided. The reason why these concepts are mentioned separately is the practical implication of their meaning, which reveals a detailed perspective on to whom and under what circumstances we are willing to give more. To understand this implication better, let us imagine a situation in which a person decides to help a loved one by donating a large sum of money. We thus see an altruistic act with the recipient benefiting, and the giver losing. However, if the same altruist supports another person in a similar situation, and donates a different amount, we will be able to determine who has been helped more generously. More often, then, the concept of generosity can be used to describe the distribution of resources in everyday situations, whereas altruism will remain a term more easily applied to life-threatening ones, as well as to a person's general incurring of losses for the good of others. This will open us up to a new operationalization of variables, as well as an emphasis on the differences in the quantitative aspect of the benefits provided by givers. By definition, generosity will be understood as a particular form of altruism, expressed by the willingness to share a person's resources abundantly.

In the following section, we will look at resources that an individual can share with others, as well as how to measure generosity.

METHODS OF GENEROSITY MEASUREMENT

Generosity can be manifested by giving money, possessions, time, attention, help, encouragement, or emotional availability, to name a few (Allen, 2018). To study generosity, researchers successfully use economic games, for example, the dictator game and the ultimatum game (Kahneman et al., 1986). The rules of the dictator game provide for a simulation in which one of the two participants has to divide a given amount, e.g. money, between themselves and the other participant. The dictator can divide the sum in any way they choose – by keeping it entirely for themselves, sharing it equally with the other player, or choosing another solution at their own discretion. In this way, a selfish or prosocial motivation can be established. The greater the amount donated to the other player, the greater the

dictator's level of generosity. The rules of the ultimatum game, on the other hand, differ in that the other participant can reject an offer if they consider it unfavorable. In such a situation, both players receive no money. Reciprocal benefit is then necessary to receive a reward – the generosity of the first player can therefore be selfishly motivated. Both simulations provide a quick and simple way to test a person's willingness to share resources with others.

In the description presented above, generosity is reduced to a short-term, incidental situation. It is also possible to measure generosity perceived as an individual's trait. There are few questionnaires that could directly measure generosity understood in this way. However, the article on tool reliability and validity (Dwidienawati et al., 2019) demonstrated good psychometric properties of the Interpersonal Generosity Scale (Smith, Hill, 2009), which refers to the sharing of psychological resources. The Polish version also demonstrates good psychometric properties of the tool (Mróz et al., 2024). The scale allows the measurement of six components of generosity: attention, compassion, openhandedness, self-extension, courage, and verbal expression. Generosity can therefore take many forms, from sharing physical resources to devoting private time or attention. Sharing material resources refers to giving money or food, as demonstrated by the simple economic games described above. However, psychological resources are also shared; for example, grandparents devote time to their grandchildren, and couples spend time resolving mutual problems, which expresses interpersonal generosity.

The next part of the paper will outline significant factors of evolutionary history that led to the perpetuation of generosity.

GENEROSITY FROM AN EVOLUTIONARY PERSPECTIVE. THE EVOLUTIONARY ROOTS OF HELPING RELATIVES

Let us consider the evolutionary consequences of a person's ownership of certain resources, especially what strategies for utilizing these resources would promote survival and reproduction. A hunch might suggest that, for an individual's survival, the best strategy would be selfishness and keeping the most material resources for oneself. Taking a broader perspective, however, we start to see that natural selection favors not so much an individual but the traits that allow genes to be passed on to the next generation. For this reason, an individual who shares, e.g. harvested food with their offspring will increase their chances of passing on genes in the future.

These findings have long been known in evolutionary thought under the name of the inclusive fitness theory. The classic work on the subject dates back to Hamilton (1964), who showed that altruistic acts would be favored by natural selection if the costs incurred by the altruist were lower than the benefits gained

by the recipients of that act. The ratio of gains and losses was determined by Hamilton's rule and formulated as:

$$rb > C$$

where *r* stands for the degree of relatedness between individuals, *b* stands for the benefit of the recipient, and *C* stands for the cost of the altruist. The formula illustrates selection pressure resulting in the formation of mechanisms to help relatives.

Although Hamilton's rule has been subject to criticism (Nowak et al., 2017), such a general consensus on behavior favoring kin support remains valid (Bourke, 2014; Rubenstein, Alcock, 2018; West et al., 2021).

In certain instances, the willingness to behave altruistically towards loved ones changes depending on whether help is given in a life-threatening situation, or whether it is merely an everyday occurrence. For example, when rescuing relatives from a burning house, the altruist is at risk of death. Research (Burnstein et al., 1994) has shown that, in this situation, the willingness to help relatives decreases sharply with the degree of kinship. This differs from the willingness to support relatives in everyday events. In such a case, the willingness to help relatives with lower and lower degrees of kinship declines slowly. In other words, the acts in favor of distant relatives come more easily if they do not involve us incurring large losses. Ultimately, the predictions derived from Hamilton's rule are consistent with the above conclusions. We can see that altruism and generosity may be the two strategies for helping, given the context and the losses incurred by an individual.

The findings above are in line with the experiences of everyday life. This is explained by the simple fact that we are more willing to help relatives than strangers. Additionally, we are more willing to share possessions with the immediate family, devote time to their problems, leave most of the legacy to them, and also give them presents (Chuang, Wu, 2017; Elinder et al., 2021; Michalski, Shackelford, 2005).

The predictions derived from the inclusive fitness theory outlined above are supported by much empirical evidence. For example, the studies on receiving or giving help have shown that the willingness to help increases proportionally to the degree of kinship, as well as to the reproductive worth of the recipient (Chuang, Wu, 2017; Essock-Vitale, McGuire, 1985). We thus see that the evolutionary benefits of generosity increase when helping individuals who are more likely to be reproductive, i.e. young individuals. Similar conclusions are drawn from the studies analyzing the inheritance of possessions. The largest share has been bequeathed to offspring who have 50% of identical genes to the deceased. The discrepancies in the sum bequeathed have gradually decreased with the degree of kinship (Elinder et al., 2021; Smith et al., 1987). From a "gene perspective", therefore, behaviors that will benefit most are those that secure genetic succession.

Helping others, altruism, and generosity are then mechanisms shaped by natural selection, which makes us more willing to help close relatives rather than distant relatives (Dawkins, 2016b).

Since actions such as rescuing and helping, sharing food, giving gifts, and so on, serve to multiply copies of genes, sometimes at the expense of the individual concerned, it is easy to imagine an adaptive problem posed by the risk of investing in "someone else's genes". In the animal world, females are more involved in caring for their offspring. This is due to the simple fact that a female is always certain of passing on her genes to her offspring. Males do not have the same certainty, so their care involves the risk of raising someone else's children. Such a risk is a parental investment on the part of males. The paternity uncertainty hypothesis may therefore explain men's lower involvement in the care of their offspring (Buss, 2019). However, paternity uncertainty has far-reaching consequences. As shown in the study (Michalski, Shackelford, 2005), grandparents' investment in their grandchildren is proportionally dependent on the belief that they share genes. As mentioned earlier, the absolute certainty of passing on genes to the child is always with the mother. The grandmother on the mother's side, therefore, has far more certainty of kinship with her grandchildren than the grandfather on the father's side. Thus, the grandparents on the mother's side show the most affection for their grandchildren, spend more time with them and invest in them more resources than the grandparents on the father's side. These findings do not mean that our reasoning related to altruistic behavior is preceded by a kinship calculation. More likely, this mechanism is programmed and unconscious. However, findings in evolutionary psychology suggest that behaviors such as generosity are adaptively significant. For this reason, we are more willing to give resources to relatives with a high degree of kinship.

Nevertheless, it is easy to see that people also share resources abundantly with their spouses, who do not have the same genes. This aspect will be addressed in the next part of the article.

THE EVOLUTIONARY ROOTS OF HELPING SEXUAL PARTNERS

One of the adaptive problems faced by our ancestors was the selection of a partner capable and willing to invest in a relationship and offspring (Buss, 2016, 2019). Accordingly, from a prehistoric woman's perspective, the preferred trait for choosing a partner may have been a sign of commitment to the relationship, and a willingness to share resources. Hence, it is not difficult to imagine selection pressure perpetuating these traits. This is supported by the studies in which women rate men who care for children as more attractive (Barclay, 2010; Buss, Shackelford, 2008). Another study has found that altruists have more sexual partners and are more likely to be sexually active while in a relationship (Arnocky et al., 2017).

Thus, meanness and extreme egoism are the traits that hinder reproductive success as well as the chance to pass genes on.

Lotem et al. (2003) hypothesize that unconditional altruism has developed due to an increase in attractiveness seen by a potential partner. Let us apply these findings to the phenomenon of generosity. If a person signals willingness to share their resources in an abundant manner, this will be perceived as attractive by the opposite sex since it is indicative of the high adjustment of a generous individual. Such is because the readiness to share a person's resources may indicate a surplus of them, which will result in securing the livelihood of both the partner and future offspring.

These considerations are extended in an article (Hardy, Van Vugt, 2006), presenting the outcomes of the study on competitive altruism. The authors show that altruistic behavior is associated with high social status. Generosity may therefore be an evolutionary strategy in which the payoff for the givers is the attractiveness of rewards in the form of social advancement. For this to happen, prosocial behavior needs to be visible to others. This is also revealed in the study above – altruistic behavior increased with acts being overt and public. Therefore, the givers gained high social status and were perceived as people worth working with. Additionally, men with high social status are viewed as more attractive relationship partners (Buss, 2016).

The accordance of competitive altruism with the inclusive fitness theory presents clearly how natural selection works, leading to the development of traits such as generosity towards immediate family and spouses. In the next part, we will find an explanation of this phenomenon towards unrelated individuals.

THE EVOLUTIONARY ROOTS OF HELPING UNRELATED PEOPLE. THE EMERGENCE OF COOPERATION

Trivers (1971) proposed an explanation for the evolutionary strategy, allowing unrelated individuals to benefit from helping each other, called the reciprocal altruism theory. It is based on the assumption that altruism between unrelated individuals developed over the course of evolution due to reciprocal gains from cooperation. For example, if an individual in a hunter-gatherer society fails to hunt game, they are condemned to starvation. Another individual in the community may have a surplus of food to share without suffering a loss. Then, survival and reproductive chances are sustained for both individuals at a similar level. This raises, however, the adaptive problem of uncertainty as to whether help will be reciprocated.

As Cosmides et al. (2005) argue, natural selection has equipped us with a mechanism for detecting cheaters, making us alert to attempts of unreciprocated exploitation. Additionally, when we are the recipients, we feel obliged to reward

it in the future. This emphasizes the adaptive importance of reciprocity (Jaeggi, Gurven, 2013), which, it is worth noting, has also evolved in other animal species (Schweinfurth, Call, 2019). In the event of reciprocal altruism acting between two individuals, we find an understanding of the principle: "You'll scratch my back, and I'll scratch yours". Here, we see direct reciprocity and the benefits of cooperation for both individuals.

Another realm of altruistic behavior, which completes the picture of helping others from an evolutionary perspective, is indirect reciprocity. In this case, the principle would be "You'll scratch my back, and I'll scratch someone else's". Indirect reciprocity, thus, occurs through reputation building, based on the fact that people feel positive towards those who help others (Szcześniak, 2019). This is also illustrated by a study (Wedekind, Milinski, 2000) in which participants decided how to share money with other people. When a history of dividing money was added to the participants' description, those who had been generous in the past were more likely to receive money.

As Nowak and Sigmund (2005) point out, indirect reciprocity takes the form of upstream reciprocity, when the altruist can count on third parties to help in the future, and downstream reciprocity, when the recipient feels the need to help others. Let us relate these phenomena to evolutionary concepts. In sociobiology, the strategy of gene recognition is commonly referred to as the green-beard effect (Dawkins, 2016a). This is a concept that hypothesizes a scenario in which genes that cause an individual to have a green beard recognize their copies in another individual who has a beard of the same color. Then, altruistic behavior towards individuals who have copies of the same shared genes will be beneficial. In the context of the present discussion, it is the recognition of a prosocial attitude and generosity in others that may influence the decision to help an individual, even if we have not been the direct recipients of the act. Although the green beard effect was successfully observed in animals (Keller, Ross, 1998), a cautious approach should be taken in using this concept to explain human behavior. Nevertheless, the concept is revisited in works defining altruism and generosity from the evolutionary perspective (Szcześniak, 2019).

The history of humankind explains that an individual's identity often fuses with that of the group since this used to be a beneficial adaptation – the success of the group maximizes an individual's chances of survival (Tooby et al., 2006). This adaptation results in a tendency to enter into group coalitions that compete very strongly with each other for resources. The contemporary relevance of these inclinations was demonstrated by Tajfel's (1981) famous experiments, in which subjects were divided into groups according to a trivial division, such as fans of Klee or Kandinsky paintings. The creation of an artificial division was sufficient to induce in the subjects an automatic tendency to be generous towards fellow group members, as well as to punish members of the opposing group.

Another example drawn from the evolutionary analysis is evidence provided by the neurobiological setting. For instance, an important neuropeptide that influences prosocial behavior and generosity is oxytocin, whose presence increases an individual's trust and cooperation in economic games (Sapolsky, 2017). Importantly, however, oxytocin has the opposite effect when interacting with strangers, which leads to reduced cooperation and greater envy of others (Declerck et al., 2010; Shamay-Tsoory et al., 2009). In similar studies (De Dreu, 2012; De Dreu et al., 2010), the authors emphasized the evolutionary explanation for the presence of oxytocin when favoring members of a person's own group and distinguishing strangers. Thus, we see another manifestation of the mechanism programmed by natural selection for gene benefits derived from the cooperation of individuals.

The above discussion highlights how the evolutionary basis of generosity can be understood from the perspective of helping relatives, reciprocity, and coalition formation (Hruschka et al., 2015; Komter, 2010). Such mental mechanisms may have evolved evolutionarily as we "help" copies of shared genes to spread, as well as increase the chances of survival and reproduction through the use of prosocial cooperative behavior. To conclude, the evidence suggests that generosity is another manifestation of prosocial behavior rooted in the evolutionary history of humankind. Natural selection favored the reproduction of individuals who were more willing to share with their relatives, were willing to invest their resources in relationships and offspring, as well as formed coalitions based on reciprocity.

The following section of this article will demonstrate the environmental, individual, and situational determinants of generosity. Their existence can be inferred from the above considerations.

THE ENVIRONMENTAL AND INDIVIDUAL DETERMINANTS OF GENEROSITY

Generosity-friendly environment

This section of the paper will outline the circumstances in which the environment affects generosity. Given the previous research on this issue, a well-supported conclusion is the dependence of social capital on social equality, where extreme inequalities make people treat one another worse (Wilkinson, 2001). These inequalities result in less social trust and less willingness to help others, as well as less generosity and willingness to cooperate. This is illustrated by a large-scale study (Glanville et al., 2016) covering 160 regions in 19 European countries, where social capital was specifically considered.

The study identified three types of behavior that constitute generosity: volunteering, donating, and informal helping. They were each significantly

associated with trust and social ties. For example, people with greater trust in others, and extensive social networks, were more likely to demonstrate generous behavior. More broadly, social capital understood as generalized trust and social ties, was an important factor at the regional level. Therefore, regions with higher levels of social trust were characterized by more frequent participation of their residents in volunteering and charitable activities. The authors concluded that social capital was among the environmental issues that influenced the context in which generosity increased in people.

A further argument for a positive correlation between generosity and the strength of social ties is provided by the results of the experiments (Twenge et al., 2007) in which researchers manipulated feelings of social exclusion. It was shown that socially excluded people had a decreased willingness to engage in prosocial behaviour – they were less likely to cooperate with other participants, less helpful, and less generous.

This complements the picture of generosity outlined in the section on the evolutionary origins of helping unrelated people. That indicates that, from an individual's perspective, determining their place in society may include a decrease in the likelihood of cooperative or reciprocal altruism. If an individual recognizes that they cannot rely on others to help them, then a viable strategy will be to focus solely on themselves and be egoistic.

Another example illustrating how environmental settings shape attitudes related to generosity comes from cross-cultural research (Cowell et al., 2017). For example, children in countries such as Canada, the United States, and China show higher levels of generosity than children of the same age in Turkey or South Africa. Arguably, affluent countries encourage the development of altruistic tendencies in people, while developing ones exacerbate competition and selfishness, although it is difficult to draw firm conclusions considering the countries mentioned.

Let us emphasize this clearly: evolution distinctly programs organism flexibility to adapt its behavioral repertoire to the environment in which it operates. For the environment to be favorable to generosity, mutual trust in the community, the strength of social ties, as well as widespread prosperity, and a lack of competition for resources are therefore needed.

INDIVIDUAL DIFFERENCES THAT ENCOURAGE GENEROSITY

Generosity and empathy

One of the most often cited individual predictors of generosity is empathy. According to the empathy-altruism hypothesis, prosocial behaviors, such as generosity, are rooted in empathy and empathic concern motivating an individual to help another person (Batson, Shaw, 1991). A particular indicator of generosity would, therefore, be the capacity for empathy, i.e. the ability to take another

party's perspective and imagine what that person is feeling. This phenomenon is interpreted by researchers as an evolutionary adaptation underlying the desire to help others. Thus, for example, empathy may have served to increase reproductive success among relatives as well as unrelated people, or the giver themselves, through reciprocal acts of support (Davis et al., 1999).

A continuation of the thought presented in the empathy-altruism hypothesis can be found in works dedicated to the Perception-Action Model (de Waal, 2008; Preston, de Waal, 2002). The model assumes that empathy results from the automatic activation of mental representations and brain regions of a person who observes behaviors and actions performed by other people. In the context of this article, it is relevant to conclude that the above mechanism is activated more easily and quickly if the observer is similar to the person they are observing. This relates to the green-beard effect described in previous section, according to which similarity between individuals favors altruistic behavior since it is associated with the likelihood of having a copy of the same gene.

The correlation between empathy, altruism, and generosity presents another evolutionary strategy favoring genetic succession, which is confirmed by research (Batson, Ahmad, 2001). Recent findings have emphasized that empathic concern may be particularly important for increasing generosity (Dickerson, Quas, 2021). Worth mentioning is that other recently conducted experiments have pointed to constraints where empathy does not lead to greater generosity (Lönnqvist, Walkowitz, 2019). Such is the case with the distribution of money. This issue will be developed further in the section on situationally determined generosity.

Generosity and emotions

Research on individual differences in generosity shows its unclear relationship with different emotions. Older studies, for example, suggested that acts of generosity might result from positive mood effects. However, it was later shown that negative mood and guilt, in particular, might play a greater role (Donnerstein et al., 1975; Zagefka, James, 2015). At an initial level, there is an ambiguous relationship between emotion and generosity.

Worth mentioning are the considerations of Trivers (1971), who argued that the psychological mechanisms of human altruism are non-unilateral. This means that, depending on the circumstances, we can derive adaptive benefits from prosocial behavior but also from deception. The solution to the problem, according to Trivers, was the emergence of a flexible mechanism subject to regulation under the influence of emotions. In this way, for example, positive moods and emotions become rewards that motivate prosocial behavior. Negative emotions, on the other hand, motivate the deceivers to compensate the givers for their losses. Equifinality is thus apparent here: different emotions, feelings, and experienced moods can affect generosity.

In recent years, gratitude has been the subject of much research interest (Jans--Beken et al., 2020). In the context of the above findings, a sense of gratitude provides a point of consistency with the considerations of reciprocity described in the section on the evolution of prosocial behavior towards unrelated individuals. Let us recall that the adaptive benefit of direct reciprocity comes from the cooperation between individuals and the desire to return the favor received in the future. Gratitude may, therefore, be an emotion whose evolutionary benefit is an increase in both altruistic behaviors and reciprocal benefits for individuals. Such has been shown in the research – gratitude promotes prosocial behavior, including generosity (Bartlett, DeSteno, 2006).

Generosity and personality

Personality traits are also reported among individual differences associated with generosity. It seems that out of the basic personality traits, in line with the Big Five Model, agreeableness may be the best predictor of generosity as one of the main subscales in measuring this dimension is altruism. However, research findings are inconclusive – some personality traits such as extraversion or conscientiousness may increase generosity, specifically towards family members, and agreeableness towards friends. Openness to experience, in turn, is associated with altruism towards strangers (Oda et al., 2014). It is, therefore, important to distinguish who the recipients of prosocial acts will be. Individual differences in generosity, thus, indicate the presence of universal traits with an adaptive significance. They can flexibly shape generosity in different areas of a person's functioning.

SITUATIONALLY DETERMINED GENEROSITY

We, thus, arrive at a fundamental question: how to increase generosity in everyday life? The following section will provide examples of how generosity can be activated situationally, as well as under what circumstances it can decline.

As discussed in the section dedicated to the evolutionary roots of helping sexual partners, one of the evolutionary benefits is gaining high social status via competitive altruism by a generous individual. The presented studies have found that a person's generosity increases when actions become overt and public (Hardy, Van Vugt, 2006). A shared perspective to the above conclusion and further discussion will be an assumption that awareness of being observed affects prosocial behavior. An interesting area of research on generosity, which results from similar assumptions, has been attempts to arrange space for an individual to choose a prosocial option when making a decision. A famous example was the use of the watching-eye effect to create the impression of being watched,

which in turn increased individuals' benevolence (Powell et al., 2012). However, other studies emphasized that the effect only occurred temporarily with brief exposure to the visual display (Sparks, Barclay, 2013). More recent literature has highlighted a problem with the replication of the results (Rotella et al., 2021), and has questioned the nature of the phenomenon.

Arguably, the watching-eye effect is not a sufficient stimulus to bring about a permanent change of attitude towards generosity. Yet, it may be premature to abandon all the conclusions. A related phenomenon should be noted – in one study, the participants were grouped face-to-face during the ultimatum game to test whether physical attractiveness would influence sharing of the sum of money between the participants (Bhogal et al., 2017). The results, however, showed that the participants made fair distributions. This is particularly relevant to the subject of this section, as it indicates that physical contact with another person may activate prosocial behavior. In another study, the participants split money by seeing only the picture of the player. They were, in fact, more generous towards physically attractive people, and fair sharing declined (Bhogal et al., 2016). Thus, sexual selection may have reinforced the tendency to prioritize helping attractive people (Buss, 2016). However, we have clues on how to activate prosocial attitudes via physical contact.

Observing other people's behavior can also activate generosity. One study revealed that, in children, generosity could be situationally induced by overhearing adults who were praising behaviors associated with benevolence (Qin et al., 2021). In another study, children were exposed to a variety of behaviors performed by actors (Blakey et al., 2019). The children who had observed acts of kindness were more likely to share with altruistic actors than those who had seen insensitive and selfish behavior. However, when they had to allocate resources between generous and non-generous actors, the children were driven by equality. The researchers suggested that exposure to kindness generated benevolence in the giver.

The following section will discuss the circumstances in which generosity can decline, given the particular context.

As research (Vohs et al., 2006, 2008) shows, the activation of the concept of money alone makes people less willing to help, keep more distance from others, and withdraw from cooperation. Additionally, the execution of competitive norms promotes the strengthening of selfish attitudes and reduces altruistic behavior (Zaleśkiewicz, Hełka, 2007). The studies on generosity based on economic games, such as the dictator game, indicate that having money to share makes people respect other participants less, especially if they do not see a future gain for themselves, unlike when sweets are the currency to divide (Wang et al., 2021). This can be interpreted as using the idea of money to break interpersonal relationships unless there are selfish motives to sustain them.

Another factor that can reduce the giver's generosity is the number of people in need. For example, people are willing to help victims and those in need if they

see a picture of one representative person. However, when several individuals are depicted, generosity automatically falls (Kogut, Ritov, 2005). This effect is so strong that increasing the number of disadvantaged people from one to just two persons weakens the willingness to help (Slovic, 2007). This is probably related to the uncertainty about whether the favor will be reciprocated when it is extended to more than one person (Cosmides et al., 2005; Trivers, 1971). An important suggestion for practitioners, therefore, would be to arrange charitable events using images of one person only.

Finally, one of the factors not only reducing but also leading to antisocial punishment is excessive levels of generosity. Such a surprising observation was made in a cross-cultural study in which the subjects participated in public welfare games (Herrmann et al., 2008). Although one of the findings was that people generally behaved prosocially across cultures, a hostile reaction to excessive generosity was also shown, which is particularly worrying. Presumably, in that case, the desire to punish altruists stemmed from an overestimation of prosociality. In other words, from the perspective of competitive altruism, a higher level of generosity will cause participants to adapt to new, more prosocial norms. Consequently, they will have to share a greater proportion of their resources.

The results of the above studies can then be put into practical recommendations – prosocial acts should be made public but should not present excessive donations from an individual. Also, campaigns that demonstrate prosocial behavior will be helpful. A good example of such a practice is the "Great Orchestra of Christmas Charity" foundation operating in Poland, which publicizes acts of kindness, thus making the altruist visible, and maintains this visibility through heart-shaped stickers that donors receive after making any donation. Depending on the situation, we can encourage generosity by putting people face to face. Charity campaigns, on the other hand, should avoid images showing more than one recipient.

SUMMARY

The keynote of the article is that prosocial behavior, including generosity, has its origins in the evolutionary lineage of humans. The examples presented illustrate generosity as a former adaptation that allowed genes to spread efficiently. Thus, we see an explanation for such common phenomena as favoring a person's close relatives, the widespread tendency to leave a legacy, or even nepotism. The paper also features interpretations of prosocial behavior derived from the reciprocal altruism theory. This makes it clear, among other things, under which conditions cooperation can form and generosity can grow.

The indicators of generosity that we can investigate today reflect conclusions drawn from evolutionary assumptions. For example, among the environmental

determinants of generosity that we remain sensitive to is social trust, or the strength of social ties, which create space for coalition formation. We, thus, understand that a lack of social capital can affect the naturally programmed mechanisms underlying prosocial action. This seems to be a particularly significant issue in light of current global events, which may contribute to a decline in generosity. In light of the research cited in the text (see, e.g. Wilkinson, 2001), low capital may activate adaptive mechanisms that limit prosociality.

More importantly, efforts aimed at increasing generosity that are implemented independently of insights from evolutionary history are simply ineffective (Herrmann et al., 2008; Kogut, Ritov, 2005; Slovic, 2007). We can see that evolutionary psychology provides very important insights that help understand what determines the willingness to help others.

Future research on generosity should befit from simple and effective techniques in combination with other variables. For example, demonstrating situational methods of activating generosity could be the subject of research by ethicists – the contemporary version of utilitarianism refers to impartial beneficence, the manifestation of which includes generosity (Everett, Kahane, 2020). The nature of the human psyche also provides indications for health psychology. There is evidence that generosity can lower stress, reduce the risk of death (Poulin et al., 2013) increase well-being (Caprariello, Reis, 2021) and also improve marital satisfaction (Dew, Bradford Wilcox, 2013). Since tools for measuring generosity are brief and easy to interpret (see, e.g. Mróz et al., 2024), using this variable may be particulary advantageous in experimental research.

In summary, generosity is a socially desirable phenomenon, being valuable for the well-being of both an individual and other people. Evolutionary history allows us to understand the presence of this trait as well as the circumstances under which it may grow or decline. This provides an area of extensive research for many psychological and related sciences.

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ABSTRAKT

Hojność jest formą zachowania prospołecznego, która coraz częściej pojawia się w badaniach psychologicznych. Wiele badań przytacza hojność jako zachowanie społecznie pożądane, starając się odnaleźć jej psychologiczne korelaty. Jednakże bez nadrzędnej teorii wiele z tych badań może pomijać istotne wskazówki, które spójnie ujmują hojność jako adaptację, która obecnie wzrasta lub maleje w okolicznościach podobnych do tych, które napotykaliśmy w historii ewolucyjnej. Dlatego też niniejszy artykuł skupia się na ewolucyjnym podejściu do tego zjawiska. Teoria dostosowania łącznego oraz teoria altruizmu odwzajemnionego zostały przedstawione jako dwa

kluczowe wyjaśnienia prospołeczności. Następnie omówiono wyniki dotyczące środowiskowych i indywidualnych wyznaczników hojności, które wspierają przewidywania wynikające z koncepcji ewolucyjnych. Wytłumaczono, z jakich powodów, które nakreśliła historia ewolucyjna, różnice indywidualne mogą kształtować różne strategie w zakresie prospołeczności. Przedstawione są również sposoby sytuacyjnego aktywizowania hojności, a także wskazówki zarówno dla praktyków, jak i badaczy w pokrewnych dziedzinach dotyczące tego, jak hojność może być badana i wzmacniana.

Słowa kluczowe: hojność; zachowanie prospołeczne; altruizm krewniaczy; altruizm odwzajemniony