From the light triad to the dark tetrad: Two sides of human nature in the context of life and health, considering cognitive reflection and generosity[1]

Marcin Kusiak[a] ✉

[a] *Marcin Kusiak, https://orcid.org/0009-0004-3794-9700,*
  Department of Psychology, Faculty of Pedagogy and Psychology, Jan Kochanowski University of Kielce, Poland
✉ *Corresponding author: marcin.kusiak@ujk.edu.pl*

Abstract: This article reviews research on two contrasting groups of personality traits – from the so-called light triad (including faith in humanity, humanism, and Kantianism) to the so-called dark tetrad (including Machiavellianism, narcissism, psychopathy, and sadistic tendencies). The light triad encompasses empathy, trust, and prosocial attitudes, whereas the dark tetrad describes individuals who are manipulative, antagonistic, and lacking in empathy. The article also examines the role of cognitive reflection and generosity in shaping prosocial decisions and moral judgments. The review includes both empirical (quantitative and qualitative) studies and key theoretical works. It cites and discusses findings from correlational and experimental psychological research, including behavioral economic games (considering the role of cognitive reflection) and population-level analyses (e.g., profiling voluntary blood donors and examining altruism in the context of volunteering). The relationships between light triad and dark tetrad traits and prosocial behaviors (generosity, altruism) are analyzed, along with aspects of individuals' health (e.g., health-promoting habits). The article describes definitions of these constructs and research findings indicating, among other things, that individuals with light triad traits exhibit greater empathy, altruism, and life satisfaction, whereas those with dark tetrad traits are characterized by a lack of empathy and a tendency toward aggressive or manipulative behaviors. The findings also demonstrate a bidirectional influence of cognitive reflection: when helping others entails personal cost, reflective thinkers behave more selfishly than impulsive ones; however, when altruism carries no personal loss, reflective individuals are more generous and helpful. A study of voluntary blood donors further shows that generosity is strongly correlated with both cognitive and emotional empathy, as well as with a health-promoting lifestyle. The review indicates that the light triad and its associated values (empathy, trust, altruism) promote mental health, better social relationships, and greater life satisfaction. In turn, the dominance of dark tetrad traits is associated with antisocial behaviors, social isolation, and reduced psychosocial well-being. Promoting empathy and generosity can benefit individuals and society, whereas strong "dark" traits are linked to negative psychosocial consequences. The article discusses key conclusions and practical implications (e.g., for parenting and public health) and offers suggested directions for future research on the bright and dark aspects of human personality.
Keywords: altruism, dark tetrad, generosity, light triad, cognitive reflection

Introduction

It is commonly held that by nature humans exhibit both a tendency to be good and a potential to do evil. In recent years, personality psychology has been actively examining this moral dualism, identifying both "dark" and "bright" aspects of personality. On one hand, the so-called dark triad (Paulhus & Williams, 2002) is well-documented, encompassing Machiavellianism, narcissism, and psychopathy – traits associated with antagonism, manipulation, and lack of empathy (Kau-fman et al., 2019). Gómez-Leal et al. (2024) described extending this concept into a dark tetrad by adding a sadistic tendency to take pleasure from others' suffering. On the other hand, in response to the predominance of research on "dark" traits, the concept of a light triad emerged – a set of positive personality traits that recognize the dignity and worth of others: faith in the fundamental goodness of people, humanism, and Kantianism. The idea of the light triad is an attempt

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1   Article in Polish language: https://stowarzyszeniefidesetratio.pl/fer/64P_kusi.pdf

to capture the good side of human nature in contrast to dark traits – it represents a gentle and benevolent orientation toward others, metaphorically described as the stance of an "everyday saint" (Kaufman et al., 2019).

The aim of the article is to review the literature on both ends of this personality spectrum – the light triad and the dark tetrad – with particular attention to their relationship with prosocial attitudes and social functioning, in the context of life and health. Of particular interest is the significance of these traits for the propensity to engage in prosocial behaviors such as empathy, altruism, and generosity.

The analysis also incorporates a cognitive factor, namely cognitive reflection – the tendency toward analytical, controlled, and conscious thinking – and examines how it affects the willingness to act on behalf of others. This issue seems important, because rational reflection can both promote ethical decisions, but also inhibit spontaneous impulses of selfless help. The article presents experimental findings that illustrate this complex relationship.

In addition to discussing general trends in adult populations, the paper also highlights specific groups that have been studied – such as voluntary blood donors, as an example of individuals with exceptionally high prosocial potential – to better illustrate how personality and cognitive factors translate into real prosocial actions. Do a positive disposition and altruism promote "life-givingness" – understood both metaphorically as creative fullness of life and literally in the context of parenthood? Or, conversely, do "dark" traits impair the ability to form healthy, lasting bonds, which may affect starting a family and the partners' mental health? The article considers what implications a bright or dark personality profile may have for family life, relationships, and health.

1. The bright triad – the positive side of human personality

The light triad of personality comprises three positive traits – faith in humanity, humanism, and Kantianism – that reflect a benevolent orientation toward others (Kaufman et al., 2019). Faith in humanity is the belief that people are fundamentally good by

nature; humanism is expressed as respect for the dignity and worth of each person; and Kantianism entails treating others as ends in themselves rather than merely as means to an end (Kaufman et al., 2019). The concept of the light triad was developed in contrast to the theory of the dark triad (Machiavellianism, narcissism, psychopathy), which centers on traits such as antagonism and manipulation. The light triad thus represents the "brighter side" of personality – a tendency toward empathy, kindness, and moral treatment of others (Kaufman et al., 2019; Lukić & Živanović, 2021). Importantly, research indicates that the light triad is not simply the opposite of the dark triad. The overall light triad score correlates only moderately negative with the dark triad score (r = –0.48, p < .01), suggesting that the two constructs are not opposite poles of a single dimension but rather relatively distinct clusters of traits (Kaufman et al., 2019). In other words, an individual can exhibit both "dark" and "bright" tendencies simultaneously – for example, a person might display narcissistic traits while also holding a genuine faith in the goodness of others (Castagna & Hart, 2024; Ramos-Vera et al., 2023).

The components of the light triad were operationalized by Kaufman et al. (2019) in the light triad Scale (LTS). This scale has demonstrated validity and reliability in numerous studies, including across various cultures and languages – such as in Poland, Serbia, Turkey, and Brazil (Gerymski & Krok, 2019; Lukić & Živanović, 2021; Ramos-Vera et al., 2023). Moreover, Lukić and Živanović (2021) found that light triad traits cannot be reduced solely to known dimensions of the Big Five or the six-factor HEXACO model – instead, they form a unique combination of altruistic orientations. In particular, the light triad shows a strong association with the Honesty–Humility dimension of HEXACO and with Agreeableness of the Big Five, yet it also contributes a distinct explanatory power for prosocial behaviors (Lukić & Živanović, 2021; Malik et al., 2020). This can be interpreted to mean that individuals with high light triad scores are naturally more sincere, humble, and cooperative, although the predictive power of these traits for certain social behaviors is moderate (Lukić & Živanović, 2021).

The correlations of the light triad with well-being and psychological functioning are mostly favorable. In Kaufman et al.'s (2019) original study, individuals scoring high on the light triad more often reported greater life satisfaction, self-esteem, authenticity, and lower egocentrism. Interpersonal relationships also appear to function better – light triad scores are positively associated with a secure attachment style, trust in people, and tolerance of different perspectives (Kaufman et al., 2019). Newer empirical studies confirm the link between the light triad and well-being. Jankiewicz and Michałek-Kwiecień (2024) found that components of the light triad correlate positively with life satisfaction and emotional intelligence, with the strongest associations for faith in humanity and humanism. An interesting exception was Kantianism, which in that study did not show a significant correlation with life satisfaction (Jankiewicz & Michałek-Kwiecień, 2024) – perhaps because treating others as ends in themselves is more of a moral principle that may not directly influence one's evaluation of their own life. However, the overall light triad score did explain a significant portion of the variance in well-being – about 23% of the variance in life satisfaction when combined with emotional intelligence (Jankiewicz & Michałek-Kwiecień, 2024). Similar results have been obtained in other populations. For example, Landa-Blanco et al. (2025), in a study of adults in Honduras, found that faith in humanity, humanism, and Kantianism significantly and positively predict the level of "flourishing," i.e. thriving – a high level of psychological well-being. A correlate of the light triad also turned out to be a sense of inner harmony and coherence: teachers scoring higher on the light triad exhibited greater inner peace of mind (Krok & Tkaczyk, 2024). Importantly, inner harmony serves as a mediator here – individuals with a "brighter" personality experience more positive emotions and inner harmony, which in turn fosters their greater compassion and empathy toward others (Krok & Tkaczyk, 2024). Numerous lines of evidence thus indicate that the light triad contributes to better psychological functioning, manifesting in greater happiness, optimism, and prosociality, as well as lower levels of psychopathological symptoms (e.g., reduced tendencies toward aggression or hostility) (Kaufman et al., 2019).

Prosocial and moral behaviors are also associated with the light triad. Individuals scoring high on the light triad achieve higher scores on measures of empathy, compassion, and altruism (Kaufman et al., 2019; Krok & Tkaczyk, 2024). This translates into concrete attitudes – for example, among teachers, the light triad was positively correlated with their self-reported compassion toward students and willingness to adopt a patient, supportive approach (Krok & Tkaczyk, 2024). Similarly, in the workplace, the light triad may foster ethical behavior and positive relationships. Malik et al. (2020) observed that employees with high light triad scores were less likely to respond to an abusive supervisory style with retaliatory behaviors. In that study, the light triad moderated the effect of an abusive boss on subordinates' "malevolent creativity" – among individuals low in light triad traits, harsh verbal aggression from a supervisor provoked creatively harmful behavior (e.g., sabotage), whereas in individuals high in light triad traits, this effect was much weaker (Malik et al., 2020). These results suggest that positive personality traits can act as a protective factor against the emergence of retaliatory and destructive intentions in adverse social environments. Similar effects have been noted in the context of criminal and antisocial behaviors: Kantianism (the light triad component related to respecting others' dignity) significantly weakens the association between psychopathy and criminal tendencies (Pechorro et al., 2025). In other words, among individuals exhibiting some psychopathic traits but simultaneously high Kantianism, the risk of antisocial behavior is lower than in psychopathic individuals lacking such "bright" moral restraints (Pechorro et al., 2025). Similarly, Castagna and Hart (2024) showed in a survey study that a high level of the light triad "neutralizes" the relationship between dark traits and the tendency toward morally evil acts. These recent findings suggest that the light triad may play an important role in counterbalancing dark tendencies, serving as a psychological buffer that protects against acting on antisocial impulses when dark traits are present.

It is worth noting that "bright" traits are not unequivocally beneficial in every context. Kaufman et al. (2019) point out that individuals focused on

others' well-being and who avoid treating people instrumentally do not show a greater inclination toward dominance, boldness, or assertiveness. They are characterized more by modesty and cooperativeness than by aggressiveness or competitiveness. In certain situations, this may translate into a reduced ability to assert themselves or defend their own interests (Kaufman et al., 2019). Nevertheless, a lack of aggressive assertiveness is often offset by other advantages of the light triad – as shown, individuals with these traits are no less effective or competent; on the contrary, they can achieve success by inspiring trust, demonstrating intellectual curiosity, and excelling in collaboration (Kaufman et al., 2019). Furthermore, light triad levels may increase with age and experience – Jankiewicz and Michałek-Kwiecień (2024) noted a positive relationship between participants' age and the intensity of light triad traits, suggesting that maturity fosters the development of humanistic attitudes. The light triad emerges as a promising concept that broadens our understanding of personality – demonstrating that alongside the dark sides, there are also bright traits that promote good, altruism, and an individual's mental health.

2. The dark tetrad – the dark traits of human personality

The dark tetrad encompasses four personality traits considered socially aversive: Machiavellianism, narcissism, psychopathy, and sadism (Gómez-Leal et al., 2024). This concept originates from the dark triad model (Paulhus & Williams, 2002), to which the latest literature has added sadism due to this trait's similarity to the other three (Gómez-Leal et al., 2024). All four components of the dark tetrad are regarded as subclinical traits – they fall within the range of normal personality variation and need not indicate a clinical disorder. Research confirms, however, that these traits clearly co-occur and share a so-called "dark core" of common antagonistic tendencies (Yusuf & Tahir, 2024). In other words, individuals who score high in these traits are marked by a lack of empathy, a tendency to manipulate, and an aggressive, self-centered social style (Gómez-Leal

et al., 2024). Within this common denominator, each trait still retains its own specificity. For instance, Machiavellianism manifests as a cynical approach toward people, a propensity for deceit, and the instrumental exploitation of others for one's own benefit (Gómez-Leal et al., 2024). Narcissism denotes an inflated sense of one's own importance, self-centeredness, a craving for admiration, and a conviction of one's superiority (Nenadić et al., 2021). Psychopathy, in turn, is characterized by emotional coldness, lack of remorse, and impulsivity, and often also by superficial charm and a tendency toward antisocial behavior (Ju et al., 2022). The sadistic tendency, for its part, involves deriving satisfaction from humiliating others and inflicting pain (Gómez-Leal et al., 2024). It is emphasized that all these "dark" traits are statistically interrelated – they are positively correlated and share a common cruelty (callousness) factor as their core (Yusuf & Tahir, 2024). In response to the development of this line of research, measurement tools covering the entire dark tetrad (such as the Short dark tetrad, SD4) have been developed (Yusuf & Tahir, 2024), reflecting the consensus that sadism should be considered alongside Machiavellianism, narcissism, and psychopathy as an additional "dark" personality trait.

The dark tetrad traits are united by interpersonal antagonism and extreme egocentrism – meaning that in Big Five terms they correspond to extremely low Agreeableness and in HEXACO terms to low Honesty–Humility (Stefanek et al., 2025). This profile translates into a selfish social strategy in which personal gain is placed above the welfare of others. Importantly, although all tetrad traits share a common "dark" element, they differ in the mechanisms by which antisocial behaviors are manifested. For example, Machiavellians pursue goals in a methodical and planned way, using persuasion or deceit, whereas psychopathic individuals tend to act more impulsively and disregard consequences – for instance, they more readily resort to threats and violence, ignoring the potential costs of their actions (Stefanek et al., 2025). Meanwhile, narcissists are driven by the need to gain admiration and affirm their own greatness, whereas sadists derive a specific gratification simply from causing others to suffer (Yusuf & Tahir, 2024). All four

"dark" tendencies thus exhibit a clear dimension of antagonism, dominance and emotional coldness. Research even suggests the existence of a general D-factor (Dark Factor) of personality underlying various dark traits (Stefanek et al., 2025). This hypothetical factor would represent a general disposition toward Machiavellian, unethical behaviors and attitudes – in other words, a readiness to prioritize one's own interest over others' welfare, with a lack of scruples and empathy (Stefanek et al., 2025).

Individuals with high levels of dark tetrad traits routinely exhibit socially harmful and antisocial behaviors. They are characterized by elevated aggression, hostility, impulsivity, as well as a propensity for lying and manipulation, as demonstrated, for instance, in a study on a sample of Serbian prisoners (Međedović, 2024). Such individuals have low empathy – especially emotional empathy – and treat others instrumentally (Gómez-Leal et al., 2024). They are also marked by a strong motivation to attain personal benefits (power, wealth, pleasure) at others' expense, coupled with a cynical disregard for moral norms (Međedović, 2024). Consequently, individuals with a dark tetrad profile more often engage in behaviors that violate social and legal norms – ranging from minor dishonest acts to serious aggressive offenses (Međedović, 2024). It has been shown that a high score in dark triad/Tetrad traits correlates with a greater tendency toward criminal acts and offenses (in both population studies and prison groups) (Međedović, 2024). Moreover, the presence of dark traits is associated with involvement in various forms of immoral behavior – studies show, for example, a positive link between the dark triad and the tendency to indulge in the so-called seven deadly sins (pride, greed, lust, envy, gluttony, wrath, and sloth) in everyday life (Brud et al., 2020). The dark tetrad profile should thus be seen as a threat to the cohesion and well-being of a community, as individuals with such traits act destructively and violate social norms.

3. Cognitive reflection and prosocial behavior

Cognitive reflection is defined as the tendency toward analytical, controlled, and conscious thought in the decision-making process (Banerjee & John, 2024). In contrast to the so-called System 1 (impulsive) – associated with fast, automatic thinking – System 2 (reflective) is characterized by engaging more conscious, "slower" deliberation (Banerjee & John, 2024). This raises the question of how cognitive reflection affects prosocial decision-making (for example, whether and to what extent someone is inclined to share resources or act altruistically in specific situations). Intuitively, one might think that thoroughly pondering a moral dilemma promotes ethical choices, yet research paints a less clear-cut picture (Fromell et al., 2020). On one hand, spontaneous emotions – such as empathy – can automatically drive one to help others, whereas excessive deliberation over costs and benefits may lead to selfish calculations (Fromell et al., 2020). On the other hand, lack of reflection can mean yielding to impulsive, primal emotions (e.g., fear or anger), which do not always result in moral action (Banerjee & John, 2024).

Experimental studies in behavioral economics provide interesting data on this issue. Ponti and Rodriguez-Lara (2015) conducted a series of dictator games in which participants decided how to split a sum of money between themselves (the dictator) and another participant (the recipient). At the same time, their cognitive reflection was measured using Frederick's (2005) Cognitive Reflection Test (CRT). The results were surprising: individuals with high cognitive reflection were not always more generous. Under standard conditions – when increasing one's own payout meant a loss for the other person – "reflective" dictators behaved more selfishly than impulsive ones (Ponti & Rodriguez-Lara, 2015). In other words, analytically minded players more coolly calculated and kept a larger share of the sum for themselves, whereas more impulsive individuals, guided by their first instinct, showed a stronger aversion to inequality and avoided taking too great an advantage over the recipient (Ponti & Rodriguez-Lara, 2015). Corgnet et al. (2015) observed

similar patterns: individuals with higher CRT scores were willing to behave altruistically only in situations where it involved little to no personal cost, whereas with significant personal cost they more often refrained from being generous to others.

On the other hand, when an experimental scenario was set up such that the dictator's generosity incurred no personal cost (e.g., additional money went to the recipient, but the dictator lost nothing), it was the reflective individuals who turned out more altruistic than the impulsive ones (Ponti & Rodriguez-Lara, 2015). Since their own payoff remained unchanged, high-reflection participants readily made choices that maximized the other party's benefit. In other words, when the dilemma of "help others or oneself" disappeared, reflective thinkers displayed generosity, whereas impulsive individuals' altruism was no longer as strong (Ponti & Rodriguez-Lara, 2015). Corgnet et al. (2015) similarly noted that reflection facilitated "mild" altruism (i.e., increasing others' gains at negligible personal cost), but was negatively correlated with altruism requiring greater sacrifice.

The above results indicate that cognitive reflection influences prosocial behaviors in a complex, context-dependent way. Whether deliberate thinking increases or decreases altruism depends on the experimental circumstances. When another person's welfare competes with one's own interest, intense analysis of the situation can paradoxically promote selfishness – a cool calculation of personal costs can stifle the spontaneous impulse of System 1 (Banerjee & John, 2024). However, when the conflict of interest disappears, reflective individuals can recognize and seize the opportunity to do good without personal losses (Banerjee & John, 2024). Thus, impulsive decision-makers may be guided by a stronger innate sense of fairness and aversion to causing harm, whereas reflective decision-makers are more task-oriented toward optimizing their own gains, insofar as the situation forces a choice between themselves and others (Ponti & Rodriguez-Lara, 2015). Indeed, a meta-analysis of 22 papers encompassing a total of 60 experiments (over 12,000 participants) found that encouraging intuitive, unchecked-by-reflection action sometimes increased altruism and other times increased selfishness – intuition promoted generosity in about 43% of studies but led to more selfish decisions in the remaining 57% (Fromell et al., 2020). The average effect was not statistically significant, underscoring that the role of intuition versus reflection depends on situational and individual factors (Fromell et al., 2020).

So, is prosociality a spontaneous, impulsive reflex, or does it require conscious control? Two opposing hypotheses exist in the literature attempting to explain this. The traditional "intuition as egoism" concept posits that humans are naturally selfish and only through reflective control can they act prosocially (Pancotto & Righi, 2021). In contrast, Rand et al. (2012) postulate that the first, impulsive reaction is often altruism learned through repeated cooperative experiences, and only cold reflective reasoning leads to "calculated greed". In other words, spontaneous generosity is possible as a default, socially shaped reflex, whereas deliberation can introduce more selfish considerations.

A growing body of research suggests that whether we act altruistically on an intuitive cognitive *nudge* (Banerjee & John, 2024) depends on our internal motivations. Grehl and Tutić (2022) observed in a field experiment that among individuals with strong prosocial values, an intuitive decision was more often helpful (reporting an error rather than ignoring it or selfishly exploiting it), whereas in individuals with a weaker prosocial orientation, impulsivity did not increase the likelihood of helping. Moreover, the overall tendency toward intuitive thinking (as measured by CRT score) correlated with a lower inclination to act altruistically in that study (Grehl & Tutić, 2022). This suggests that spontaneous generosity manifests primarily in individuals who are guided in daily life by prosocial norms and empathy, whereas in less socially attuned individuals, the first impulse tends to be selfishness. Pancotto and Righi (2021) presented similar findings, noting that only among so-called "strategic" participants – those inclined to anticipate others' behavior – did intuition promote prosociality, whereas "naive" individuals (who did not analyze others' perspectives) were impulsively selfish. In strategically minded individuals, only

reflective control restrained their default generosity (leading to calculations for personal gain), whereas in less strategic individuals, deliberation could introduce moral norms that curbed their innate selfishness (Pancotto & Righi, 2021). The authors suggest that empathy may be a key factor enabling strategic individuals to intuitively take others' welfare into account.

It is worth emphasizing that cognitive reflection is not identical to general intelligence, although it is moderately related to it. For example, it was found that students with higher math SAT scores were more generous in economic games, yet at the same time, those with higher grade point averages tended to be less generous (Ponti & Rodriguez-Lara, 2015). Other studies have noted both positive and negative correlations between cognitive test scores and giving in the dictator game (Ponti & Rodriguez-Lara, 2015). What seems crucial, then, is whether an individual spontaneously activates norms of cooperation or instead leans toward competition – this highlights the importance of integrating research on cognitive processes with the analysis of moral values and the personality characteristics of the decision-maker.

Cognitive reflection combined with high empathy and prosocial values (a light triad profile) will thus result in mature, deliberate altruism. With reflection, an individual will find the most effective ways to support others, acting in accordance with their principles (Gloster et al., 2020). By contrast, cognitive reflection in a person devoid of empathy (a dark tetrad profile) may only make them a more cunning egoist or manipulator – the lack of emotional moral restraints means that analytical abilities then serve to pursue antisocial goals (Lehmann et al., 2022).

4. Generosity, altruism, and "life-givingness" – the significance of prosocial attitudes for health and life

Generosity, defined as the tendency to share one's resources with other people, is one of the most readily observable manifestations of prosocial attitudes. One social group characterized by exceptional in-

terpersonal generosity and a high level of empathy are, for instance, voluntary blood donors. Research indicates that people who donate blood regularly have highly developed empathy, both emotional and cognitive (Omyan et al., 2023). For example, volunteers who donate blood for altruistic reasons score significantly higher on a scale of empathic concern than those who are motivated primarily by their own health considerations (Omyan et al., 2023). Altruistic donors also show greater sensitivity to others' pain and suffering – these individuals focus more keenly on cues indicating pain in other people (Omyan et al., 2023). The ability to empathize and understand others' perspectives (affective and cognitive empathy) thus turned out to be among the key predictors of altruistic generosity and the propensity to help through blood donation.

Moreover, analysis of blood donors' personality traits suggests that certain "bright" traits (such as honesty, modesty, or prosociality) encourage engagement in this kind of activity. In a study using the HEXACO personality model, it was found that a high level of Honesty–Humility was most strongly associated with the intention to donate blood in the future (Balaskas et al., 2024). This trait reflects a tendency toward honesty, a non-selfish orientation, and altruism – its significant relationship with willingness to give confirms that individuals with high personal ethics and compassion are more likely to engage in voluntary blood donation (Balaskas et al., 2024). Other "positive" personality traits, such as high Agreeableness or Emotionality, can also promote donating, though their influence is often indirect and context-dependent (for example, depending on how the message encouraging donation is framed) (Balaskas et al., 2024).

It is worth noting that dark personality traits do not categorically exclude someone from participating in prosocial forms of help. A study of Polish blood donors found a positive relationship between the level of narcissism (one component of the dark triad/Tetrad) and the empathy score in these individuals (Kosowski, 2021). This suggests that some donors with narcissistic tendencies may engage in giving blood for self-presentational motives or social rec-

ognition – implying that narcissists can undertake prosocial actions if doing so yields benefits such as others' approval (Kosowski, 2024).

The motivations that lead people to donate blood are largely prosocial. Numerous studies indicate that the most reported reasons include an altruistic desire to help, a sense of civic duty, and social influences (Balaskas et al., 2024). Altruism here is defined as the selfless desire to save the health and lives of others. Social responsibility refers to a sense of duty toward the community and a need to contribute to the common good, while influence of one's surroundings refers to inspiration drawn from one's environment (e.g., family or peer example, group initiatives, social campaigns) that encourages blood donation (Balaskas et al., 2024).

All these factors affect the continuation of blood donation activity by influencing the individual's internal motivation system. Studies show that it is altruism and a sense of social responsibility that become the key reasons for continued blood donation (Balaskas et al., 2024). In other words, for an occasional donor to become a regular one, they must perceive a deeper meaning in their charitable activity. A study on medical students examined the impact of altruism and a sense of meaning in life on the willingness to donate blood. It turned out that altruism alone, as self-reported, did not directly translate into a greater willingness to donate unless accompanied by a strong sense of life meaning (Gheorghe et al., 2024). Only when altruistic motivations were coupled with the belief that donating blood gives life a deeper meaning did the propensity to be a donor significantly increase in the study group (Gheorghe et al., 2024). This suggests that campaigns promoting blood donation among youth and students should appeal not only to pure altruism but also highlight the personal significance and satisfaction derived from this form of social engagement.

Donating blood yields tangible benefits not only for recipients but also for the donors themselves, in psychological and emotional domains. Engaging in such altruistic activity can function as a psychological buffer against negative states – people who help others feel a greater sense of agency and meaning, which reduces their feeling of helplessness in the face of life crises (Gasparovic Babic et al., 2024).

In the context of disasters or threatening situations, the ability to donate blood provides an individual with a concrete way to support those in need, thereby lowering the level of anxiety and depression stemming from helplessness (Gasparovic Babic et al., 2024). Contemporary studies thus portray the typical voluntary blood donor primarily as a person with a "bright" set of traits: empathetic, altruistic, and prosocially motivated.

The empathy, altruism, and prosocial attitudes also translate into better quality family relationships – as confirmed by both research and clinical observations. In a context other than blood donation, Ryś (2006) emphasizes that a truly engaged, loving marital relationship is creative and "life-giving" in nature – it fosters altruistic attitudes, prosociality and, both literally and metaphorically, fertility. A close bond founded on love and kindness yields an atmosphere filled with joy, creativity, and a willingness to sacrifice for the other person (Ryś, 2006). Such a positive relationship not only has a greater chance of resulting in offspring in the biological sense but also creates optimal conditions for raising children together in a spirit of empathy and goodness, which in turn translates into the functioning of the individual. In other words, altruism in the family creates a climate conducive to the mental health of its members and to harmonious development, which can be metaphorically described as "fertility" – understood more broadly than just biologically, as the fruitfulness of life together. This "life-givingness" of prosocial attitudes is evident, for example, in the way good deeds and emotions radiate to others in the vicinity, producing a cascade effect: Fowler and Christakis (2010) found that being the recipient of an act of kindness increases the likelihood that we ourselves will become altruistic toward other people in turn. In this way, one kind person can improve the well-being of many others – like a cascade effect in prosocial behavior.

5. Discussion

The light triad is associated with a positive orientation toward others, empathy, and a propensity for prosocial actions, as well as greater well-being and life satisfaction (Kaufman et al., 2019). By contrast, the dark tetrad (Machiavellianism, narcissism, psychopathy, sadism) is characterized by egocentrism, manipulation, and hostility, resulting in aggressive, antisocial behaviors and difficulties in forming healthy relationships (Gómez-Leal et al., 2024). These are thus two opposing poles of personality traits that influence an individual's social functioning. The literature review confirms that "bright" traits foster altruism and generosity, whereas "dark" traits are marked by a lack of empathy and an instrumental treatment of other people.

Cognitive reflection proved to be an important moderator of prosocial behaviors. Contrary to intuitive expectations, reflective thinking does not always amplify altruism – it can both diminish it in situations of conflict of interest (when analytical deliberation directs attention to one's own gains) and enhance it when helping others does not incur personal costs (Ponti & Rodriguez-Lara, 2015). This means that the most ethical decisions are made by those who combine prosocial values with reflection – heart and mind must work together to choose good in a lasting and effective way.

Prosocial behaviors, like generosity, are influenced by personality traits as well as cognitive factors and social context. Generosity is strongly linked to empathy and a communal orientation, as confirmed in studies of voluntary blood donors (Kosowski, 2024). An altruistic lifestyle also helps maintain health and well-being – people who help others tend to be happier and healthier, deriving satisfaction from being "good." On the other hand, dark tetrad traits may indirectly contribute to health problems by causing stress, conflict, and social isolation. In the context of family life, prosociality serves as a "glue" for relationships, facilitating the building of lasting bonds based on trust and mutual support, which translates into better child-rearing and the overall well-being of the family. In contrast, egotism and lack of empathy can disrupt family functioning, diminishing its "life-givingness" – both emotionally and literally.

6. Practical implications

The findings of the discussed research have important practical significance for many areas of social life. In upbringing and education, they highlight the need to cultivate humanistic and empathetic attitudes in young people – preventive programs in schools could develop in children a belief in the goodness of others, respect for the dignity of every person, and the habit of treating others as ends in themselves (practicing Kantianism in daily life). At the same time, it is worthwhile to teach reflective thinking about the consequences of one's actions – so that impulses (e.g., aggression or greed) are filtered through reason and values. Training cognitive skills, such as solving moral dilemmas or analytical thinking about social problems, could help young people make more ethical decisions daily.

In the realm of public health, findings from altruism research suggest that it is worthwhile to promote prosocial activities. For example, programs promoting volunteerism, neighborly help, or donations (of blood, bone marrow, etc.) can not only bring obvious benefits to the recipients of that help but also improve the mental health of the volunteers themselves. The slogan "Helping others, you also help yourself" has solid scientific foundations. Healthcare services, non-governmental organizations and social policy institutions can encourage altruistic activity as a form of preventing isolation – for example, among the elderly or those experiencing crises. At the individual level, therapists and counselors can suggest engaging in helping others as one tool for improving mood and one's sense of life meaning.

In organizational and work contexts, the implication is to appreciate the role of character traits in selecting staff and managerial personnel. Individuals with strong dark tetrad tendencies can create a toxic atmosphere in the workplace (e.g., bullying, manipulation, lack of cooperation); therefore, recruitment and employee evaluation processes might

incorporate tools to identify such traits – especially for positions requiring trust and teamwork, or in professions of public trust. Conversely, promoting humanistic values in organizational culture (for example, through codes of ethics, empathy training for medical, caregiving, or educational staff) can translate into better service quality and lower staff turnover (because work aligned with prosocial values provides greater satisfaction). Research findings on reflection further suggest that in decision-making teams it is beneficial to combine different thinking styles – individuals who make quick, intuitive decisions can be balanced by those who contribute analysis and deliberation. Cognitive diversity within a team may facilitate decision-making that is both socially just (intuitive morality) and effective (reflective calculation).

In family life and counseling, the discussed results underscore the importance of a culture of dialogue, empathy and altruism at home. Parents should be aware that their own attitude models prosocial behavior for their children. A family's joint engagement in, for instance, charitable activities, intergenerational volunteering, helping the elderly, or simply showing one another, daily kindness builds the family's emotional capital, which translates into the mental health of its members. Family counseling centers could work on developing skills in perspective-taking, respect-based communication, and the capacity to forgive – which, as noted by Ryś (2006), are signs of social maturity and sources of altruism in relationships. Such interventions may reduce the risk of domestic violence and improve the quality of relationships, which in turn impacts physical health (e.g., less stress, better sleep, lower risk of stress-related illnesses).

Investing in the bright side of personality – through parenting, education and organizational culture – thus has the potential to yield multidimensional social and health benefits. Understanding the role of reflection, for its part, teaches us that we should nurture not only a "good heart," but also wisdom in action, so that altruism is effective, enduring and full of zeal to help.

7. Directions for future research

The field of research on the light triad and dark tetrad is relatively new and is developing rapidly. Adding the context of cognitive reflection and generosity brings up many questions that require further exploration. It is worth conducting longitudinal studies to examine the stability of bright and dark traits over the lifespan and their long-term consequences. Do young adults with high light triad scores maintain these attitudes into middle age and old age? How does this translate into their life achievements, quality of relationships or health? Similarly, do dark tetrad traits mellow with age (e.g., under the influence of emotional maturity), or do they persist and even deepen as antisocial successes are repeated? These questions require detailed answers.

An intriguing direction is also to understand the neurobiological mechanisms underlying these traits. In this context, neuroimaging studies have emerged suggesting that individuals with psychopathic traits show differences in amygdala and prefrontal cortex activity (which is associated with weaker processing of signals of fear and empathy). Meanwhile, altruism has been linked to the functioning of the reward system (dopamine release when helping) and the hormone oxytocin. Future studies could further explore how and whether, for example, psychological trainings (compassion meditation, cognitive training) can modify these neural patterns.

Equally interesting is the direction of studying the cultural and environmental context and its influence on the development of light triad and dark tetrad traits. How do trauma, being raised in adverse conditions or conversely – being raised with certain values – influence the formation of these traits? Do collectivist societies (which emphasize group harmony) have a statistically higher population level of the light triad than individualistic societies? At the same time, following the findings of Weiss-Sidi and Riemer (2023) it becomes apparent that cultural context should be considered when analyzing altruism, reflection, or generosity. Understanding these determinants can help in creating better preventive programs.

In the context of cognitive reflection, future research could experimentally test whether training in reflection (through metacognition or philosophical analysis of moral dilemmas) affects increases in prosociality. Or perhaps it is more effective to strengthen intuitive empathy (e.g., through role-playing or contact with those in need) and only then add a reflective component? In other words, what training sequence best builds stable altruism: heart before mind, or mind before heart?

Another interesting area is examining the impact of biological and evolutionary factors. An evolutionary psychology perspective suggests that certain "dark" traits may have been adaptive in a fast life-history strategy context needed for survival (shorter expected lifespan, uncertainty – hence promoting aggression and reproduction in the here-and-now). Conversely, "bright" traits would favor a slower and safer strategy (longer-term investment in relationships and offspring). Future research could test these hypotheses, for example by examining the relationship between indicators of environmental uncertainty (poverty, threat) and the development of light triad and dark tetrad traits in populations.

Finally, attention should also be given to intervention studies: once someone with high dark tetrad tendencies is identified, it would be useful to examine whether effective methods exist to modify such traits (e.g., through therapy, empathy training, or biofeedback). Similarly, can the light triad be deliberately strengthened – for instance, through public campaigns or "humanism training" programs for leaders in organizations – to counteract the dark triad in management? Such applied research would be extremely valuable from a practical standpoint.

Conclusions

Human beings carry within them both the capacity for great goodness and, unfortunately, the potential to cause harm – light and darkness interweave in human nature. Psychology, through the concepts of the light triad and dark tetrad, allows us to name and measure these opposing tendencies. Identifying the "bright" traits (faith in humanity, humanism, Kantianism) and the "dark" traits (Machiavellianism, narcissism, psychopathy, sadism) provides a framework for understanding why some people spontaneously do good, while others pursue their goals "over dead bodies" without remorse.

However, description alone is not enough – the key question is: what can be done for light to triumph over darkness? The review of research points to several important elements. First, cultivating prosocial attitudes from the earliest years – in family and school – can instill an empathic approach, trust and an ethic of care, which serve as a counterweight to any potential dark tendencies. Second, cognitive reflection, properly guided (in combination with moral values), becomes a tool for making prudent and good decisions. Therefore, education and learning should promote both sensitivity of the heart and inquisitiveness of the mind – so that people can feel others' pain and identify with it (taking another person's perspective), while also pondering the consequences of their actions. Third, building a culture of kindness and volunteerism in society brings tangible benefits not only to the beneficiaries of help, but also to the helpers themselves and to public health at large. Altruism is contagious and has the potential to improve quality of life on many levels.

It is altruism, empathy, and generosity that give life a special "fruitfulness" – making it richer in meaning, relationships, and positive influence. A personality full of humanism and faith in people yields a kind of chain of good: it builds happier families, healthier communities and a more benevolent world. In contrast, dark traits, though sometimes spectacular in individual "successes," in the long run render relationships barren and destroy trust, leading to enormous social and personal costs.

The conclusion, therefore, is that investing in the bright side of human nature is crucial for the well-being of both individuals and entire societies. Scientific understanding of these issues gives us the tools to wisely support the good – through educational, therapeutic, and social policy interventions. The light triad reminds us that within every person lies the potential for everyday saintliness, while the dark tetrad warns us of the price we pay for succumb-

ing to our darkest impulses. As we go through life, we can choose which of these voices to feed – and may both knowledge and heart guide us toward those choices that multiply goodness, health, and "life-givingness" within us and around us.

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