



UNIVERSITY OF PADOVA

Department of Developmental Psychology and Socialisation

Bachelor's Degree Course in Psychological Sciences and Techniques

Final dissertation

“Prosocial consciousness: can meditation and a plant-based diet make you a better person?”

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Academic Year 2022/2023

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Introduzione

Il concetto di prosocialità, o la volontà di aiutare e cooperare con gli altri, è un importante aspetto del comportamento umano che è stato ampiamente studiato in psicologia e sociologia. Essa comprende una serie di comportamenti come l'empatia, la gentilezza, l'altruismo e la cooperazione, che sono essenziali per il benessere individuale e della società. La prosocialità rappresenta anche un elemento importante all'interno del quadro dello sviluppo umano. Si riferisce alla propensione di un individuo ad agire in modo altruistico, per il bene comune, piuttosto che perseguire i propri interessi egoistici. Uno stile di vita sano e consapevole può influenzare positivamente la prosocialità di un individuo, e due aspetti chiave in questo contesto sono la meditazione e l'alimentazione.

La meditazione è una pratica antica che mira ad allenare l'attenzione e sviluppare una maggiore consapevolezza di sé e degli altri. Numerosi studi hanno evidenziato i benefici della meditazione sulla salute mentale e il benessere psicologico, tra cui effetti positivi sull'empatia e la prosocialità. La meditazione, attraverso l'introspezione, favorisce l'apertura e la compassione verso gli altri, potenziando così la predisposizione a fornire aiuto e supporto.

Inoltre, scegliere una dieta a base vegetale potrebbe avere un impatto significativo sulla prosocialità. Adottare questo tipo di dieta, che limita o elimina il consumo di prodotti animali, è spesso associato a una maggiore sensibilità nei confronti degli esseri viventi e dell'ambiente. Scegliere una dieta a base vegetale contribuisce a ridurre la sofferenza degli animali e a limitare l'impatto ecologico, creando così potenzialmente una connessione più forte con gli altri esseri viventi e maggiore prosocialità.

L'obiettivo di questa tesi è esaminare le relazioni tra meditazione, dieta e prosocialità, cercando di comprendere come possano influenzare il comportamento, i valori e la mentalità di un individuo. Attraverso una revisione della letteratura scientifica, cercheremo di analizzare gli effetti della meditazione e di una dieta a base vegetale sulla prosocialità. L'obiettivo è verificare se la meditazione e la dieta possono contribuire a rendere una persona più attenta agli altri e più orientata verso il bene comune. Inoltre, cercheremo di comprendere le implicazioni che queste pratiche possono avere nel contrastare la sofferenza degli animali e la crisi climatica attuale.

Il primo capitolo riguarda il concetto di prosocialità, inclusa la sua definizione e il suo significato. Vengono esplorati i fattori che influenzano la prosocialità, come l'empatia, il

ragionamento morale e le norme sociali. Inoltre, vengono esaminate le teorie evolutive della prosocialità e di alcuni suoi importanti predittori.

Il secondo capitolo si focalizza sulla meditazione e la sua relazione con la prosocialità. Vengono presentati diversi tipi di meditazione, suddivisi secondo una possibile classificazione, e i loro effetti sul comportamento prosociale insieme ai loro limiti e potenziali effetti negativi. Alla fine del capitolo, viene sottolineata l'importanza dell'etica nella pratica meditativa attraverso l'analisi di alcuni dei principali principi della tradizione indiana dello Yoga.

Il terzo e ultimo capitolo riguarda la prosocialità e l'alimentazione. Viene esplorata l'idea di una dieta prosociale e vengono affrontate le dinamiche psicologiche che influenzano le scelte e le attitudini nei confronti del consumo di carne. Si discute il concetto di "meat paradox" e vengono esplorate le possibili strategie per promuovere scelte alimentari prosociali. Il capitolo mette anche in luce il concetto di *ahimsa* (non violenza) e la sua rilevanza nel favorire un senso di cura riguardo le proprie scelte alimentari. Infine, viene presentato uno studio particolare sul potenziale degli stimoli ambientali come mediatori tra le scelte alimentari e la prosocialità.

Introduction

The concept of prosociality, or the willingness to help and cooperate with others, is an important aspect of human behavior that has been widely studied in psychology and sociology. It encompasses a range of behaviors such as empathy, kindness, altruism, and cooperation, which are essential for the well-being of individuals and society. Prosociality also represents an important element within the framework of human development. It refers to an individual's propensity to act in an altruistic manner, for the common good, rather than pursuing their own selfish interests. A healthy and conscious lifestyle can positively influence an individual's prosociality, and two key aspects in this context are meditation and diet.

Meditation is an ancient practice aimed at training attention and developing a greater self-awareness and awareness of others. Numerous studies have highlighted the benefits of meditation on mental health and psychological well-being, including positive effects on empathy and prosociality. Meditation, by means of introspection, promotes openness and compassion towards others, thus enhancing the predisposition to provide assistance and support.

Additionally, choosing a plant-based diet might have a significant impact on prosociality. Adopting this type of diet, which limits or eliminates the consumption of animal products, is often associated with increased sensitivity towards living beings and the environment. Choosing a plant-based diet contributes to reducing animal suffering and limiting ecological impact, thus potentially creating a stronger connection with other living beings and hopefully increasing prosociality.

The aim of this thesis is to examine the relationships between meditation, diet, and prosociality, seeking to understand how they could influence an individual's behavior, values, and mindset. Through a review of scientific literature, we will try to analyze the effects of meditation and a plant-based diet on prosociality. The objective is to verify if meditation and diet can contribute to making a person more attentive to others and more oriented towards the common good. Furthermore, we will seek to understand the implications that these practices can have in contrasting animal suffering and the current climate crisis.

The first chapter deals with the concept of prosociality, including its definition and meaning. The factors that influence prosociality, such as empathy, moral reasoning, and social norms,

are explored. Furthermore, the evolutionary theories of prosociality and some of its main predictors are examined.

The second chapter focuses on meditation and its relationship with prosociality. Different types of meditation, divided by a proposed classification, and their effects on prosocial behavior are presented together with its limits and potential negative effects. At the end of the chapter, the importance of ethics in meditation practice is emphasized by an analysis of some of the main principles of the Indian Yogic tradition.

The third and final chapter concerns prosociality and diet. The idea of a prosocial diet is explored, and the psychological dynamics that influence choices and attitudes toward the consumption of meat are addressed. It discusses the "meat paradox" and explores interventions aimed at promoting prosocial dietary choices. The chapter also highlights the concept of ahimsa (non-violence) and its relevance in fostering a sense of caring in relation to diet. Finally, a particular study on the potential of environmental cues as a mediator between dietary choices and prosociality is presented.

CHAPTER 1: Prosociality

1.1 Understanding Prosociality

Psychology often uses words that are defined as “umbrella terms” to define a large range of items that fall under the same category. Prosociality is one of those. On the Merriam – Webster dictionary we find this definition for the term *prosocial*: “intended to help or benefit another person or group” and also “relating to or promoting behavior that benefits others or society” (Merriam-Webster. (n.d.). Prosocial. In *Merriam-Webster.com dictionary*. Retrieved October 27, 2023, from <https://www.merriam-webster.com/dictionary/prosocial>).

According to Eisenberg and Mussen (1989), prosocial behavior refers to acts carried out with the aim of benefiting or positively impacting others' well-being. In their book “The roots of prosocial behavior in children” (Eisenberg & Mussen, 1989), they highlight the relevance of understanding the underlying psychological processes that lead to such behaviors.

Given the broad nature of the definition, researchers think it is essential to share a more detailed meaning (Pfattheicher et al., 2022; Stukas & Clary, 2012).

In researching for a better understanding, it seems crucial at least to differentiate between: *prosocial behavior*, *helping behavior*, and *altruism* (Dick, 2012). These three terms can be seen as layers of the same principle. Indeed, while all acts of altruism and helping behavior can be seen as prosocial behaviors, not all prosocial behaviors necessarily involve altruism or helping behavior. In fact, prosocial behavior encompasses a broader range of actions aimed at benefiting others or society as a whole, whereas helping behavior involves specific actions to assist those in need. And finally, altruism is a subset of helping behavior that is driven solely by empathy and compassion, a voluntary, costly behavior motivated by the desire to help another individual without any personal gain or expectation of reciprocity.

Numerous psychological mechanisms have been proposed to explain why individuals engage in prosocial behavior. These mechanisms include empathy, moral reasoning, social norms, and self-interest, among others. By understanding these underlying processes, researchers can further explore the origins and variability of prosocial behavior across individuals and contexts.

1.2 Empathy, Moral Reasoning, and Prosociality

Studies have shown that empathy, the ability to understand and share others' feelings, plays a critical role in motivating prosocial behavior (Batson, 1987). The empathy-altruism hypothesis suggests that individuals experiencing empathic concern are more likely to engage in selfless helping behaviors (Batson et al., 1991). Also, moral reasoning and prosociality are closely related. Empathy can influence moral reasoning by increasing sensitivity to ethical dilemmas. Individuals who feel empathic towards those in need are more likely to engage in behaviors that align with their moral values (Eisenberg & Mussen, 1989). Eisenberg and colleagues emphasized the importance of moral reasoning in predicting prosocial behavior, highlighting the impact of personal values and moral principles on individuals' decision-making processes. Moreover, they developed a framework to assess prosocial reasoning in children, considering factors such as empathy, perspective-taking, and moral judgment (Eisenberg et al., 1992). Furthermore, Hoffman's Developmental Theory of Empathy suggests that empathy develops in stages and is influenced by cognitive understanding, moral reasoning, and socio-cultural factors (Hoffman, 2000). Hoffman suggests that empathy begins to emerge in infants, as they start to show signs of emotional contagion, which is the ability to sense and mirror the emotions of others. As children grow older, their empathy becomes more sophisticated and includes cognitive and emotional components. Initially, empathy is dominated by the affective dimension, while the cognitive dimension has a very limited role. Over time, the cognitive component becomes increasingly important and integrates with the affective one, allowing for the development of more complex forms of empathy. In addition to the affective and cognitive components, Hoffman argues that there is also a motivational component in empathic experience, which drives people to behave helpfully towards others. Hoffman also proposed several factors that influence the development of empathy. These factors include parental warmth, responsiveness, and modeling of empathic behavior. He argued that children who experience consistent empathy and emotional support from their caregivers are more likely to develop higher levels of empathy themselves. When individuals reason and make moral judgments about a situation, they are more likely to engage in prosocial acts that align with their moral values. Individuals who prioritize the welfare of others and believe in principles like fairness, compassion, and justice are more likely to engage in prosocial behaviors (Graham et al., 2013).

1.3 Social Norms and Prosociality

Social norms play a key role in shaping and regulating prosocial behavior. Cialdini (1990) explored the power of descriptive norms, demonstrating how individuals are influenced by the behaviors of others in their social environment. On the other hand, injunctive norms focus on societal expectations and moral obligations, encouraging individuals to engage in prosocial acts (House, 2018). For example, the norm of reciprocity is a social norm that implies that individuals should return favors and treat others in a similar manner as they have been treated. It suggests that when someone does something positive for us, we feel obliged to return the favor or express gratitude (Gouldner, 1960). Understanding these normative influences allows researchers to examine how cultural and contextual factors shape prosocial behavior. From a Socio-Psychological perspective, the norm of reciprocity theory suggests that individuals engage in prosocial acts with expectations of receiving benefits in return in the future (Trivers, 1971). So, this principle of reciprocal altruism might explain how cooperation and prosociality can evolve even among unrelated individuals, as long as there is potential for future reciprocation. Rand, Greene, and Nowak (2012) conducted a study to investigate the influence of social norms on prosocial behavior. Their findings indicate that prosocial behavior can be facilitated by social interactions and cultural norms that promote cooperation. The article sheds light on the impact of cultural and environmental factors on the evolution of prosociality in various societies (Rand et al., 2012).

1.4 Evolution and Prosociality

The social exchange theory (Homans, 1961) suggests that individuals engage in prosocial behavior when the benefits outweigh the costs. In line with this, Evolutionary Social Psychology proposes the kin selection theory (Hamilton, 1964). Kin selection theory posits that individuals are more likely to engage in prosocial behavior towards close relatives, as this increases the chances of their shared genetic material being passed on to subsequent generations. This theory suggests that the evolution of prosocial behavior could be explained by an individual's desire to enhance the reproductive success of their kin.

Evolutionary psychology posits that prosociality provides adaptive advantages, thereby increasing an individual's fitness (Tooby & Cosmides, 1992). Tooby and Cosmides conducted experiments that showed humans were more successful at solving logical reasoning problems

when they were presented in the context of a social transaction. This led them to conclude that humans have specialized mental capacities for understanding and analyzing the costs and benefits of social relationships. These results align with the general principles of Hamilton's model of natural selection, which suggests that encoding mechanisms that are vigilant in assessing the costs and benefits of social transactions are favored by evolution. Based on this research, it is proposed that humans have a general heuristic, or mental shortcut, for detecting who possesses what resources and whether they are likely to use them cooperatively or competitively. This heuristic is activated whenever a social transaction is about to occur. In their own research, the authors aim to demonstrate this heuristic in cases where individuals make decisions about using their resources to help others who may vary in kinship. Furthermore, an interesting study shows how people would be more likely to help people who are closely related to them but only if the chances of survival and the overall health of the helped individuals are high (Burnstein et al., 1994).

Another fundamentally evolutionary theory is Tomasello's Theory of Shared Intentionality. It suggests that humans possess an innate inclination for cooperating and engaging in joint activities which contributes to the development of prosocial behavior. According to his book "A Natural History of Human Thinking" (2014), human thinking evolved from individual intentionality as a way to solve problems of social coordination and collaboration. This evolution occurred in two steps: from individual intentionality to joint intentionality, and then from joint intentionality to collective intentionality. This unique cognitive ability to share intentions and goals with others could have been crucial for the development of cultural learning, language, and cooperative behaviors. According to Tomasello, shared intentionality is a key factor in the development of prosociality in humans. By engaging in joint attention, collaborative activities, and shared goals, individuals can understand and coordinate their behaviors with others. This shared intentionality leads to the development of cooperative behaviors, empathy, and later to a sense of fairness and justice. Prosocial behaviors such as sharing resources, helping others in need, cooperating in group activities, and comforting individuals in distress are seen as fundamental for building and maintaining social connections, fostering trust, and facilitating social cohesion, suggesting that our unique cognitive capacities for joint attention, communication, and cooperation have played a crucial role in our evolution as a highly cooperative species (Tomasello, 2014).

Finally, Fehr and Fischbacher (2003) provide a comprehensive review of the evolutionary psychology perspective on human altruism and prosocial behavior. They argue that human

societies exhibit a high level of cooperation between genetically unrelated individuals in large groups, which is not commonly observed in the animal kingdom. Particularly, *strong reciprocity*, is the key factor that sets humans apart from other animals. It combines rewarding others for cooperative behavior (*altruistic rewarding*) and imposing sanctions on norm violators (*altruistic punishment*) without any individual benefit. This powerful form of cooperation extends beyond reciprocal altruism and reputation-based cooperation. The authors highlight the importance to further study the interaction between selfish individuals and strongly reciprocal individuals in understanding human cooperation and identify conditions that trigger cooperation breakdown and conditions that ensure widespread cooperation. Furthermore, they state that the study of human altruism has made significant progress in the past decades, with research showing that repeated interactions, reputation-formation, and strong reciprocity play a major role in human behavior, but that current gene-based evolutionary theories cannot explain all patterns of human altruism. In sum, the article synthesizes various theoretical frameworks and empirical evidence to propose that the evolution of prosociality might be explained by both self-interest and social norms. It presents a holistic view of prosocial behavior from an evolutionary perspective, pointing towards the importance of both theories of cultural evolution as well as gene-culture co-evolution in trying to explain human altruism (Fehr & Fischbacher, 2003).

1.5 Integrative Approach

The Integrative Approach aims to bring back the discussion to two main psychological factors: empathy and arousal. This approach suggests that empathic emotional distress can motivate individuals to help or support others. When experiencing empathy, people may feel a sense of concern and a desire to alleviate the suffering or distress of others (Batson et al., 1981). This can activate the body's stress response system, mobilizing energy and attention, resulting in increased arousal levels which would be decreased by one's direct intervention. Overall, empathy and arousal can interact in various ways, with empathy influencing arousal levels and arousal potentially impacting how individuals experience and respond to empathy. The specific nature and strength of this relationship may vary depending on the context, individual differences, and the specific emotional experiences involved.

The scientific articles cited in this chapter represent a fraction of the extensive research conducted in this field. Prosocial behavior continues to be a fascinating area of study, as

researchers strive to uncover the intricacies involved in promoting and fostering prosocial attitudes and actions within individuals and societies.

1.6 Prosociality predictors

In the recent pages, we have reviewed the main psychological aspects related to prosocial behavior. However, a comprehensive analysis must necessarily consider a constellation of internal and external factors. This includes a mix of different elements, such as biological influences (genetic, neurological, and biochemical), as well as environmental and experiential factors. For example, some studies have found that good mood, positive emotions, or even high blood-sugar level can increase the chances of acting in a prosocial manner (Aknin et al., 2018; Xu et al., 2012, 2014).

Prosociality has been shown to contribute to better mental and physical health for individuals and communities. Researchers link prosociality to intentions to receive COVID-19 vaccinations and engage in preventive behaviors (Sachs et al., 2022). They also note the positive impact of prosocial behaviors on overall well-being (Hui et al., 2020). Given the importance to develop and implement a strategy for promoting prosociality, Kubzansky, Epel, and Davidson (2023) recommend developing an epidemiology of prosociality. This would involve researching the antecedents and consequences of prosociality, identifying characteristics that promote prosocial values and behaviors, and understanding the specific pathways that link prosociality to individual and community health. They call for efforts to modify prosociality to occur at multiple levels, considering cultural values, social norms, and upstream structural factors that influence prosocial behaviors. By emphasizing the importance of consistent and nurturing adult-child positive relationship, emotional understanding and empathy, consideration of consequences of one's behavior, modeling and verbal explanations, opportunities for helping others, and non-violent conflict resolution, caregivers can play a significant role in fostering prosocial development in children. These conditions create a nurturing environment that supports the growth of empathy, compassion, and moral reasoning in children (Honig, 1982).

So, while parental socialization plays a role in the development of prosocial behavior, school experiences also have an important influence. A positive school climate, characterized by trusting and caring relationships, student support, and opportunities for autonomy, has been found to be associated with prosocial behavior in adolescents (Biao et al., 2023). In the

forementioned study, gratitude is considered a mediating factor between school climate and prosocial behavior as it fosters feelings of being protected, accepted, and valued by others. Gratitude has a positive relationship with prosocial behavior, as it serves as a moral barometer, motive, and reinforcement for engaging in prosocial actions. Since school represents such an important part of the life of children and adolescents, implementation of effective programs promoting prosociality should be fostered. One such school-based intervention has been the focus of this study (Caprara et al., 2015) which investigated the effectiveness of a school-based intervention program called CEPIDEA. The program incorporated five components that focused on the personal determinants of prosocial behavior during adolescence (sensitization to prosocial values, emotion regulation skills, development of empathy, perspective-taking skills, interpersonal-communication skills, and precursors of civic engagement). The study assessed students from the intervention and control schools at three points in time. The results showed that the intervention group exhibited an increase in prosocial behavior, interpersonal self-efficacy beliefs, and agreeableness, along with a decrease in physical aggression, compared to the control group. Additionally, the intervention group achieved higher grades at the end of middle school. The findings also revealed that adolescents with lower normative development of prosocial behavior, low initial levels of agreeableness, and high initial levels of physical aggression benefited the most from the intervention. Furthermore, the increase in prosocial behaviors mediated the decline in verbal aggression among adolescents who attended the intervention. These results suggest that interventions targeting prosocial behaviors can support positive outcomes and redirect negative trajectories of functioning. The study highlights the importance of implementing interventions in real-life contexts, with a focus on processes rather than outcomes. By gradually incorporating the program into routine educational practices, the intervention addressed the major personal determinants of prosocial behavior during adolescence. The enhancement of interpersonal self-efficacy beliefs among adolescents is encouraging, as it suggests that they can actively contribute to their own development. The findings also emphasize the significance of empathic peer connections among early adolescents in facilitating positive pathways and counteracting negative dispositions over time. Enrichment environments that provide safety, appropriate opportunities, and supportive networks for adolescents are crucial in promoting positive behavioral patterns.

Moreover, research has shown that exposure to nature can enhance social connections. People who have interactions with nature, whether they are brief or long-lasting, tend to be more

interested in others, experience greater social cohesion, and exhibit more prosocial behavior like caring for and assisting others. This effect is partly due to the awe-inspiring and beautiful qualities of nature (Goldy & Piff, 2020). Future research should continue to explore how interacting with nature can contribute to efforts to address climate change, as well as the potential negative impacts of urbanization and decreased nature exposure. Further study in this area will deepen our understanding of the relationship between humans and the natural environment and the benefits that can be derived from it.

In conclusion, fostering prosocial development in children is a collaborative effort that involves caregivers, schools, communities, and society at large. Creating inclusive and supportive environments, implementing social-emotional learning programs in schools, and encouraging community service and volunteering opportunities are all ways in which broader societal factors can contribute to the development of prosocial behaviors in children. By providing children with the necessary conditions for positive development, we can cultivate a generation of individuals who are empathetic, compassionate, and committed to improving the well-being of others and the world around them.

Having said that, the last decades have seen an exponential rise of both public and scientific interest in two specific areas of human behavior: meditation and spirituality in general, as well as the choice to follow a plant-based diet. Their connection with prosociality has been examined by many studies which have already shown interesting potential.

CHAPTER 2: Meditation and prosociality

2.1 What is meditation?

The word "meditation" originated from the Latin word *meditari*, which means "to think, to ponder, or to contemplate." The Latin term was derived from the Proto-Indo-European root word *med-*, which signifies "to measure" or "to take appropriate measures." Over time, *meditari* developed in meaning to include the idea of deep thought and reflection.

The APA dictionary of psychology gives this definition:

Meditation: *n.* profound and extended contemplation or reflection in order to achieve focused attention or an otherwise [altered state of consciousness](#) and to gain insight into oneself and the world. Traditionally associated with spiritual and religious exercises, meditation is now also used to provide relaxation and relief from stress; treat such symptoms as high blood pressure, pain, and insomnia; and promote overall health and well-being.

(APA dictionary. (n.d.). Meditation. Retrieved October 29, 2023, from <https://dictionary.apa.org/meditation>)

So, if we consider both the origin and the modern definition of meditation, we can see what its basic elements are. That is to say that through the process of profound and extended focused attention, a conscious being can ponder and reflect, with the intent to gain insight into his knowledge of internal and external existence.

2.1.1 Different types of meditation

Meditation has been practiced for centuries and has gained significant attention within the scientific community due to its potential positive impact on mental and physical health. Various types of meditation practices have emerged, each with their unique origin, technique, and philosophical foundations. In fact, almost every culture and respective religion of the world have some kind of meditative or contemplative practice as a part of their spiritual heritage (Puff, 2013).

Many scientific studies have focused on the ones most known in western society, like:

- *Mindfulness Meditation:* Mindfulness meditation involves maintaining present-moment awareness without judgment. Practitioners focus their attention on the breath, bodily sensations, emotions, or thoughts, cultivating acceptance and non-reactivity.

- *Transcendental Meditation*: Transcendental meditation is a mantra-based meditation technique rooted in ancient Vedic traditions. During the practice, individuals silently repeat a specific mantra to achieve relaxation and enhance self-transcendence.
- *Loving-Kindness Meditation*: Also known as Metta meditation, this technique originates from Buddhist teachings and emphasizes developing self-compassion and compassion towards others. Practitioners generate feelings of goodwill, love, and kindness towards oneself and gradually extend these sentiments to friends, acquaintances, neutral individuals, and even people they do not like.
- *Compassion Meditation*: Compassion meditation involves cultivating a deep sense of compassion towards oneself and others suffering. Drawing from Buddhist practices, individuals learn to recognize and acknowledge suffering and then generate feelings of compassion and wish for alleviating suffering.
- *Vipassana Meditation*: Vipassana emphasizes the development of insight and wisdom through the observation of mental and physical sensations. Practitioners aim to cultivate a deep understanding and acceptance of the impermanent and interconnected nature of all experiences.

It is important to remind that the origins of meditative practices have not been established yet, and that some researchers propose that meditative capacities arose naturally as a result of human's introspective abilities (Rossano, 2007). Having said that, all these different kinds of meditation techniques might have a common ancestor. It can be useful to go back to their most ancient origins and see how it changed over time and cultures to better understand it (see Fig.1). We can trace these traditions back to one of the most ancient spiritual practices, namely *yoga*, which comes from the ancient Indian Vedic texts and the tradition of the Rishis (Sharma, 2015). These Indo-Aryan sages have been orally transmitting their teachings long before they decided to write them down, around 1000 BCE (Mark, 2020). The word "yoga" originates from the ancient Sanskrit language and its original meaning is "union" or "to join." It is derived from the root word *yuj* which signifies the act of joining or uniting. In the philosophical and spiritual context, yoga refers to the practice of connecting the body, mind, and spirit to achieve harmony and balance. So, even though over time yoga has evolved into a wide range of practices, including physical postures, breath control, meditation and ethical principles, the original concept is broader and can comprehend many different spiritual paths which have the common aim of becoming *one with everything*.

History of Meditation Timeline



Jo Nash, BA (Hons), MA, PG Dip Ed, PhD.

Fig. 1

2.2 Meditation effects on prosociality

2.2.1 Meta-analysis

Researchers have been enquiring on correlations between meditation and prosocial behavior for the last few decades. A huge number of articles have been published and many of those cautiously claim to have found significant proof of a correlation. Three interesting meta-analyses have looked at the results of many different studies and report significant results regarding this supposed correlation.

An important meta-analysis found significant results accounting for different types of meditation in their search (Luberto et al., 2018). Of the fourteen studies included in the review, eight explored correlations between changes in prosocial outcomes and changes in other variables that suggest potential mechanisms of action. These studies found that greater meditation practice was correlated with greater prosocial outcomes in most cases and that increases in mindfulness and self-compassion, as well as decreases in stress and anxiety, were significantly correlated with increases in empathy. Two studies used brain imaging techniques and found correlations between prosocial behaviors and changes in neural function. In addition to the forementioned results, six studies conducted formal mediation analyses (examining the intermediate variables, known as mediators, which mediate or explain the relationship between the independent and dependent variables). These analyses revealed that increased social and emotional connectedness mediated the effects of compassion meditation and charitable donations. Other formal mediation results showed that increased positive affect mediated the effect of Loving Kindness Meditation on explicit bias toward marginalized groups, decreased stress mediated its effect on bias, and greater home practice and decreased stress mediated the effect of meditation on compassion. The results of this systematic review support the efficacy of meditation-based interventions in increasing empathy, compassion, and prosocial behaviors. The meta-analysis also showed that meditation training had a small-medium and significant effect on both subjective and objective prosocial outcomes. The studies included in the review had strong designs and low risk of bias and the results were similar across studies with active and inactive control groups. Finally, the findings suggest potential mechanisms through which meditation can improve prosocial outcomes. Such emotional mechanisms include increased sense of social-emotional connectedness, increased positive affect, decreased stress and negative affect, and greater trait mindfulness and self-

compassion. Some studies found that improvements in individuals' socioemotional functioning mediated the effects of meditation training on prosocial outcomes. Physiological mechanisms, such as improvements in vagal tone (associated with better overall health and resilience to stress) and alterations in activation of prefrontal cortex areas, were also identified.

Secondly, an Australian team of researchers have analyzed thirty-one studies and found a medium-size effect on both state and trait mindfulness on prosocial behavior, measured only with quantitative data focused on self-reported or others-reported observable behavior (Donald et al., 2019). Nonetheless, the same analysis reports no larger effect for interventions which had an affective connotation of prosocial emotions. The authors propose that the main effect is given by the increased attention which increases emphatic concern, emotional regulation, and positive affect. They also found that mindfulness interventions reduce intergroup biases, fostering cooperative behavior.

Finally, a third meta-analysis (Malin, 2023), investigate the association between mindfulness and prosocial behavior, exploring both dispositional mindfulness and mindfulness interventions. The study reviewed correlational studies that examined the link between dispositional mindfulness and prosociality, as well as randomized controlled trials that examined the effect of short-term or long-term, and ethics-based or non-ethics-based mindfulness interventions on prosocial behaviors. The analysis included studies that measured at least one overt prosocial outcome, excluding those that solely relied on self-report measures. The findings of the study revealed a range of small to medium effect sizes in the correlational studies and a range of small to large effect sizes in the intervention studies, providing evidence of an association between mindfulness and overt prosociality. This meta-analysis also poses the question about the importance of ethic-based or non-ethic-based interventions as a variable that could be most important in relation to prosocial behavior.

These three meta-analyses exhibit confident results but, at the same time, show how an enormous number of studies did not meet high standard criteria.

2.2.2 Need for differentiation

It seems practical to differentiate between different types of meditation since it might shed some light over the results of such numerous articles. An elegant division can be borrowed from Singer and Engert in their article: "It matters what you practice: differential training

effects on subjective experience, behavior, brain and body in the [ReSource Project](#)” (Singer & Engert, 2019). In this article the authors differentiate meditations into three categories based on the specific focus of the meditation technique:

- Presence
- Affect
- Perspective

The first category refers to the techniques that aim to cultivate attention and being in the present (e.g. mindfulness, transcendental meditation); the second relates more to meditation that aim to arise specific emotions in the meditators (e.g. compassion meditation, loving-kindness meditation); the third one has a meta-cognitive connotation and the focus is to observe one’s thoughts or to take a different perspective (e.g. mindfulness, vipassana).

Given the difference of these three categories, it seems reasonable to think that different techniques might have a role in relation to the outcome of interventions.

Finally, many meditation traditions promote different techniques for long-time practitioners, so it would be wrong to confine them into just one category. For example, different mindfulness-based interventions might have a different focus. And also, the old yogic tradition meditation has elements of all the three categories, but we’ll see them in depth later.

2.2.3 Studies on presence focused meditation

The “Presence” aspect of meditation accounts for techniques which train the attentive capacities of the mind, asking participants to focus on either the breath or some specific internal or external object. This is usually the most common type of meditation promoted in Western culture. It is interesting to notice that, for older meditative traditions, this is just the first step toward deeper meditation techniques.

Some studies unveil how presence meditation can promote prosocial behavior in specific settings. For example, Hafenbrack et al. (2020) investigate the impact of mindfulness on prosocial behavior in work-related contexts in a series of studies. Empathy was found to be a significant mediator, suggesting that mindfulness enhances individuals' ability to understand and share the feelings of others. Other researchers have pointed out the importance of an increase in gratitude as an effect of mindfulness, and its importance in the workplace (Sawyer et al., 2022).

In other studies, researchers have measured the effects on prosocial behavior through the correlation between meditation and the willingness to donate money. Iwamoto and colleagues (2020) conducted a simple donation game in which participants were randomly assigned to either a mindfulness meditation online session or a control condition. The results showed that participants who underwent the mindfulness meditation treatment donated at a significantly higher rate compared to those in the control condition.

On a deeper level, Feruglio et al. (2022) examines the impact of mindfulness in studies that used reward-based tasks where participants' decisions also impacted their own payoff by reducing it. The authors suggest that an essential aspect of mindfulness meditation is its impact on self-control circuitry, which can decrease reward-seeking behaviors and the salience of rewards by making it less tempting. These studies often show a beneficial effect of mindfulness on prosocial outcomes, but it is unclear whether this is due to an increase in other-oriented motivation or a decrease in individual reward salience. This raises the question of whether the observed prosocial behavior is solely due to enhanced motivation to benefit others or if it is also influenced by the reduced appeal of monetary rewards. Since prosocial behavior involves self-oriented motivation and activates the reward circuit in the brain, the authors propose that future studies should try to manipulate both other-oriented motivation and reward salience to better understand the specific mechanisms through which mindfulness influences prosocial behavior.

In another study (Malin & Gumpel, 2022) the researchers aimed to investigate whether a short mindfulness intervention promotes the intention to help strangers in distress and to explore the role of empathy in this effect. The results showed that a significantly higher percentage of participants in the mindfulness condition (50.8%) were willing to provide help compared to the control conditions. This finding suggests that a short mindfulness practice can increase the intention to help strangers in distress. This correlation seems to work both ways at least in people with high levels of mental rumination, who can increase their mindfulness by mentally engaging in prosocial activities such as imagine how to help somebody (Meng & Meng, 2020).

In some studies, meditation has also shown to be an effective tool against racial discrimination. In his randomized controlled trial, Berry et al. (2023) found that a short-term mindfulness training, compared to a sham meditation training, increased interracial helping behavior in a lab-based simulation. These findings suggest that mindfulness and its training promote

helping behavior towards strangers and acquaintances regardless of their racial group, but preferential helping towards ingroup members persists.

Finally, meditation seems to promote prosocial behavior also in an ecologically valid setting where participants are directly confronted with a person in pain. This seems important, to the point that some researchers state that only real-time, person-to-person interaction allows for the objective measurement of compassionate responding (Condon et al., 2013).

2.2.4 Studies on affect focused meditation

After exploring meditation techniques focused on being present in the moment, let us navigate some other studies which focus on how the affective valence of meditation can contribute to foster prosocial behavior.

These meditations have been proven effective to mitigate the effects of negative earlier life experiences on prosocial behavior (Lan & Wang, 2022), and can improve emotional well-being in individuals with insecure attachment, raised in families with low socio-economic status (West et al., 2022). The affective side of meditation seems also to be able to foster long-term life changes. The broaden-and-build theory of positive emotions, proposed by Fredrickson (2001), suggests that experiencing positive emotions on a regular basis can lead to the development of various personal resources. In a field experiment (Fredrickson et al., 2008), the authors tested this theory by assigning half of a group of working adults to practice loving-kindness meditation. The results of the experiment showed that participants who practiced loving-kindness meditation experienced increased positive emotions over time. These increased positive emotions, in turn, led to the development of several personal resources, such as mindfulness, purpose in life, social support, and decreased illness symptoms. These personal resources, in turn, predicted higher life satisfaction and reduced depressive symptoms. Additionally, loving-kindness and compassion meditation can have a potential impact on the development of psychotherapists' empathy. Training studies have demonstrated positive impacts on empathy-related variables such as altruism, positive regard, prosocial behavior, and interpersonal relationships. They can also reduce negative emotions associated with empathy for pain, reducing the risk of burnout for psychotherapists and healthcare workers (Bibeau et al., 2016). As we have seen before, regarding the presence focused intervention, affect-focused meditation can also decrease implicit bias against stigmatized outgroups. This suggests that engaging in loving-kindness meditation can lead to improvements in automati-

cally activated, implicit attitudes towards stigmatized social groups (Kang et al., 2014). Compassion meditation has also been proved as a useful tool in enhancing social connections and counteracting the growing social distrust and alienation observed nowadays in many cultures (Hutcherson et al., 2008).

In conclusion, these studies show the importance of the affective dimension of meditation interventions. By regularly focusing on positive feelings during meditation, positive emotions can be reinforced so that individuals can then carry them into their daily lives. Cultivating those emotions might shape the empathy-mediated affective response of individuals making them more prone to sentiments of compassion, kindness, love, and justice (Jazaieri et al., 2013) (McCall et al., 2014) and able to adapt more effectively to stressful events, negative emotions, and setbacks, leading to greater emotional well-being.

2.2.5 Studies on perspective focused meditation

In this last category, we find studies that focused on meditation which comprise elements of morality, motivation, and abstract philosophical concepts. This can involve questioning the assumptions or beliefs held about a particular situation, considering other people's perspectives, or imagining oneself in another person's shoes. The meditator can also try to zoom in or zoom out on the situation, taking a broader or narrower view to gain different insights. In addition, the meditator can focus on meta-physical concept, for example the *Neti Neti* meditation (which literally translate to “not this – not that” or “neither this – neither that”) from Advaita Vedanta tradition, which aim to separate oneself from his/her experience by process of negation. Another example taken from Buddhist tradition, is the meditation on the *Four Noble Truths*, namely *Dukkha* (suffering), *Samudaya* (the cause of suffering), *Nirhodha* (the end of suffering) and *Magga* (the path that frees us from suffering). Or also meditation focusing on a particular *mantra* (sound or sequence of sounds) or *yantra* (mystical image) and its meaning.

In this study by Wallmark et al. (2013), the results revealed a potential increase in altruistic orientation in the intervention group, which was significantly linked to the amount of time spent in meditation focused on adopting the perspective of others, non-judgmental kindness towards oneself, viewing suffering as a shared experience, and mindful attention to emotions. This research highlights the potential for meditation to improve emotional regulation and interpersonal kindness. The study also suggests that the four immeasurables: *Metta* (Loving-

kindness), *Karuna* (Compassion), *Mudita* (Sympathetic Joy), and *Upekkha* (Equanimity), which are part of Buddhist tradition helps to overcome negative emotions, develop a compassionate heart, and cultivate harmonious relationships with oneself and others. They are often practiced through meditation and daily life actions and may have the potential to alter how individuals value others' welfare. Additionally, *Sunyata* (emptiness), a Buddhist philosophical concept which means that although phenomena are perceptible to the human mind, they do not intrinsically exist, has been made the central focus of advanced meditator's practice and then compared to mindfulness training. The results showed that emptiness meditation led to significantly greater improvements in non-attachment (the ability to accept but at the same time let-go of life events, mental processes, and possessions), mystical experiences, compassion, positive affect, and negative affect compared to the mindfulness meditation condition, suggesting that the perspective valence might indeed be an important factor in meditative experience (Van Gordon et al., 2019).

This third layer of principles inherently connected to meditative processes seems to give a deeper sense of what the aims of meditation are. And the more we account for studies, the more we can see the role of morality and moral variables as intertwined with the basis of a profound meditative process (Kil et al., 2021; Xiao et al., 2020).

The emergence of contemplative psychology as a branch of contemplative sciences might be able to reconnect modern-day meditation interventions to their original tradition, without the need for a religious approach (Van Gordon et al., 2022). To integrate moral principles and abstract philosophical concepts and to underline the importance of meditation as a process that takes time, even though hard to integrate into a fast-paced living, might lead to a new level of mental health and quality of life (Garcia-Campayo et al., 2021).

While traditional and contemporary communities of mindfulness practice have common goals of reducing suffering, they diverge in their approaches. Traditional mindfulness focuses on understanding and uprooting the fundamental causes of suffering through diligent practice, while contemporary mindfulness aims for relief from symptoms and attitudes that result in distress. While the symptomatic relief provided by contemporary mindfulness may initially appear shallow compared to the long-term benefits of traditional mindfulness, the long-term effects are still uncertain and further research is needed (Monteiro et al., 2015). Critics argue that contemporary mindfulness programs only provide symptomatic relief because they do not fully utilize the concepts and teachings of traditional mindfulness. Therefore, the chal-

lenge for contemporary mindfulness is to merge the heart of traditional mindfulness practice into functional interventions that focus on sustaining well-being beyond symptomatic relief (Van Gordon et al., 2015a; Van Gordon et al., 2015b).

The question arising is if ethical context, relational context, and pre-existing personal dispositions can shape the outcomes of meditative programs. It is also unclear whether the ethical context needs to be explicitly articulated or if it can be implicitly modeled by teachers or facilitators. Similarly, the role of relationality in fostering prosocial outcomes is still uncertain, whether it can arise implicitly through group practice or if it requires an explicit focus on relationality during contemplation (Condon, 2019). Moreover, delving into neglected aspects of meditation from which we can gain a deeper understanding of the transformative potential of meditation practices and their impact on individuals' lives might be beneficial. The experiences of long-time meditators have the potential to provide insights into the effects of meditation and to deepen our understanding of human potential and the nature of reality (Vieten et al., 2018). Furthermore, by shifting our understanding of mindfulness from a focus on the self to a focus on collective wellbeing, we can unlock new opportunities for individual and societal transformation. Tobias Mortlock (2023) proposes a mindfulness matrix, which integrates various literatures on mindfulness and identifies different motivations for engaging in mindfulness. By mapping these literatures and motivations together, the paper promotes integration between different schools of thought. We need to view mindfulness as a prosocial engagement. This involves not only understanding meditation as a metacognitive practice and nonjudgmental present-moment awareness, but also recognizing collective wellbeing as an intended outcome of mindfulness practice and interventions.

2.2.6 Meditation and the prosocial brain

Evidence suggests that meditation can lead to neuroplastic changes in brain regions such as the amygdala, insula, striatum, anterior and posterior cingulate cortex, and multiple prefrontal regions. These regions can be associated with attention, emotion regulation, and self-awareness (Tang et al., 2015).

Compassion training led to activity in a network of brain regions associated with positive emotions and affiliation, such as the medial orbitofrontal cortex, putamen, pallidum, and ventral tegmental area. Participants who underwent compassion training experienced positive emotions even in response to the distress of others (Klimecki et al., 2013). Since positive

emotions are related to prosocial behavior, these findings highlight the potential of compassion training in helping to cope with distressing life events. Actively working on developing compassion could be a helpful tool for dealing with the pain or suffering of others, allowing individuals to maintain a positive emotional state even when faced with difficult situations and ultimately promoting interaction rather than avoidance.

The impact of compassion training on altruistic behavior was explored in another study. Participants who received compassion training were more likely to engage in altruistic behavior and redistribute funds to a victim compared to a control group. Altered activation in brain regions involved in cognition and emotion regulation, such as the inferior parietal cortex and dorsolateral prefrontal cortex, was associated with increased altruistic behavior after compassion training (Weng et al., 2013). The study suggests that compassion can be cultivated through training and has a positive impact on altruistic behavior.

The amygdala has been consistently linked to processing emotions, both positive and negative. Previous studies have shown that the amygdala's response to emotional stimuli is reduced when individuals are in meditative state of mindful attention, both in beginner and expert meditators. And this seems to be true also when people are not directly meditating (Desbordes et al., 2012). Nonetheless, compassion meditation interventions show a long-term increase in right amygdala response to negative images also when the participants are in a non-meditative state. This apparent contradiction could be explained by considering *the caregiving system*. This neural system involves various brain regions, including the amygdala, the limbic system, and the prefrontal cortex. These circuits are responsible for generating positive emotions such as love and affection and promote caring and helping behaviors towards others. When the amygdala is activated, it can influence caregiving circuits in different ways. For example, in response to the perception of danger, the amygdala may temporarily inhibit or reduce the activity of caregiving circuits, instead focusing on protection. Nonetheless, studies have found that in safer and non-threatening situations, caregiving circuits including the amygdala can be activated to promote social support, collaboration, and caring for others (Brown et al., 2012).

Other studies which focused on mindfulness interventions showed increases in gray matter concentration in several brain regions, including the left hippocampus, the posterior cingulate cortex, the temporo-parietal junction, and the cerebellum, which are involved in emotion regulation, self-referential processing, and perspective taking (Hölzel et al., 2011).

Additionally, Laneri and colleagues (2017) investigated the effects of long-term mindfulness meditation practice on reducing distress and neural activations associated with empathy for others' social pain. It was found that mindfulness meditation, particularly when practiced just before an empathy task, led to lower activation in the left anterior insula, a brain region associated with empathy. Mindfulness meditation reduces distress and neural activations associated with empathy, enabling individuals to engage in compassionate behavior towards others.

In the end, it seems plausible that the modifications of brain structures and activations patterns in long-term meditators could affect day to day prosocial behavior also from a neurological and neurophysiological point of view.

2.2.7 Controversies and potential negative effects of meditation

While meditation is usually seen as a beneficial (or at least non-harmful) practice, and contrary to popular belief that meditation leads to overall prosocial changes, the results of this meta-analysis of randomized controlled trials (Kreplin et al., 2018) suggest that the effects of meditation on prosociality are limited and contingent on specific factors. The findings indicate that while there is a moderate increase in prosociality following meditation, the effect is dependent on the type of prosocial behavior and the methodological quality of the study. Specifically, meditation interventions have a positive effect on compassion and empathy but not on aggression, connectedness, or prejudice. Additionally, the study identifies two factors that influence the increase in compassion levels: the presence of the meditation intervention teacher as a co-author in the published study and the use of a passive control group (e.g. a waiting list control group) rather than an active control group.

There is a general concordance regarding the need for high-quality studies that provide causal evidence over sustained periods of time, as well as research that directly examines the mediating mechanisms underlying the relationship between mindfulness and prosocial behavior (Schindler & Friese, 2022).

Some studies claim to have found evidence which points to a negative correlation between meditation and prosociality, mediated by specific aspects of the meditator. Particularly in respect to trait mindfulness (Schindler & Pfattheicher, 2023), empathy (Ridderinkhof et al., 2017), differences in personality traits (Guo et al., 2022; Guo et al., 2023; Poulin et al., 2021), and physiological and neuroendocrine responses (Creswell et al., 2014). Furthermore,

researchers have found clues of a negative relation between meditation and emotion such as the sense of guilt, proposing that meditation might reduce it and generally induce a more detached approach to life (Hafenbrack et al., 2022). This claim is in line with traditional Eastern teachings such as: the yoga sutras of Patanjali, the bhagavad gita, the sutta pitaka, the dhammapada, and the upanishads, which on one side highlight the importance of meditation and detachment from the material world but at the same time emphasize the importance of engaging with the world with equanimity and wisdom rather than avoiding or evading it entirely.

Having to deal with such a complex construct as prosociality studies have sometimes shown contrasting outcomes. Most of the studies do not give a satisfying explanation of the meditative process involved in the study. Moreover, the short number of long-time meditators as subject doesn't allow us to infer what the long-term effects might be. This is paramount since every spiritual tradition puts constancy in the practice as one of the fundamental principles.

Based on that, meditation is traditionally recognized as a process which needs repeated practice and a solid ethical basis to stand on. We should at least doubt studies which investigate prosociality and meditation, without even considering the meditative process itself (Guo et al., 2022).

2.3 The importance of ethics

Ethical principles in meditation could play a crucial role in creating a harmonious and compassionate society, providing a moral compass and a guide for practitioners to live their lives in a way that promotes both personal well-being and the welfare of others. Moreover, they can guide practitioners in developing a clear set of values and rules to live by. This framework could also help them make choices that align with their intentions to promote the welfare and well-being of themselves and others (Xiao et al., 2020).

Furthermore, strong ethical foundations could encourage practitioners to reflect on their intentions, behaviors, and their impact on themselves and others. This self-awareness might foster empathy as they recognize the interconnectedness of all beings and the importance of acting with kindness and compassion. And even though maybe not indispensable (Berry et al., 2020) in the short run, they could make a difference in the long term. In addition, when

individuals adhere to shared ethical principles, it builds trust, cooperation, and strengthens the social fabric, creating an harmonious community and providing a common ground for people to come together and create a supportive community (Greenberg & Mitra, 2015; Hutcherson et al., 2008). Finally, ethical principles probably serve as safeguards against harm. They provide guidelines to ensure that meditation and prosocial practices are conducted responsibly, respecting the rights and dignity of oneself and others. This includes refraining from actions that cause physical or mental harm and actively promoting well-being.

Following ethical principles is an integral part of the transformative journey of meditation. Engaging in ethical behavior cultivates virtues such as patience, generosity, kindness, and compassion, which contribute to personal growth and a deeper understanding of oneself and others (Chen & Jordan, 2020).

2.3.1 Yama, niyama and the foundations of the meditative process in Yoga traditions

A deeper look at the oldest meditative tradition known to us (see Fig. 1), can show us a connection with prosociality. In fact, while yoga is often associated with various postures (*asana*) and breathing exercises (*pranayama*), it is essential to recognize the foundational principles that guide the practice. These include ethics, as outlined by the *yamas* and *niyamas*, along with the meditative process.

The *yamas* and *niyamas*, two sets of ethical guidelines described in Patanjali's yoga sutras, provide a framework for leading a virtuous life. The five *yamas* focus on behavior and how we relate to others, while the five *niyamas* emphasize personal observances and self-discipline.

In particular, the *yamas* consist of *ahimsa* (nonviolence), *satya* (truth), *asteya* (non-stealing), *brahmacharya* (moderation), and *aparigraha* (non-possessiveness). These principles encourage practitioners to treat others with kindness and compassion, to speak and act truthfully, to respect the property and boundaries of others, to maintain discipline in their relationships and conduct, and to avoid greed and excessiveness. Adhering to these ethical guidelines fosters an environment of trust, respect, and harmony within oneself and with others.

Ethics not only shape the way we interact with others but also influence our inner reality.

The ethical principles of *yamas* and *niyamas* are seen as essential foundations from which the meditative process can proceed. Nonviolence, truthfulness, and non-possessiveness guide practitioners to approach meditation with a sense of gentleness, honesty, and non-attachment. Furthermore, practitioners adhering to these principles will be able to approach meditation with a lighter heart, free from the burden of having to self-justify for their prior behavior, and more prone to prosociality.

2.3.2 Pratyahara, dharana, dhyana and samadhi as different stages of meditation

Pratyahara, *dharana*, *dhyana*, and *samadhi* are four stages in the yogic tradition that are part of the eight limbs of yoga, as outlined in Patanjali's yoga sutras. A brief introduction of these stages of meditation can give us a new lens through which we can look at the literature.

1. *Pratyahara*: is the withdrawal of the senses from external stimuli. It involves turning the attention inward and detaching from the distractions of the external world. By consciously withdrawing the senses, the practitioner can focus on stillness and inner awareness.
2. *Dharana*: is the practice of concentration and one-pointed focus. In this stage, the practitioner holds their attention on a single object or process, which might be external as well as internal. The goal is to develop and strengthen the ability to sustain concentration without drifting into distraction.
3. *Dhyana*: is the stage of meditation. It arises when the concentration from *dharana* deepens, and there is a seamless flow of sustained attention towards the chosen object of focus. In *dhyana*, the meditator experiences a state of absorption, where the mind becomes completely absorbed in the object of meditation.
4. *Samadhi*: is the ultimate goal of yogic practice, often described as a state of complete union with the object of meditation or an experience of non-dual consciousness. In this stage, the distinction between the meditator and the object of meditation dissolves, and the practitioner experiences a sense of expansion, bliss, and oneness. *Samadhi* is considered a state of profound spiritual realization.

These four stages are progressively deeper states of consciousness, and through regular practice, one can move from *pratyahara* to *samadhi*. Each stage builds upon the previous one, with the ultimate aim of quieting the fluctuations of the mind and attaining insights.

2.3.3 Meditation and Western cultures

This brief introduction can show the importance of long-term practice and adherence to the preliminary *yama* and *niyama* principles in a holistic approach.

It also raises the question about how to protect practitioners which dive deep into their mind. Traditional scriptures strongly remark on the importance of a tutor, which can offer valuable guidance and experience in the practice of meditation.

Western culture has always been in need to find the short and easy way to administer remedies. With meditation, we might have to recognize the need for a more comprehensive approach, potentially leading to a transformation of society as a whole. Having said that, a traditional approach to meditation needs time and a relaxed-paced lifestyle, two characteristics hard to find in a neo-capitalistic society.

In conclusion, meditation is a personal journey which can take an undefined number of forms, which is why the absorption of ethical principles and the presence of a tutor appears important to avoid adverse effects.

CHAPTER 3: Prosociality and diet

3.1 A prosocial diet?

Starting from some of the many definitions of what constitutes ethically-based food choices (Food Ethics Council, 2023; Höglund, 2020; Kemmerer, 2014; Singer et al., 2006; Zwart, 2000), we will try to outline a preliminary definition of a prosocial diet. A prosocial diet emphasizes a plant-based approach, with a focus on whole foods such as fruits, vegetables, grains, legumes, nuts, and seeds. This helps reduce the demand for animal products, which are associated with animal cruelty, environmental degradation, and health issues (Godfray et al., 2018; González et al., 2020). A prosocial diet should account for the well-being of animals also by drastically reducing or completely eliminating the consumption of meat, poultry, and fish, and may involve choosing plant-based alternatives. Furthermore, choosing foods that are sustainably sourced and produced is another essential aspect of a prosocial diet. This includes opting for organic and locally grown options whenever possible, supporting fair trade practices, and avoiding foods with excessive packaging. The environmental impact of food production is also a crucial point in a prosocial diet, minimizing the use of resources like land, water, and energy, as well as reducing greenhouse gas emissions and pollution can be achieved by choosing plant-based options that require fewer resources and have a lower carbon footprint (Godfray et al., 2018). Finally, a prosocial diet takes into account social justice concerns related to food, such as fair labor practices, supporting local communities, and addressing food insecurity. It may involve purchasing from farmer's markets or community-supported agriculture programs, supporting food banks and organizations that promote access to healthy food for all. Overall, a prosocial diet promotes a more mindful and compassionate approach to food choices, considering not just personal health but also the impact on the environment, animals, and society.

Of all the above characteristics, meat consumption has been at the center of many studies and also the most directly linked to meditative traditions, which have been advocating for vegetarian or vegan diet since a long time ago. It should also be considered that the adherence to a plant-based diet might be more suitable for lower socio-economic categories, which might find it difficult to buy high quality, locally produced, organic food, given its usually higher price.

3.2 The meat paradox

The meat paradox refers to the ethical dilemma people face when they enjoy consuming meat but also acknowledge the negative consequences of animal suffering and environmental impact associated with meat production (Loughnan et al., 2010; Percival, 2023).

On the one hand, humans have been consuming meat for thousands of years as a source of nutrition and pleasure. Meat is often considered a staple in many diets and is deeply ingrained in cultural customs and traditions.

On the other hand, there are numerous ethical concerns related to the consumption of meat. Animal rights advocates argue that raising animals for slaughter involves cruelty and suffering. Factory farming practices, which often prioritize profit over animal welfare, have been criticized for confining animals in small and overcrowded spaces. Additionally, the environmental impact of meat production, including deforestation for grazing land and the release of greenhouse gases from livestock, is a major concern in the face of climate change (United Nations Environment Programme, 2022; Wilde, 2022; Xu et al., 2021).

The meat paradox arises when individuals grapple with these conflicting feelings and beliefs. Many people genuinely care about animal welfare and the environment, but still find it difficult to give up or reduce their meat consumption due to ingrained habits, cultural traditions, taste preferences, or nutritional concerns (Kwasny et al., 2022; Loughnan et al., 2014; Šedová et al., 2016).

To address the meat paradox, some people choose to adopt a plant-based diet or reduce their meat consumption, while others may purchase meat from sources that prioritize animal welfare, such as organic or pasture-raised options (Graça et al., 2014; Rothgerber, 2015). Some also advocate for lab-grown or cultivated meat as a more ethical and sustainable alternative to traditional meat production (Chriki & Hocquette, 2020).

Ultimately, the meat paradox reflects the complex and often conflicting relationship humans have with meat consumption, as they struggle to reconcile personal preferences and culture with ethical and environmental concerns. The psychological processes at the basis of this internal conflict have been at the center of many recent publications.

3.3 The psychology of eating animals

The psychology of eating animals is a complex topic that encompasses a range of factors, including cultural, social, cognitive, and emotional influences.

In relation to cultural and social factors, the consumption of animals is deeply ingrained in many cultures, affecting attitudes and beliefs about food choices. Cultural norms, traditions, and social influences play a significant role in shaping people's dietary choices (Benningstad & Kunst, 2019; Macdiarmid et al., 2016; Šedová et al., 2016). The acceptance of eating animals is often passed down through generations and can be tightly linked to a sense of identity and belonging, since children are heavily influenced by their families, peers, and society in general, and their dietary habits are shaped by these social contexts (Rothgerber & Rosenfeld, 2021). In one particular study, the parents' approach to discussing the origin of meat with their children is analyzed. The results highlight difficulties in explaining the origin and processes of meat production, and how parents might adopt strategies to avoid an in-depth analysis of the matter, such as explaining it when the child is still very young (Bray et al., 2016).

Regarding cognitive factors, humans have developed cognitive processes that help them justify and rationalize their meat-eating behavior. People often use cognitive dissonance to reduce the psychological discomfort that arises when their beliefs or actions conflict with each other (Dowsett et al., 2018; Graça et al., 2014; Rothgerber, 2014; Rothgerber & Rosenfeld, 2021). They may resort to strategies such as downplaying the moral implications of eating animals or believing in the necessary role of animals as food sources.

Eating animals can also be emotionally challenging for some individuals. Many people develop emotional connections with certain animals, such as pets, which can create a cognitive dissonance between their emotions and their food choices (Rothgerber & Mican, 2014). However, others may experience emotional detachment, moral disengagement, or rationalize the separateness of pets and farmed animals to reconcile their behavior (Graça et al., 2014, 2016).

Humans employ various psychological defense mechanisms to protect their existing belief systems and shield themselves from the uncomfortable thoughts or emotions associated with eating animals. Denial and compartmentalization are examples of defense mechanisms that can be used to minimize feelings of guilt or discomfort about consuming animals

(Benningstad & Kunst, 2019; Dowsett et al., 2018; Onwezen & Van Der Weele, 2016; Rothgerber, 2014; Rothgerber & Rosenfeld, 2021). Furthermore, humans can withdraw their moral concern for animals and perceive them as unworthy and unfeeling. This allows them to resolve the conflict between enjoying meat and caring about animal welfare and rationalize their reduced moral concern by perceiving animals as having a reduced capacity to suffer (Loughnan et al., 2010, 2014).

Given the importance of reducing meat consumption and shifting towards plant-based diets to achieve climate targets, improve public health, and protect animal welfare, it is worth noting that while there is a growing body of research on the drivers of meat consumption and barriers to its reduction, there is a lack of studies on the effectiveness of interventions to initiate behavior change.

3.4 Interventions

Existing research suggests that interventions focusing on personal factors of behavioral change, such as knowledge and emotions, have shown some effectiveness. The provision of information on health, animal welfare, and environmental effects can influence consumers, especially when framed emotionally or cognitively and aligned with their information needs (Kwasny et al., 2022). Additionally, linking meat to living animals or highlighting the human-like qualities of animals can evoke negative emotions and reduce meat consumption (Kwasny et al., 2022).

Increasing the visibility and variety of vegetarian dishes in food environments has also been found to decrease meat-eating. Educational courses on shopping and cooking vegetarian food have shown promise in reducing meat consumption as well. However, there is less evidence on the effectiveness of interventions targeting socio-cultural factors, such as social norms (Kwasny et al., 2022). In addition, prosocial incentives, such as linking vegetarian food choices to a small donation to an environmental organization or the planting of trees, can effectively promote vegetarian food choices. The presence of a prosocial incentive increased the odds of choosing vegetarian options by a significant percentage compared to a control condition and baseline (Lange et al., 2023).

There seems to be an important point in the conscientiousness of the process that brings meat to the table. Animalists often argue that if consumers would have to personally kill the

animals they eat, most of them would become vegetarian. And the same argument can be used by vegans about the consumption of animals' products. And even though researchers have shown cultural differences (Kunst et al., 2018), direct exposition to the suffering of animals would probably create higher levels of frustration, and the forementioned psychological processes that humans use to justify their consumption of meat might not be enough to reiterate the behavior.

Both trait and state mindfulness have been linked to healthier food choice and eating behavior (Jordan et al., 2014), enabling reconnection with internal hunger and satiety cues as well as more conscientiousness in food consumption, against unconscious eating patterns (Errmann & Septianto, 2023). Nonetheless, mindfulness interventions seem less effective in promoting sustainable nutritional behaviors, fostering positive changes in attitudes and intentions (Kaur & Luchs, 2022), however struggling to elicit actual behaviors (Stanszus et al., 2019).

In the end, by bringing attention to the tensions and ambivalence associated with meat consumption, it may be possible to turn strategically ignorant consumers into consciously struggling or coping consumers who actively consider their moral responsibilities and might be more prone to adopt substantial changes in their dietary pattern (Onwezen & Van Der Weele, 2016).

3.5 Ahimsa and the sense of caring

As we have already seen in chapter 2, *Ahimsa* is a term derived from Sanskrit and it means non-violence or non-harming and is the first and foremost aspect of the ethical principles of *yama* in Patanjali's Sutras. On a broader outlook, ahimsa is a key principle in Hinduism, Buddhism, and Jainism, and it emphasizes the importance of compassion, empathy, and care towards all living beings. In fact, the concept of *ahimsa* goes beyond refraining from physical violence, extending to our thoughts, words, and actions. *Ahimsa* intertwines with a sense of caring and respect for all creatures, whether humans, animals, or even plants. In these religious traditions, adherence to this principle fosters a strong sense of empathy and compassion towards others and promote treating all living beings with kindness and respect, recognizing that they too desire to live free from harm and suffering. To a larger extent, it seems important to become more mindful of our choices and actions, so that we can become aware of the impact our decisions have on others and strive to minimize any form of violence inflicted on them.

This concept overlaps with the psychological sense of caring, which refers to the ability to feel empathy, compassion, and concern for the well-being of others. It involves the emotional connection and genuine interest in understanding and supporting the needs, feelings, and experiences of another person or living being. This caring usually goes beyond surface politeness or obligation, as it entails a deep level of involvement and investment in other's welfare. The sense of caring that arises from practicing *ahimsa* is not limited to just our interactions with other living beings, but it extends to how we treat the environment, how we consume resources, and how we contribute to the overall well-being of society.

Since non-violence is at the basis of prosociality and *ahimsa* is strongly linked to vegetarian and vegan diets, a more attentive, compassionate, and conscientious approach to food might be an important field to explore in respect to prosociality.

3.6 A particular study: the role of environmental cues

Meat consumption has been linked to a greater acceptance of social domination and right-wing ideologies (Dhont & Hodson, 2014), while vegetarianism and veganism tend to be associated with attitudes of empathy, social justice, and altruism (Rosenfeld, 2018). Meat consumption is also associated with male dominance, with men being less likely to be vegetarians and more likely to justify meat consumption and deny animal suffering (O'Doherty Jensen & Holm, 1999; Rothgerber, 2013).

Vegans often have concerns beyond just following a health-related diet and are motivated by ethical and prosocial ideals for a better world (Rosenfeld, 2018). They tend to display higher levels of empathy and altruism compared to non-vegans (Filippi et al., 2010).

A particular series of studies conducted in real-life settings suggest that environmental cues related to meat or vegan food can influence prosocial behavior. Customers coming out of a vegan shop were found to be more compliant with prosocial requests compared to customers coming out of a butcher shop. The situational reminders of meat near a butcher shop may activate self-enhancement values and decrease prosocial behavior, while the presence of a vegan shop may activate other-oriented values and increase prosocial behavior (Lamy et al., 2019).

Having said that, the authors of this study acknowledge its many limitations. For example, the absence of measurement of values among participants makes it difficult to definitively

conclude that they were primed with self-enhancement values such as strength, power, and social domination. Speculation is based on assumptions rather than concrete evidence. Since values can play a significant role in influencing individuals' behaviors, decision-making, and social interactions, accurately measuring participants' values would have provided more substantial support for the claims made in the research. Additionally, this study only examined the effects of meat-related cues on prosocial behavior in a specific context (i.e., near a butcher shop). It would be interesting for future research to investigate whether similar effects occur in different contexts or with different types of meat-related cues. For example, does the presence of meat-related cues in a grocery store or restaurant setting also influence prosocial behavior? Are there specific cues related to vegan food that may increase prosocial behavior in certain situations? Furthermore, this study focused on the immediate effects of meat-related cues on prosocial behavior. It would be interesting for future research to explore whether these effects persist over time or if they are temporary in nature. Longitudinal studies could help determine if exposure to meat-related cues has a cumulative effect on prosocial behavior over an extended period.

Overall, while this one-of-a-kind research provides valuable insights into the effects of meat-related cues on prosocial behavior, its limitations suggest areas for further exploration and refinement.

Conclusions

We live in difficult times. The climate crisis, social inequities, and the numerous armed conflicts around the world impact societal well-being in many ways. From what we have gathered, there are some important life changes that could be promoted to contrast some of society's major problems. Needless to say, that meditation and following a plant-based diet are not a panacea for all social or personal problems. The principle of prosociality, by its very definition, promotes positive relations between humans and the world around them. A serious approach should integrate the principles of meditation and conscientiousness about one's own diet from a very young age, making them part of the process of development. New technologies are pushing for more and more of the users' attention to be directed towards external stimuli. Meditation could counterbalance this outward projection directing attention inwardly instead. Furthermore, a prosocial diet could have an impact on society and help to contrast environmental problems. Cultivating our internal world should be as important as protecting the world we live in. By becoming aware of the interconnectedness of all things this principle of caring could become a more shared inclination in humans.

On the journey to a better future, we could use the help of older meditative traditions by considering their most fundamental principles, and starting from those, we might be able to reach new heights and let the full potential of humanity express itself. Societal harmony should become a priority of government and institutions, abandoning conflict, exploitation, and violence. Such a future would need a paradigm shift in which each individual becomes his/her own ultimate authority and, by knowing himself/herself better, be more sensitive to other living beings and the surrounding environment. The final objective of meditation should be to become completely aware of the totality of the mind, with all its conditioning, and from there to be able to live life in a more positive way for ourselves and more prosocial towards others.

In conclusion, the evidence presented in this thesis strongly supports the notion that both meditation and a prosocial approach to our food choices have the potential to influence individuals, helping them become better people with a greater sense of empathy, compassion, and social responsibility. These practices provide individuals with tools and values to navigate a world increasingly in need of prosocial approaches. However, it is essential to remember that personal growth is a lifelong journey, and the integration of meditation and a

plant-based diet should be seen as part of a broader commitment to personal development and societal change.

This analysis of the literature has also shown the need for further studies and some important considerations that should be addressed. For instance, a detailed report about the meditation technique should be considered of the utmost importance in every study dealing with this matter. And also, the lack of studies dealing with long-term meditators adhering to particular set of principles, should be addressed. Furthermore, let it be noticed that in the literature we could only find one study enquiring about the link between diet and prosociality. The increasing number of people who adhere to a particular diet might make it worth exploring more. Presumably, long-time meditators should be more attentive about their inner thoughts and have more knowledge about the workings of their mind. So, it is possible that eventual mental processes connected with consuming meat might interfere with acting in a prosocial manner even more than in non-meditators. That is to say, that eventual effects of food choices might become even more relevant for people with high levels of introspection, cultivated through meditation.

Ultimately, the decision to embark on a path of meditation and conscientious diet rests with the individual. Through self-reflection and a genuine desire to become more prosocial, individuals can harness the transformative power of these practices to improve their own lives and contribute positively to the well-being of others and the planet. Let us embark on this journey with open hearts and, knowing that the pursuit of a more compassionate and considerate world starts from within ourselves.

This all can sound naïve and utopistic, but the scientific literature seems to point in that direction. Now is the time to act.

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