Original Paper

Terror Management Theory and grand-metanarratives.

The search for a consilient ethics of conscious limitedness for the ecological transition

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Abstract. *The multiple crises of the Anthropocene result from unsustainable individual behaviours and collective choices. Ethics play a key role in mediating human interactions with one another and the planet. To address these challenges, it's essential to examine dominant ethical systems and whether they can be redirected to encourage sustainable behaviours. However,*

the evolution of ethical systems remains unclear, making it difficult to identify leverage points for fostering an ecologically sound cultural paradigm. This paper draws on Terror Management Theory (TMT), which suggests that cultural systems evolve in response to humans' awareness of their biological limitations. We argue that both individual and collective actions rely on a shared system of beliefs, or grand-metanarratives, that give meaning to experiences. We highlight the disembodiment metanarrative in the Western Judeo-Christian paradigm as central to the expansion of global beliefs. This paradigm first promoted the religious myth of redemption, then legitimized the narrative of progress that underpins industrial civilization. We propose that a counter-hegemonic narrative is necessary, one that emphasizes the re-embodiment of human existence within ecological limits. Pope Francis' Laudato Si' *Encyclical Letter offers a potential stimulus for a paradigm shift towards a more empathetic, humble worldview. We argue that this shift must be ontologically open and epistemologically pluralist, laying the foundation for the emergence of global and localized ecological consciousness.*

1. Introduction: human beings as a cultural animal

In the epoch of the Anthropocene, "the human relationship with nature has been absorbed by modern economic realities" whereby "modernity represents first the appearance of nature separate from culture, followed by the gradual withdrawal of social significance from the natural world" (Rogers, 1994, p. 20). As industrial civilization continues to unrelentingly and irreversibly push its way across planetary thresholds, threatening Earth's life-supporting systems, it becomes essential to ask whether the moral guidelines of the day are appropriate for and capable of facing the challenges presented by the Anthropocene. Andrew Hoffman, author of *How Culture Shapes the Climate Change Debate*, states that "we cannot recognize the environmental problems created by our way of life, nor can we develop solutions to address them, without first facing and changing the beliefs and values that have led to them" (Hoffman, 2015, p. 15).

This article proposes an original interpretation of the process of sociocultural change that took place in Western countries over the past centuries and that originated the multiple crises of the Anthropocene. We argue that such a historical process unfolded around psychological motivations for human culture generally, and Western societies specifically. We explore how systems of knowledge grounded in grand-metanarratives, such as religion, helped the dominant belief system to evolve over time without compromising social cohesion. Finally, we discuss how metanarratives could eventually help to shape ecologically conscious belief systems by pursuing consilience between different forms of knowledge, including spirituality and religion.

The article is organized as follows: section two introduces and investigates the aspects of Western culture leading to the worldviews underpinning the Anthropocene. By adopting an existential psychodynamic framework grounded in Terror Management Theory, we explore how culture can be seen as "an adaptive function by a creative misrepresentation of reality to preserve psychological equanimity in response to the uniquely human awareness of death" (Solomon et al., 2003, p. 25). The third section of the paper identifies the "master-model" as the specific ethos of Western worldviews that emerged to offer people a solution to the existential paradox through a permanent quest for disembodiment, while simultaneously ensuring specific configurations of social reproduction and power relations. We explore how religious grand-metanarratives encompass these ethical premises as redeeming stories of salvation conveyed in the modern science's concept of progress. We therefore individuate in a consilient ethics of conscious limitedness the necessary element to imagine and enable the transition towards narratives capable of breaking the primacy of the "master-model" legacy.

2. Awareness of death and the Anthropocene

By imbuing reality with abstract, symbolic meanings, modernity can be characterized as a "quest to not only overcome and leave behind the constraints of living processes, but to ascend to a realm of reified abstractions from the perspective of which these constraints are invisible" (Gare, 2013, p. 328). This leads radical environmentalist and writer Dereck Jensen to proclaim that the culture of modernity's "problem lies above all in the belief that controlling and abusing the natural world is justifiable" (Jensen, 2006, p. 12).

In 1973, cultural anthropologist Ernest Becker published the Pulitzer Prize-winning book The Denial of Death which examined the critical role the

awareness of death plays in the daily affairs of human life. Building upon the works of Otto Rank, Norman Brown, Carl Jung, Sigmund Freud, Søren Kierkegaard, and many others, Becker identified a juxtaposition that persists between the uniquely human awareness of death and our basic biological predisposition for survival. The advanced cognitive capacities of our ancestors, signified by the emergence of self-reflective consciousness, render human beings aware of the fact that we exist. To be alive, and to know that we are alive, brings about the unfortunate realization of our finite duration. What's more, death can occur at any moment, for reasons that cannot be controlled or anticipated.

Becker believed that this dreadful reality is a potentially paralyzing position for an animal to be in, but our ancestors overcame this predicament by constructing and maintaining cultural worldviews: humanly constructed beliefs about reality that are shared in groups to minimize anxiety by providing "ways for humans to believe they are significant enduring beings in a world of meaning" (Greenberg and Kosloff, 2008, p. 1882). By maintaining faith in a cultural worldview and meeting the cultural standards of value prescribed, humankind's existential predicament is mitigated by way of symbolic death transcendence, providing comfort in the fact that we are more "than mere animals fated only to obliteration upon death" (ibid).

2.1 Terror Management Theory: an empirical framework

Although Becker's work was awarded the Pulitzer Prize in 1974, his writings were largely dismissed by academics as either untestable or wildly speculative (Solomon et al., 1998). But in the early 1980's, Terror Management Theory (TMT) was developed within the field of social psychology specifically to test Becker's hypotheses (Greenberg et al., 1986). By examining people's relationship with death in Western societies, TMT has identified three key findings: reminders of death provoke an exaggerated form of a belief or behaviour of cultural value; if a belief or value of cultural significance is threatened, death awareness is increased; and if beliefs or values of cultural significance are reinforced, existential anxiety is temporarily eliminated (Hayes et al., 2008). Furthermore, the provocation of negative thoughts such as dental pain, loss of limb, paralysis, or social exclusion could not consistently account for the empirical realities observed in TMT - nor could mood or physiological arousal, indicating the unique psychological influence death facilitates (for reviews see: Landau et al., 2004; Solomon et al., 1997; Burke et al., 2010). Examples in TMT research show that intimations of mortality have been found to: impel reckless driving

(Taubman-Ben-Ari et al., 1999); provoke support for extreme military interventions (Pyszczynski et al., 2006); influence greater optimism about the results of a national soccer team (Dechesne et al., 2000); increase preference for a charismatic political candidate (Cohen et al., 2004); increase food and drink consumption, particularly for those with low self-esteem (Mandel and Smeesters, 2008); and provoke derogation and even aggression towards worldview-threatening others (McGregor et al., 1998). Overall, TMT has found that "brief reminders of mortality have consistently led to efforts to bolster the psychological structures, cultural meaning, and self-esteem that are theorized to protect humans from existential mortality concerns" (Martens, 2004, p. 1525).

Confidence in one's worldview and its ability to protect the mind from anxiety highly depends on consensual validation from others. A broad social consensus is therefore essential in supporting a specific worldview. However, the "mere existence of divergent worldviews undermines this consensus, and therefore threatens faith in the absolute validity of one's worldview and reduces its anxiety-buffering effectiveness" (Pyszczynski et al., 2006, p. 329). Admitting legitimacy of an alternative conception of reality necessarily undermines faith in one's own belief system, exposing oneself to the very anxiety these cultural meaning systems are constructed to mitigate. From a TMT perspective, "the ongoing ethnic strife pervading human history is in large part the result of humans' inability to tolerate those with different death-denying visions of reality" (Solomon et al., 2000, p. 201). This perspective aligns with social psychologist Leon Festinger's (1957) cognitive dissonance theory which emphasizes the importance of maintaining psychological consistency when encountering new information that may contradict personal values or beliefs. Cognitive dissonance is a "motivating state of affairs" where a person is compelled to change opinion, behaviour, or perception when encountering two inconsistent items of information in order to produce or restore consistency (Festinger, 1962). TMT's perspective on conflicting worldviews is also paralleled by the backfire effect, a phenomenon wherein "people counterargue preference-incongruent information and bolster their pre-existing views" (Nyhan and Reifler, 2010, p. 308) which may lead to "more attitudinally congruent information in mind than before the debate" (Lodge and Taber, 2000, p. 209). Confirmation bias is another term used in the psychology literature referring to the "seeking or interpreting of evidence in ways that are partial to existing beliefs, expectations, or a hypothesis in hand" (Nickerson, 1998, p. 175). Although the terminology may vary, the phenomenon remains: "people are motivated to maintain faith in and conform to cultural prescriptions of value because such views imbue the world with meaning, order, and stability and thus aid in the vital management of concerns about one's

inevitable mortality" (Grabe et al., 2005, p. 33). Terror Management Theory offers a distinctively integrated account of social psychological phenomena including prejudice, altruism, conformity, terrorism, political and aesthetic preference, and interpersonal relations. The theory asserts that a wide range of behaviours can be better understood as "attempts to maintain meaning and value in the ultimate service of managing deeply held mortality concerns" (Landau et al., 2006, p. 131).

The TMT framework can also be extended to understand motivations behind economic behaviour among culturally distant societies. In exploring the relationship between money and existential fear, four studies found that death reminders amplified the value attributed to money, increased the appeal of and desire for money, and participants also experienced a reduced self-reported fear of death simply by having them count money in their hands (Zaleskiewicz et al., 2013). Money thus serves an explicit existential function, a finding that contributes to investigations of money's capacity to buffer feelings of social exclusion and physical pain primarily by offering a sense of power (Zhou et al., 2009). Brand connections were also found to function as an existential anxiety buffer, serving as a symbolic replacement for security, predictability, order, and even social connection (Rindfleisch et al., 2009; Fransen et al., 2008). Kasser and Sheldon (2000, p. 350) additionally observed that "death-based feelings of insecurity contributed to materialistic desires and behaviours" (See also: Christopher et al., 2006; Rindfleisch and Burroughs, 2004; Solomon et al., 2004).

2.2 Death denial in the Anthropocene

Much of TMT research has investigated the influence of existential anxiety on Western societal values and behaviours towards nature, animals, and the corporeal aspects of human existence. Empirical studies show that reminders of death were found to: decrease interest in physical sex while thoughts of physical sex increased death-thought accessibility (Goldenberg et al., 2002; Goldenberg, et al., 2000); cause people to unfavourably evaluate an essay describing human-animal similarity (Goldberg and Roberts, 2004); encourage the exploitation of natural resources such as forests for personal gain (Kasser and Sheldon, 2000); and lead to greater feelings of comfort from cultivated rather than natural settings (Koole and Van den Berg, 2004). Furthermore, reminders of human-animal similarity increased negative attitudes towards animals in the wake of thoughts of death (Beatson & Halloran, 2007), including pet owners who responded with less positive attitudes towards the average pet (Beatson et al., 2009). Death reminders

led people to disagree more with the idea that dolphins are smarter than humans, an idea that also led to increased death-thought accessibility (Soenke et al., 2018). The observed effects were not moderated by participants' gender, religious or political views, or pre-existing attitudes towards animal rights. Based on these empirical findings, TMT asserts that mortality concerns are extremely motivating in viewing oneself as distinct from animals, and that "people regulate the human body as a way to psychologically distance themselves from their animal nature and thereby deny mortality concerns" (Cox et al., 2007, p. 495; see also Goldenberg et al., 2000).

By complementing the psychological theories of motivation including confirmation bias, the backfire effect, and cognitive dissonance theory as aforementioned, TMT aids to better inform the critical purpose of cultural worldviews and the importance of maintaining faith in and conforming to the social standards of behaviour prescribed. Moreover, it becomes clear that these prescribed standards of value and behaviour advocate a particular code of morals which guide 'good' behaviour from 'bad', in line with the overarching worldview. However, how can the moral compass of individual minds guided by culturally imposed standards create habits which can quite rapidly become culturally ritualized and socially institutionalized? Loughnan et al. (2010, p. 156) highlight the morally troublesome behaviour associated with meat consumption in Australia as a specific case of cognitive dissonance "in which a belief and a practice are in conflict, creating an unpleasant emotional state that people are motivated to resolve". The apparent psychological conflict was termed the 'meat-paradox' for the inconsistent beliefs in meat consumption: although many people enjoy eating meat, it also causes harm and suffering to animals. Bastian and Loughnan (2016) use the meat-paradox to explore the motivational nature of such psychological conflicts and methods for resolution. Through the process of dissonance reduction, Bastian and Loughnan (2016, p. 1) demonstrate how immoral actions are embedded within individual minds which can ultimately "spread morally questionable behaviour within local populations, shaping societies, institutions, and cultures in ways that ultimately protect people from experiencing associated discomfort" (ibid.).

One avenue identified by Bastian and Loughnan (2016) to resolve dissonance related to meat-eating involves perceiving animals as having a reduced capacity to suffer or understand which in turn decreases concern for their welfare. An entity is considered morally relevant by the extent to which it is considered to possess mental capacities (Waytz et al., 2010; Gray et al., 2011). Dissonance is therefore only experienced to the extent that an action causes harm or suffering

to a morally relevant other. Loughnan et al. (2010) found that eating meat led participants to withdraw moral concern for animals and also led them to derogate the moral status and minds of the animals they specifically consumed. "In this sense eating meat appears to both narrow the breadth of moral consideration (fewer animals deserve it) and lessen the extent of moral concern (cows deserve less moral consideration)" (ibid, p. 158). Categorization is another process used to reduce perceived harm, a process that is extremely influential in a person's perception and experience of their social world (Rosch, 1999). Bratanova et al. (2011) present direct evidence for the role of categorization in meat-eating. Categorizing an animal as 'food' was found to reduce the animal's perceived capacity to suffer and subsequent moral standing, leading to the conclusion that "people may be able to love animals and love meat because animals categorized as food are seen as insensitive to pain and unworthy of moral consideration" (Bratanova et al., 2011, p. 193). Furthermore, Bastian et al., (2012) found that denying minds to animals alleviated negative emotions aroused by dissonance between concern for animal welfare and meat-eating behaviour.

Bastian and Loughnan (2016) suggest that the act of dissonance-reduction itself may encourage habit formation, where people begin to engage in repeated behaviour with minimal reflection which can reduce awareness of morally troublesome acts and quickly spread these morals among large populations. Martens et al., (2007) found, for example, that participants led to believe they had killed bugs in the past were more likely to kill more bugs. In order to justify past behaviour, people became more committed to killing bugs, suggesting that "further engagement in harmful behaviour served to reduce dissonance associated with past harmful behaviour" (Bastian and Loughnan, 2016, p. 6). This dissonance-based account of meat-eating provides integral insights into unethical behaviour in general, and prejudicial behaviour in particular by drawing on a number of parallels in the justification of prejudiced behaviour and the institutionalized forms of culturally embedded prejudice that have become naturalized and normalized. Haslam's (2006) review of animalistic and mechanistic dehumanization contributes to this parallel by demonstrating explicit methods used to deny uniquely human attributes to others and thus justify harmful attitudes and actions that impact a number of societal domains including racial stereotypes, sexism, people with disabilities, modern medical care practices, economic formalism, and attitudes towards immigrants.

Findings in TMT research demonstrate that mortality concerns can be managed not only by humanizing the self (Goldenberg et al., 2008; Goldenberg et al., 2006)

but humanizing the cultural group with which one identifies (Vaes et al., 2010). Mortality concerns are additionally managed by dehumanizing members of alternative worldviews (Goldenberg et al., 2009). By minimizing the moral standing of members of different cultures, the anxiety that arises from conflicting worldviews, and the dissonance that arises from harmful actions towards those others can be systematically eliminated, just as was the case for the moral standing of animals discussed above. The objectification of women, for example, provides "a relevant application of how existentially induced motivations to embolden one's uniquely human nature may induce an alternative kind of dehumanization that strips individuals of their human nature" (Goldenberg et al., 2009, p. 9). TMT offers an intriguing conceptual lens for understanding motivations behind infrahumanization, the "basic tendency for people to reserve more uniquely human characteristics for one's self and the groups with which one identifies" (Goldenberg et al., 2009, p. 9; See also: Leyens et al., 2000).

Dehumanization therefore supports the assertion that the ethics underlying the challenges of the Anthropocene, brought forth by Western modernity, can be understood as an ethics of domination, which is to say a blindingly forceful rejection of our own vulnerabilities as humans enabling us to take over control over human and extra-human natures[1]. Acting as a form of disembodiment, the quest for dehumanization associated with the quest to dissolve the entire world into one global, bureaucratized and bureaucratically imposed market and subject the whole of humanity and all of life to the supposedly autonomous dynamics of technological progress is not only a denial of justice to people and nature and blindness to the conditions for the existence of civilization, but a denial of life itself (Gare, 2013).

The problems presented by the Anthropocene, amplified by the breach in the Earth's carrying capacity and planetary boundaries, are thus a direct result of Westernized modernity's mission to dehumanize, disembody, and therefore immortalize, itself. In pursuit of a symbolically abstract version of existence, modernity has allowed for the institutionalized justification of domination and dehumanization in order for the abusive relationship between industrial society and the natural environment to flourish. The following section explores how the

[1] This observation is reiterated in Merchant's The Death of Nature in which she calls for the re-examination of "the formation of a world view and a science that, by reconceptualizing reality as a machine rather than a living organism, sanctioned the domination of both nature and women" (Merchant, 1980, p. XXI).

interpretation of the Anthropocene through Terror Management Theory (TMT), as outlined above, directly connects to the cultural and social significance of grand-metanarratives throughout the history of Western civilization. Specifically, we argue that the discursive frameworks of both religion and science have historically served as powerful tools for crafting meaningful narratives about a disembodied humanity, its fear of death, and its quest for redemption.

3. Disembodiment, religion, and redeeming storytelling

As noted by TMT theorists, "awareness of death is a unique force for humankind – one that changes the pursuit of meaning, value, and security in ways that profoundly affect the functioning of culture, ideology, and religion" (Pyszczynski and Kesebir, 2012, p. 76). In line with the empirical realities that TMT presents, Gare (2013) asserts that the mission of Westernized modernity, founded on liberal and free market ideologies, is to immortalize the human through an ever-more dematerialized economy and society by way of 'disembodiment'. Disembodiment acts as a grand-metanarrative, or a project to separate communities from their own materialities (embodied forms). Dominant social classes produce and reproduce worldviews in which communities' aspirations, ambitions, and desires are liberated from their human and extra-human limits. This translates in a perpetual race to detach mass consumption from the (visible) materiality of production and its numerous forms of exploitation, including labor, energy, and nature.

The quest for disembodiment that characterizes modernism and postmodernism, it is argued, echoes in a more extreme form the delusions on which medieval civilization was based where the military aristocracy and the clergy, defining themselves through the ideal forms of Neo-Platonic Christianity, despised nature, the peasantry and in the case of the clergy, women. This argument is used to expose and reveal the oppressive and ecologically destructive drive underlying the aspirations of the dominant classes in the modern/postmodern world to disembodiment, whether this be seen as the quest to be unbounded by time and place, to be free of dependence on labour and natural resources, to be free of the humdrum of everyday life by entering 'virtual' worlds, or, as with post-humanists, to overcome the limits of the body by fusing with technology. These modern and postmodern forms of the quest for disembodiment, it is suggested, now threaten civilization, the future of humanity and most terrestrial life (Gare, 2013). Disembodiment has allowed money to "escape into infinite speculation" (Baudrillard, 1993, p. 7), legitimized the superiority of the ruling class, brought

forth a mechanistic, reductionist scientific institution, and has reduced the common good to "nothing more than growth of GDP" and liberty as "nothing more than freedom to shop" (Gare, 2013, pp. 343-344). The narrative of disembodiment, of ultimate immortality, is an attempt to transform "the entire world into one giant economic machine, denying any significance to nature, or people, other than as a means to generate profits or as surplus to requirements and a law-and-order problem" (Gare, 2013, p. 342).

The dominant capitalistic economic system is quickly expanding its presence around the globe. Accompanied by a culture of consumerism, the materialistic lifestyle associated with capitalism is both highly addictive (Lea and Webley, 2006) and socially and psychologically corrosive (Christopher et al., 2006; Rindfleisch et al., 2009). The relationship between capitalistic values and psychological security entails that so long as the globalized market infrastructure focuses on materialistic tendencies, so too will the methods for coping with personal insecurities. This claim is fortified by Jackson (2013, p. 61) who, in discussing the link between ontological security and consumption, argues that "modern society has internalised a number of specific functions of world maintenance within the dynamics and organisation of consumerism". Furthermore, Jackson notes that although material goods have become "deeply implicated in the task of world maintenance", he finds that it is "precisely their continual failure truly to embody our ideals that makes them so successful as a strategy in the never-ending pursuit of 'displaced meaning'" (ibid.). Indeed, research investigating the institutions and ideologies of corporate capitalism show that "to the extent nations pursue de-regulated, free-market forms of capitalism, their citizens are more likely to endorse values that concern wealth, social standing and competition between individuals" (Hurst et al., 2013, pp. 257-258; See also: Kasser et al., 2007; Schwartz, 2007). Schwartz's (1992) circumflex model of values demonstrates the compatibility and conflicts between various values based on data collected across 80 nations. Values within the self-enhancement spectrum, such as achievement and power, are compatible with each other and adjacent within the model, but stand in relative conflict with self-transcendent values such as universalism and benevolence, which are situated opposite to values related to self-enhancement. These value orientations are directly correlated with different social and ecological attitudes and behaviours. For example, Hurst et al., (2013) showed that materialism is negatively correlated with both pro-environmental attitudes and behaviours. Engaging in self-enhancing values not only encourages the importance of environmentally damaging values, it also suppresses concerns for self-transcendent values associated with positive social and ecological attitudes. As demonstrated

experimentally by Maio et al. (2009), a change in one set of social values causes motivationally congruent values to increase in importance, while the importance of motivationally opposing values decreases. The mere activation of self-enhancement-oriented values such as social recognition, appearance, or financial success directly undermine social and ecological attitudes (Kasser and Ryan, 1996; Kasser and Ryan, 1993), a phenomenon that can be extrapolated from the individual to national level (Hurst et al., 2013). Of course, culture and values form the foundation of individual behaviour and the everyday dynamics of social reproduction, particularly in routine decisions such as purchasing goods, engaging with local communities, voting, and navigating other aspects of modern life. However, culture and values are not static - they are situated processes that emerge, whether implicitly or explicitly, from continually evolving historical and philosophical traditions embedded in grand-metanarratives. The following paragraph explores the diverse ways in which two major grand-metanarratives - science and religion - have shaped Western cultures and their perspectives on the relationship between humans and the Earth.

3.1 Religion, the myth of progress and the quest for re-embodiment

Lynn T. White Jr. sparked the fervent debate about the role of the Judeo-Christian worldview in generating and fostering the West's escalating mastery in technology and the exploitation of nature in his article The Historical Roots of Our Ecologic Crisis (1967)[2]. In his words:

> "What we do about ecology depends on our ideas of the man-nature relationship. More science and more technology are not going to get us out of the present ecological crisis until we find a new religion or rethink our old one. Since the roots of our trouble are so largely religious, the remedy must also be essentially religious, whether we call it that or not" (White, 1967, p. 1207).

Also known as the "Lynn White thesis," it connected the ethos of Christianity and its central role in human life during the Middle Ages to the advent of the disembodied attitude towards the natural world. The influence of his "thesis"

[2] He first gave a lecture in 1966 at the American Association for the Advancement of Science in Washington D.C. and then published this lecture in the journal Science in 1967.

was huge and enduring. White's ideas[3], and the responses to them by other scholars, frame most of the contemporary discussion regarding the nature-human dualism (Taylor, 2005). For White, medieval Christianity's progressive and unimpeachable support of technological advances, proven through medieval manuscripts and illustrations, and fuelled by the Book of Genesis story claiming a supposed supremacy of humans over nature, were decisive in the dislocation of Western anthropocentrism. Many biblical scholars vehemently argued that White misinterpreted the Genesis story and the genuine Christian spirit of stewardship. Even so, his hypothesis prevailed. However, what we found intriguing is that not much attention was given to his conclusion and recommendation, which, for us, were the most critical part of his argument for moving forward. The debate has focused around the hypothetical cause, and not around the possible recommended remedy. White concluded that, notwithstanding, religion is the answer to our environmental problems.

When confronting the ethical challenges of the Anthropocene, Schmidt et al. (2016) emphasize the importance of working with the world's axial religions (i.e. Christianity, Islam and Judaism) to find a common ground: "we cannot simply discard as inadequate all previous forms of cultural knowledge transmission" (ibid., p. 9). Following White's line of thought, Schmidt et al., also agree that ethics in the twenty-first century cannot rely exclusively or primarily on the scientific narrative, since it might reproduce colonial premises based on the Western, reductionist "master-model". They determined that there are in fact numerous reasonable ways of acquiring knowledge. Recognizing the richness of these alternative knowledges is critical for the comprehensive appreciation of ethics in the Anthropocene. Thus, religions (as collective forms of individual spiritualities) have invariably a central role to play.

The present socio-ecological crisis is the result of the splitting of two worldview stories–one based on a holistic, inclusive, comprehensive, realistic, embodied, factual and candid perception of reality, the other based on a reductionist, dualistic, fragmented, disembodied, dissembled, distorted notion of reality. Westerners decided to follow the second as the "master-model" (Schmidt et al., 2016) for progress, most prominently noticeable in the development of the different scientific disciplines and their methodologies. Between the eleventh and

[3] His ideas are also reinforced in his books Medieval Technology and Social Change (1962) and Medieval Technology and Religion: Collected Essays (1978).

the nineteenth centuries, Westerner dominant worldviews followed the ontologies of Niccolò Machiavelli, Francis Bacon, René Descartes, Galileo Galilei and Isaac Newton (Max-Neef, 2005a). Gare (2013) described these, under the scientific narrative, as dead interpretations of the world. A world where "[o]ut go sight, sound, taste, touch, and smell, and along with them have gone aesthetic and ethical sensibility, values, quality, soul, consciousness, spirit" (ibid., p. 338). The result is what Damasio (1994, p. 144) describes as humanity suffering from "a defect in the emotions that inform the deployment of logic" because emotions are "integral to the process of reasoning". Max-Neef (1991, p. 94) also describes this incompetence as lack of understanding:

> Although we know how to describe and to explain, we seem to overlook the fact that describing plus explaining does not amount to understanding. The former has to do with knowledge, which is the stuff of science, while the latter has to do with meaning, the stuff of enlightenment. The result of this confusion is that at this stage of history, we know a lot but understand very little.

The result? A Western Judeo-Christian culture that "is profoundly and tragically allergic to any self-conscious metaphysics" and that has "embraced a decadent materialism that now is undercutting life's prospects" (Brown, 2015, p. 73). It is common knowledge that religion, as an integral part of one's cultural worldview, has provided civilization meaning and purpose for life. Even though there is limited research focused only on religion and TMT, in general, TMT has attributed a significant role to religion for its ability to relieve anxiety about the inescapable reality of mortality and the hope of self-transcendence (Batson & Stocks, 2004). Rowe (2016) wrote that in order to "transform capitalism we must transform the existential fear that feeds it". In other words, we will not be able to respond adequately to the present socio-ecological crisis if we don't help people to face their emotions of fear, denial and grief that comes with the overwhelming challenge of the crisis and the underpinning existential dilemma. This must be done in a sensible and, at the same time, empowering and fruitful way (Hathaway, 2016).

Another interesting insight is brought by Selinger (2004) who wrote about the "uneasy relationship between religion and development". According to Selinger, development theory -its study and application, supported by the social sciences- has disregarded religion and the spiritual spectrum. She argues that "development cannot exist without a spiritual dimension; that is, economic development will

not succeed if people are not spiritually developed" (ibid., p. 526). And despite the fact that social, political, economic and religious systems are closely intertwined to create societies and their cultures throughout history, "[b]y ensuring that religion is kept outside the social and economic spheres, the forces of market liberalism are able to prosper, as social capital and cultural support networks (dominantly rooted in religious communities) are kept at bay" (ibid., p. 540) for the continuous prosperity and economic power of the upper classes. This reinforces the total rupture of sacred and secular that is so prevalent in the political, scientific, economic and sociological domains. On the other hand, dealing with religion in the development arena is not without legitimate concern, as a result of the historical accounts of conflict and oppression from both sides. However, its avoidance is just as toxic, resulting in the dichotomized socioeconomic system we have been deluged by. Like gender and ethnicity, religion is an intrinsic part of people's identities and should be considered in development-related issues (Ver Beek, 2000; Selinger, 2004). The relationship between religion, the myth of progress, and the quest for re-embodiment is a rich and intricate tapestry that weaves together philosophical, spiritual, and cultural themes. The myth of progress represents a secular belief in humanity's continuous improvement through advancements in science, technology, and knowledge. Within this context, the quest for re-embodiment takes on a technological dimension. Moreover, concepts of digital immortality, where minds or consciousnesses are uploaded to digital mediums, offer a new frontier for the re-embodiment quest.

In sum, the quest for re-embodiment serves as a common thread linking both religious and secular perspectives. It embodies the fundamental human desire to transcend death and achieve continuity of self, whether through spiritual rebirth or technological re-creation. This convergence of religious and secular quests for re-embodiment highlights several important interconnections. Both provide avenues for hope and meaning, helping individuals confront the reality of mortality. Ultimately, the interplay between religion, the myth of progress, and the quest for re-embodiment underscores the diverse ways in which humans seek to understand and transcend their mortality. This complex relationship blends spiritual aspirations with technological ambitions, reflecting a universal human drive to navigate the mysteries of existence and strive for a continued presence beyond the confines of our physical bodies. The following paragraph presents several arguments to further unpack this complex set of ideas. We contend that redemptive storytelling plays a crucial role in the broader framework of the ecological transition. Moreover, we argue that within existing grand-metanarratives, new ethical foundations are beginning to emerge—ones that

support a shift from disembodiment to re-embodiment—offering a potential pathway toward a more unified understanding of both the material and immaterial dimensions of human existence.

3.2. Towards a consilient ethics of conscious limitedness

This paper maintains that narratives and human culture are mutually co-productive. However, religion and the myth of progress are far more than mere "stories"; they function as ontological frameworks that shape the conditions for psychological valuation, social recognition, and, ultimately, human action—either enabling or constraining these processes. Narratives are therefore means of knowing and understanding reality. As frames to conceive and assign particular meanings to reality, narratives can therefore become enormous sources of power, sufficient to assign political legitimacy to some voices, to ban and obscure counter-stories, and eventually to enforce complex strategies of social control (Benessia et al., 2016). What we called the grand "master-model" story has been incessantly sustained by the ruling classes through their interventions in educational organizations and other public institutions (Gare, 2013). In this way the disembodied, unemotional, positivist, and mechanistic content of the master-model story is perpetuated for the benefit of these elites. And the bedrock underneath might be related directly to Terror Management Theory (TMT). These are the "inauthentic sacred stories", as Korten (2015) describes them, which have favoured the Machiavelli, Bacon, Descartes, Galilei and Newton underpinnings (Max-Neef, 2005a), to serve the interests of these elites at the expense of the rest of the population. That is, "the myth of Genesis and Prometheus become one single equation" (Max-Neef, 1992, p. 40).

The ecological transition therefore requires an ethical transition as well. Pope Francis' Encyclical Letter, Laudato si' ("Praise be to you," Pope Francis, 2015) is a quantum jump in this direction, an attempt to change White's "thesis" and related discourses. Notwithstanding some sections in the Encyclical that still deserve further in-depth discussion about anthropocentrism,[4] in general it is an

[4] For example, there are still traces of the anthropocentric dilemma in some sections of the Encyclical. An example is when it refers to the teachings of the Bible where "every man and woman is created out of love and made in God's image and likeness" (Chapter 2, section 65, pg. 47, The Wisdom of the Biblical Accounts). This is so even though the

appealing plea for ecological spirituality. Thirty-three percent of the world's population describe themselves as Christians, and in the United States alone this religious group represents 71% of the population--mostly Protestants (40%) and Catholics (21%).[5] This data is important to understand the impact Laudato si' can have. Pope Francis contended what seems at this point obvious: that a better future lies outside scientific and technological progress, and that we urgently need a bold cultural revolution. Given the complexity of the ecological crisis, we need to realize that the solutions will not emerge from just one way of interpreting and transforming reality. Respect must also be shown for the various cultural riches of different peoples, their art and poetry, their interior life and spirituality. If we are truly concerned to develop an ecology capable of remedying the damage we have done, no branch of the sciences and no form of wisdom can be left out, and that includes religion and the language particular to it.

The Pope seems to answer E.O. Wilson's (2006, 1999) well known request for consilience among the different disciplines. Furthermore, he broadens consilience to include all types of cultural knowledges and openly invites science and religion to enter into a productive dialogue to achieve a common ground from their distinctive but essential approaches to understanding reality. In the words of E.O. Wilson (2006, p. 5):

> "If religion and science could be united on the common ground of biological conservation, the problem would soon be solved. If there is any moral precept shared by people of all beliefs, it is that we owe ourselves and future generations a beautiful, rich, and healthful environment".

Wilson (1999) emphasized the need to achieve wisdom, and this entails an educational system that can help humanity synthesize -what the ecological economist Max-Neef (1991, p. 94) describes as understanding the "stuff of enlightenment". In other words, see reality as it is, grasp the larger picture. As the scientist Wilson proclaimed (1999, p. 294)), "[w]e are drowning in information, while starving for wisdom". Likewise, the theologian Pope Francis urgently pleads for "a humanism capable of bringing together the different fields

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Encyclical condemns anthropocentrism, as the "Promethean vision of mastery over the world" in Chapter 3, section 115, p. 86, The Crisis and Effects of Modern Anthropocentrism.

[5] Data from Adherent.com: National & World Religion Statistics – Church Statistics – World Religions: Retrieved on October 10, 2016: http://www.adherents.com/. Also, from Pew Research Center: Religion and Public Life. Retrieved on the same day from: http://www.pewforum.org/religious-landscape-study/

of knowledge, including economics, in the service of a more integral and integrating vision", because "specialization which belongs to technology makes it difficult to see the larger picture. The fragmentation of knowledge proves helpful for concrete applications, and yet it often leads to a loss of appreciation for the whole, for the relationships between things, and for the broader horizon (…)" (Pope Francis, 2015).

In the book The Tao of Liberation, Hathaway and Boff (2012) describe how the story of the universe, as revealed by science, could be a narrative conveying a "process of revelation that can guide and orient our lives" (ibid., p. 197). It is fascinating to witness how science, religion, and spirituality,[6] after centuries of bifurcation, are again finding a common ground. We are awakening to the fact that science "without a soul" is a misfortune and, on the other hand, a solely spiritual approach in a complex world is not feasible (Capra and Luisi, 2014). Buddhist humanistic philosophy can teach us to deal with the material and sensual worlds and satisfy basic human needs in harmony with the environment. This fundamentally departs from the individualistic, self-interested, utilitarian and detached maximiser of worldly gain, Homo economicus (Daniels, 2005; Timmerman, 1988). Even the late and renowned economist E.F. Schumacher (1973) was able to incorporate Buddhist's worldview using the "Right Livelihood" as the core goal for economics: earning a living in a way that does not cause harm, and that follows the ideals of love and compassion. The concept

[6] We think it is important, at least in a footnote, to differentiate spirituality from religion. The word "spirituality" comes from the Latin word spiritus, which means "breath", from the breath of life. It is a broad, inclusive concept, encompassing a wide range of perspectives. In general, it includes a sense of connection to something bigger than ourselves, and it involves a search for meaning in life. It is a universal cultural experience - often described as "something that touches us all": mystical, sacred or transcendent moments; a deep sense of aliveness and interconnectedness with the whole, the cosmos, the "something" that is greater; the sensation of oneness or absolute unity; also, the fascination with the mystery or the miracle of existence. On the other hand, religion is the organized aim to understand and interpret the spiritual experience through a system of doctrine, practices and worship by a group or a community of people that follow the teachings of a spiritual leader. It comes from the Latin word *religare*, which means "to bind" and *religio* which means obligation, bond, reverence. Yet, religion and spirituality, while not homologous, are intimately intertwined. Spirituality can exist outside conventional religious practices, but it is almost impossible to ponder spirituality without contemplating religion (Capra and Luisi, 2014; Hathaway and Boff, 2012; Boyd, 2012).

was further developed by another economist from the Global South, Max-Neef (1991), with his Human Scale Development proposal: an economic system based on measuring the satisfaction of fundamental human needs, instead of the Gross National Product (GDP), that nurtures self-reliance, and provides an organic articulation of people, nature and technology. On the other hand, Taoism can teach us the Tao, in English, the Way: the flowing, changing, spontaneous path of life aligned with the natural, harmonic rules of the constantly transforming cosmos. And here, the person and the Tao become One. Dualities disappear and are replaced with polarities: subject is also object, spiritual is also material, and human is also the environment. What is inside and what is outside is like one. This sense of oneness is not only a mystical experience but is also a wondrous revelation of modern physics (Timmerman, 1989; Miller, 2013; Capra, 2010), a perfect example of embodiment. Last but not least, indigenous knowledge can teach us about "strong transdisciplinarity": how to attain understanding by fusing empirical knowledge obtained from observation, traditional knowledge passed from generation to generation, and revealed knowledge acquired from spiritual insights (McGregor, 2004; Brant Castellano, 2000). This is a pivotal step towards fostering thinking in systems for a re-embodied era of holistic understanding.[7] Strong transdisciplinarity could also lead us to "the progressive, firsthand acquaintance with the virtually of self" for the "ethical-know-how" (Varela, 1999, p. 63) we desperately need in the West.

[7] Max-Neef (2005b) understood the unification of this knowledge as "Strong Trandisciplinarity". He summarized it in what he called the three Laws of Trandisciplinarity, which go beyond embracing just levels of organization to embracing levels of reality for a genuine transdisciplinary education based on systemic thinking and the appreciation of complexity. The first law is that "the laws of a given level of reality are not self-sufficient to describe the totality of phenomena occurring at the same level". The second is that "every theory at a given level of reality is a transitory theory, since it inevitably leads to the discovery of new contradictions situated in new levels of reality", thus knowledge is always an open, changing process. Max-Neef explained that humans can access new levels of reality through the different levels of perception, with each level of perception corresponding to a level of reality. These levels of perception can be activated and enhanced through the practices of meditation and mindfulness, common practices in Taoism and Buddhism to achieve enlightenment. The third law is related to oneness, the unity of all things, and is based on the teaching of Lao Tzu, the Father of Taoism and the reputed author of the Tao Te Ching: "Only because of what is not there, it is possible that there is what is there; and only because of what is there it is possible that there is not what is not there."

We can relate this new merging of science and religion to what has been referred to as Goethean science, from the work and writings of the German writer Johann Wolfgang von Goethe, dating back to the eighteenth and the nineteenth centuries: from the quest for accumulating more and more dissected data using a quantitative, disenfranchised language, to a quest for comprehending the integrated whole, which includes the qualitative contribution of the researcher or observer through his or her genuine perception of the boundless reality (Myers, 1997). As Max-Neef (2005b, p. 10) quoted from Jeremy Naydler (1996),[8] for Goethe:

> "[...] science is as much an inner path of spiritual development as it is a discipline of accumulating knowledge of the physical world. It involves not only a rigorous training of our faculties of observation and thinking, but also of other human faculties which can attune us as to the spiritual dimensions that underlies and interpenetrates the physical. Faculties such as feeling, imagination and intuition. Science, as Goethe conceived and practiced it, has as its highest goal the arousal of the feeling of wonder through contemplative looking (Anschauung), in which the scientist would come to see God in nature and nature in God."

Nowadays Goethean science can be related to quantum physics, and what Capra (2010) described as modern physics with a heart. Also, it can be related to Theology of Nature and Nature Theology, as described by Peters (2005), and the different non-western ancient cosmologies. Moreover, it can lead us to a new age of re-embodiment, what Berry (1991) called the Ecozoic Era. This means consolidating or synthesizing, as Wilson (1999) described it, the detached, self-contained disciplines as they are taught in schools and universities. Even the concept of spirituality is consistent with the notion of the embodied mind, introduced by the Chilean biologist, philosopher and neuroscientist Francisco Varela in the 1990s, and now being developed in the cognitive sciences (Capra and Luisi, 2014). Eastern religions, specifically Buddhism and Daoism, as well as indigenous knowledge around the planet, can shed some light on how to "shift

[8] Systems thinking or thinking in systems is holistic, integrated thinking which focuses more on understanding the wholeness of an organism or a phenomenon, including its connectedness, relationships, networks, patters, and context, in addition to its parts (Meadows, 2008; Capra, 2014).

the gears" of our Western disembodied culture, commencing with our educational and religious spheres. In these other ontologies we can find authentic embodied wisdom, which is what we need for effective ethics in the Anthropocene, because "ethics is closer to wisdom than to reason" (Varela, 1999, p. 3).

4. Conclusions

Recognizing the multiple natures of realities and narratives is the first step toward the re-configuration of the human-Earth relationship, without falling into the same mistakes of mainstream scientific and religious narratives: epistemic arrogance and the claim for a monopoly on the truth (Sideris, 2007). Thomas Berry (2003, p. 77) laid it out succinctly:

> "It's all a question of story. We are in trouble just now because we do not have a good story. We are in between stories. The Old Story---the account of how the world came to be and how we fit into it—is not functioning properly, and we have not learned the New Story".

Religion and education are the foundation of the "grand-story" that is essential to change. This is because both are underlying forces in our cultural system, and as such are very important to help reinterpret and change the dominant story that feeds the system. They can help change the system's information flows, rules and goals for a paradigm shift, based on Meadows' (2008) proposals for systemic leverage points.[9] So, from an ethical standpoint, the recommendation is to start from here, focusing perhaps on two basic transcendental questions, based on Max-Neef (n.d.), and Gare (2008a,b): What is life or the purpose of life? and What is our role in life or why do we exist? These questions, and our constant search for their answers, are pivotal for a grounded understanding of our place in the cosmos, as well as to have an adequate and non-distorted, bipolar story of

[9] Leverage points are "places in the system where a small change could lead to a large shift in the behavior" within the system (Meadows, 2008). Meadows recommends twelve influential areas to change the behavior of a system, and they all complement each other. A change in one will most probably provoke a change in another, like a chain reaction. Information flows (who does and does not have access to reliable information, missing information and adding or restoring information), rules (the scope, the boundaries or established limits) and the goals of a system are important leverage points to help trigger a paradigm shift.

who we really are. Even though we might never have a concrete answer for these questions because "our being is the product of an absolute improbability of being" (Max-Neef, n.d.), "their greatest value is in the questions they raise than the questions they answer" (Gare, 2008a, p. 14). The quest for the answer to these questions is rarely included in the curricula of the different disciplines taught in school that are intended to provide worthwhile existential goals and rules for life, and a reason to crave for learning and have a career.[10] As E.O. Wilson (1999) framed it, to what end? What is our collective meaning and purpose? In the dawn of the seventeenth century, William Shakespeare also made it perfectly clear in his tragedy Hamlet: "To be or not to be, that is the question" is the famous first phrase of Prince Hamlet's soliloquy in Act III. What is subjective, qualitative and embodied -the opposite of what is objective, quantitative and disembodied- has had no place in most disciplines since the Age of Reason, in spite of the fact that "[t]here is a world in which you have to see in order to believe, and there is another world in which you have to believe in order to see" (Max-Neef, 2005b). We need societies capable of feeling wonder and awe for life and the world around them.

For centuries, we thought about the Earth. We were the subject of thought, and the Earth was the object and content. Now, after becoming conscious of the fact that the Earth and humanity form a single reality, it is important that we come to think as the Earth, to feel as the Earth, to love as the Earth (Hathaway and Boff, 2012).

What therefore becomes essential is the re-embodiment of the human mind, body, and soul and thus our models of reality (Gare, 2013 p.349; see also: Vatn, 2005; Daly and Cobb Jr., 1994; Westra et al., 2008). The Second Law of thermodynamics is a universal force that has yet to be integrated into the master-models that narrate human life today, and yet "we owe our very existence to the borrowed available energy of the Earth that makes up our physical being and that keeps us far away from an equilibrium state of death and decomposition" (Rifkin, 2009, p. 41). The Second Law is the fundamental reason why life entails death (Coffman and Mikulecky, 2012), and as the uniquely solitary species that is aware

[10] Only, and as a commonsense conclusion, we suppose they are as incorporated in the theological, philosophical and human behaviour-related disciplines, as they are in their discourses.

of this inevitable truth, while also maintaining sole responsibility for driving global environmental change at unprecedented levels, it is essential our species comes to terms with these realities through a profound shift in our death transcending methods (Solomon et al., 2003). Coffman and Mikulecky (2012) assert that the recognition of death as an inevitable part of life has generated a cognitive necessity for faith, which can be redirected towards a deeper metaphysical or spiritual relationship with life itself, in harmony with science, to transcend the individual experience and to persist the 'soul' of humanity. "We need this faith not only to overcome fear of death, but the repression through objectification that is at the root of so many of our problems. We need faith that, with time, humanity will develop a healthier mythology and culture – a better appreciation for the subjectivity of the world, and thus a greater empathy for the other" (Coffman and Mikulecky, 2012, p. 128). To achieve this paradigm shift – from disembodied, objectified, ontologically arrogant narratives towards a respectful, pluralist, inclusive view of reality – education, science and religion undoubtedly have a decisive role to play. In the words of Giuseppe Barbiero (2016): "If the moral value of a pro-biophilic choice offers an advantage in terms of fitness [...], then nonviolence will be expressed, sooner or later, as a human generalised behavioural pattern. It is simply a question of time". On this matter, we share Barbiero's view.

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S.S. and S.M. conceived and wrote section 1. S.S. conducted the literature review and developed section 2; S.S. and S.M. wrote section 3; M.J. wrote sections 3.1; S.M. and M.J. wrote sections 3.2 and 4; S.M. provided critical feedback on all sections and revised the final draft.

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