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Weal: the universal core of human well-being

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Abstract: Well-being is a formative concept of our times, one of the most widely used constructs in the social sciences, publicity, political and lifestyle discourses. Notwithstanding its commonness the term well-being remains elusive, the disagreement regarding how to properly understand and measure well-being persists. Present paper proposes an attempt to reorientate the discourse on well-being by the introduction of a *tertium datur*¹ between the two extremes of ad infinitum culturally variable and individually malleable and the rigidly materialistic, biologically and by natural scarcity determined interpretations of human nature.

Weal defines a singular domain in which human life is possible, sustainable and flourishing. Most other available constructs with comparable aspirations including happiness, desire theories, Quality of Life (QOL), subjective well-being (SWB), and objective lists carry Western cultural biases and lack ontological rigour.

Weal is the unitary domain in which human communities balance between self-sufficiency and flourishing in a sustainable way. The descriptive approach to weal, mapping it under the guidance of discrete scientific disciplines reveals a limited set of cardinal aspects, the cardinal needs (CDN). To serve the purpose of reorientation, weal is operationalised as a domain in multidimensional space, each dimension encompassing an optimal level of availability of the fundamental satisfiers between the two extremes of drastic insufficiency and harmful excess.

The cardinal needs are briefly presented as assessed fundamental by corresponding research, with some elementary references illustrating their non-infinite nature.

Keywords: wellbeing, evolutionary anthropology, human being, human need, community, environment

1. Introduction

The quest for a general definition of well-being (WB) is and remains futile. The disagreement regarding how to properly understand and measure well-being persists (Clifford, Costanza, 2006; Cooke, Melchert & Connor, 2016) - well-being is not singular, people, communities, and civilisations live well in manifold ways.

Present paper will argue that well-being is best approachable as consisting of a universal human core (a “oneness”) and a culturally variable and individually differing specificity of flourishing (a “multitude”).

Well-being is the state of living well. Well-living delivers a more precise meaning (Gasper 2004; 2007), nonetheless well-being is the established construct for general use and scientific inquiry as well. Well-being is prone to misinterpretation as an individual achievement. The human being lives well only and only if bonded to human relationships, related to a place, incorporated in nature. Bonding, the dependence on the community and determination by nature is the product of evolutionary history, the stringent interdependence of human generations and their environment.

¹ Tertium datur as the “middle ground”, see e.g. Frey, 1992).

They shape the ways humans can live, and enforce the dimensions and scale the levels of benign and malign factors.

The inquiry into the human good is proliferating under many construct approaching the inevitable human oneness from partly contradicting, partly overlapping angles, without offering the ontological foundation weal proposes. These constructs include ill-being, the quality of life, happiness and welfare. Well-being has two basic interpretations (Ryan & Deci, 2001). The ethical linchpin of limitless economic development, modern utilitarianism is associated with Epicurean hedonism. Hedonism advocates maximum pleasure and minimum pain regardless how one gets them, irrespectively the effort invested. In this sense well-being is attained by being given only, reducing the human being to his or her “receiving end”. Aristotelian eudaimonism claims that a well-lived life leads to flourishing regardless of how one feels in the course of attaining it. Virtuous action is striving toward excellence based on one’s potential. Thus well-being cannot be captured as hedonistic “happiness”, without being defined as vital, full functioning as a complementary approach (Ryan, 2009).

The opposition of hedonism and eudaimonism as individual-centered interpretations of well-being may be resolved by an ecological approach focusing on communities living in localities. Social groups develop well-being autonomously (Webb & Wills-Herrera, 2002), individuals generating and maintaining a life worth living on their own have never been around.

Standard inquiry into well-being includes the subjective and the objective approaches. Objective lists of essential needs are proposed from many corners of research (for comprehensive reviews see). The objective lists, however do not escape two fallacies, either remain idiosyncratic or proffer procedures (workshops, questionnaires or vote) that bring back cultural biases or subjectivism.

Quality of life and happiness are alternatives inadvertently based on a Western individualistic value system (Gill & Feinstein, 1994; Lu, Gilmour, & Kao. 2001; Belliotti, 2004, Griffin. 2007).

Subjective well-being (SWB) is a rich research field of cognitive and emotional reflections of one's quality of life. The elaborated construct of SWB correlates well with measurable bodily reactions and health, and is capable of making longer term life-satisfaction measurable. The use of SWB evaluation scales leaves freedom for individual perception and claims not to impose external norms or values. SWB, however remains biased by collective civilisational values as that of positive affect, individual judgement or happiness (White & Eyber, 2017). Functioning and growth are often invariant of personal happiness, altruism, striving for goals beyond one's own interest may be accompanied by long periods of mainly negative affect or unhappiness (Diener, Suh, Oishi, 1997).

Well-being presupposes functioning, with two basic aspects in any society, health and autonomy (Doyal & Gough, 1991, p. 49). All people require the fundamental human nutriment for their health and growth. Substantial research and theoretical work corroborate that well-being and quality of life increase when the security of sustenance is provided, the competence to be efficient ensure self-esteem, human subjects are connected to other significant ones and a level of autonomy is achieved these four sets of needs are satisfied and decrease when they are not (Kasser, 2002, p. 24). Needs involve material, relational and subjective domains (White, 2010). Life is worth living when a vital core human needs is provided for, (Alkire, 2002), the essential psychosocial nutriment, competence, relationships and autonomy beyond sustenance are also vital (Baard, Deci & Ryan, 2004).

Life is a symbiotic arrangement enfolding in complex ecologies. The living of humans akin any other living beings is exchanging vital substance with nature, maintaining a supportive symbiosis with an array of other living beings, living up to bonds to kin and exerting efforts to sustain living. A supportive natural environment, access to material resources, the nearness to fellow beings, and life sustaining activity are ubiquitous prerequisites of well-being.

Human life is embedded in the biophysical reality of the living (Princen, 2001), enfolds by default as that of human communities bound by shared identities related to a territory with access to the natural resources contained therein. This fundamental capability of living has an ontological precedence over peoples, cultures, and (historical) ages. Culture necessarily parasitises on this self-

sustaining and reproducing capability of human communities that have been capable of survival and flourishing on their own as “sociomes” without any or non-systemic interaction or exchange. Cultures emerge, become hypertrophic upon this underlying oneness of human proliferation and eventually collapse (Tainter, 1998, pp.193-199; Diamond, 2005).

Human well-being enfolds under similar conditions under which our hominoid ancestors evolved (Deaton, 2014, pp. 73-77) and important lessons are learnt from comparative studies of primates on the generic nature of human community orientation, intelligence, politics and sociality (de Waal, 2002).

An ever-widening and deepening research underpins the fundamental link between human-well-being and communality. Human communities are self-sustaining and potentially flourishing² in a symbiotic relationship with nature (Boyden, 2016). Individual, family and community are inseparable referents of well-being (La Placa, McNaught & Knight, 2013). Since the first proposition of inclusive fitness (Hamilton, 1964), many theoretical formulations delivered proofs including cooperative breeding (Hrdy 2005; Mace & Sear, 2005) group augmentation (Bergmuller *et al.*, 2007; Kingma *et al.*, 2014) reciprocity (Bowles & Gintis, 2014) and sharing (Belk, 2010). Group-mindedness is distinctively human, cultural conventions, norms, and institutions are all characterised by collective intentionality (Tomasello *et al.*, 2012) and eusociality (Chung 2016).

Human communities generate a feeling of belonging or sharing, a sense of mattering to a group enjoy integration and fulfilment of needs, as well as a shared emotional connection to history, common places, time together, and similar experiences (McMillan & Chavis, 1986). Beyond satisfying the needs of its members, communities evoke a sense of responsibility. The group matters to its members, humans invest into while profit from belonging to communities (Nowell & Boyd, 2010; McMillan, 2011).

The communal determination of being is encoded in culture (Harris, 1979, pp. 141-142). Culture is the institutionalised imprint of shared human experience (Keesing, 1981, p. 68). Culture embodies in discourses, rules and wisdom, recommendations and prohibitions about how to live and how not to live well (Gilbert, 2004). Culture reflects to the natural environment and the history of the community as a shared set of beliefs, procedures, legitimate knowledge and taboos. The developing individual enters a “community of minds”, a space occupied by people who are related by common purposes and understandings (Nelson *et al.*, 2003).

The shared core of human being is revealed by ‘reduction’ inspired by phenomenology³. Peel off all cultural contingencies including money, codified law, nations, particular values and commandments, science, religion, ethnicity, recorded history, education, morality, wants and desires of the individual: the residual is what every human has always lived up to, the human core, a fundamentally human way of being.

The entire mankind has hunger, thirst, defecates and becomes sleepy. Every man and woman makes use of materials and objects, requires new and stimulating sensory experiences. All humans require an atmosphere for breath, clean water, a thermal range within which they feel comfort, limited radiation, and a sinking capacity for their excrement, and waste. The life of any human being enfolds in a natural setting, with its meteorological, geological, virological, botanical and zoological boundary conditions for human life that symbiosis with nature only can ensure. All human beings need other human beings to be around. Every human is born into families or clans,

² Flourishing, the contemporary synonym of Aristotelian ‘eudaemonia’ is loosely understood as the end (telos) of human life (Kleinig & Nicholas, 2013) with strong ethical underpinnings and an inevitable resonance to global sustainability concerns (Ott, 2004). Flourishing implies well-living on sound foundations. The language used in this paper intends to express the ontological precedence of weal over flourishing. Weal is the enabler of the freedom to flourish as humans (Kraut, 2009, pp. 3-6), in individually or culturally preferred ways, and itself not subject to human choice.

³ Husserlian phenomenology, see eg. Moran, 2000, p. 126.

belongs to groups and communities, and lives in an actual place with given boundaries and territorial conditions. Each human being wants to be someone with a personal significance, having an identity, making a meaning of his/her life and is striving for maintaining his/her life as it becomes habitual for him/her within his/her material, environmental and social embeddedness.

The artificial products, amenities and cultural artifacts are always superimposed upon this imminent setting without ever being able to replace its substantiality. Below the cultural or technological/economic variety of additive amenities and large scale institutions there is the fundamental phenomenon of being human.

The manifold approaches to developing comprehensive lists of basic/fundamental human needs have many coincidence and repeat similar aspects under different names, as they work around this fundamental unity. For a detailed overview of cross-references with the cardinal needs, see Table 1.

2. Weal, the underlying foundation of well-being

Beyond well-being, the construct in general use, interpreted differently over the ages, cultures and disciplines (Gasper, 2007; McNaught, 2011, pp.7-23; La Placa, McNaught & Knight, 2013), weal is proposed as the underlying foundation of well-being. Weal stands for the core of socialised reality as framing well-being for the individual beyond the possibility of deliberate choice. The descriptive approach to weal, mapping it under the guidance of discrete scientific disciplines reveals a limited set of cardinal aspects, labeled here the cardinal needs (CDN). Cardinal expresses the fundamental reorientation weal can bring about, needs deliver the sense of *sine qua non*.

Human being is a limited venture, limited in time, space, knowledge, resources and freedom. The concept of human well-living as an open infinite opportunity blocks the deeper understanding of the human condition. Well-being cannot improved endlessly by the addition of resources and services and taking away efforts and chores. Weal breaks with incrementality. Once within it one will not aim to live “more well” in any single direction. Moving away from the middle of the domain defined by the qualifiers of WB in terms of accessibility and effort well-being will be thwarted, the expenses, burdens, harms and imbalances grow. The limitless accumulation or the abstraction of any factor will diminish well-being on the longer run⁴.

Weal defines a unitary domain in which human life is possible, sustainable and flourishing. Weal is enclosed in a multidimensional space of cardinal human needs (CDN). Within this domain human life is self-sustaining, and the propensity towards living well for the great majority is high. Weal entails a high probability of living well for a substantial majority of a community. For living well in a sustainable manner, access to fourfold resources: materials, physical, biological and social factors must be available at the expense of mean effort. Whereas well-being is most likely for most people in the centre of the domain, yet it remains possible for extreme people at extreme expenses at the boundaries.

Weal is conceived as a oneness mapped along eight cardinal needs, each satisfiable by two elementary satisfiers. The needs, approached as aspects instead of analytically isolated factors do not require mutually exclusive definitions. To serve the purpose of reorientation, weal is operationalised as a domain in multidimensional space, each dimension encompassing an optimal level of availability of the fundamental satisfiers between the two extremes of drastic insufficiency and harmful excess. Weal seeks a balance among material and social aspects and allows for cultural and individual uniqueness in attaining human flourishing.

⁴ The idea of the inverted U-shape function of well-being of basic satisfiers was proposed in the vitamin model by P. Warr and featured in the Theory of Human need (Doyal & Gough, 1991, pp. 162-163).

The qualifiers of weal qualify livelihoods of communities. Livelihoods are “sociomes” - symbiotic ecosystems sustaining a human community, related to a territory⁵. Humans are brought up without exception within similar bonds. All individuals come from communities, discrete places and cultural milieus. Human communities have always been the unitary subjects of human being. No individual was ever living well without being related to, and determined by his or her relationships to other humans, as well as places and ecosystems.

Corollaries of human being are uniform: humans need nutrients, a liveable ambience, a material flow of objects and consumables, bodily and mental action, place and shelter, generational continuity, other humans, social order and a calculable range of events beyond control. Every human being, everywhere, at any point in time of human history. This is the core of being human.

One can conceive it as a domain balanced in all the above, the fundamental aspects of human being. None is more substantial than the other, it comes with being human and changes on a time scale far beyond human concern.

As a balance of eight fundamental aspects, the domain is governed by effort, access and stimulus. The excess of access (incapability of maintaining the balance) on the low side results in deficiencies and harmful stress, the excess of access on the high side (too easy to maintain the balance) results in disinterest, depression and unsustainable compensatory mechanisms.

Within the domain of weal life is fundamentally self-balancing, granting the satisfaction of the cardinal needs by a plausible level of effort in terms of physical strain, risk and variability, intellectual achievement, human conflict, stress and safety. For an overview of the cardinal needs with reference to syndromes of maladaptive excess and harmful deprivation see Table 2.

Life is a self-sustaining arrangement, all living organisms possess a generic capability to endure and prevail in their respective ecologic niche (Damasio, 2003, pp. 201-204). One may say that the substance of life is life, and not materials, products, and services converted into life. Life has always been there, its most striking feature is its continuity by adaptation to changing environments.

Biological being is governed by the shaping forces of evolution and the conservative power of homeostasis, more recently reinterpreted as allostasis. Homeostasis is the conceptual framework (Cannon, 1932) of the self-sustaining aspect of life, shared in a way or other with all living creatures. A biological form of life, the human organism manages a multitude of highly complex interactions to maintain balance by keeping all parameters vital to life within a normal range. These interactions within the human organism entail compensatory changes supportive of its physiological functioning. This regulating function is essential to the survival of the individual and the human species.

Human behaviour including sociality is an extension of the allostatic apparatus of human life. The more extended approach of allostasis implies the physiology of change by the behavioural and physiological anticipation of future events (Sterling and Eyer, 1988; McEwen, 2005). The cephalic anticipatory regulation of the internal milieu ensures the adaptation of optimal ranges maintained to the actual environment. Serving the maintenance of life, various aspects of allostasis include the mental, emotional and physiological balance of the human being. As the human being is inherently social⁶, anticipatory regulation of the social and the internal milieu is a core feature maintaining the social bonds that are preconditions of the well-being and fitness for survival (Schulkin, 2011). Allostasis of the species is an intricate interplay of physiological (Schulkin, 2004), psychological (individual, Cummins, Gullone, & Lau, 2002; Ramsay & Good, 2014), material or environmental and social (community-based or cultural, McEwen, 2005; Schulkin, 2011) aspects.

⁵“Sociome” intends to designate the sustainable symbiosis of nature and society. This symbiosis is a subject of scientific inquiry at the confluence of a culture (anthropology, Peoples & Bailey, 2017, p. 23), a community (ethnography, Brumann, 1999), and the natural environment (ecology, Ellis & Ramankutty, 2008).

⁶ Note the Aristotelian *zoon politicon*, capable of living within social bonds only.

3. Access, effort, and stimulus

Socioculturally mediated human heterostasis is ensured by the proportionality of three governing factors of human life: access, effort, and stimulus.

Access

Balanced access to satisfiers - resources, companions, social arrangements and space is fundamental for flourishing human life. Impoverished access is detrimental to weal. Many well-documented curses to life - undernourishment, bodily inactivity and decomposition, isolation, lack of meaning, or self-esteem - are the dire consequences of limited access. Too easy access on the other hand implies harms of comparable severity on life - abundance of the wrong type of food (toxic food environment Boswell & Kober, 2016), too much exercise or bodily strain (Soler, 2013), unrelenting exposure to other humans, lack of privacy (Acquisti et. al, 2015), workaholism (Ng, Sorensen & Feldman, 2007; Bovornusvakool *et al.*, 2012) or are detrimental in a similar fashion.

Access is determined by the natural and the social environment. Fundamental to weal is the probability of access and the effort involved regardless the sociocultural form of control (power relations, private ownership, communal sharing, public good or *res nullius*).

Effort

Although measures of hedonistic and eudaimonic well-being show a high correlation (Waterman, 1993), the seminal distinction (Ryff & Singer, 2006) underpins the centrality of effort in being human. Effort is vital. Mastication, digestion, exercise and locomotion, stimulation, exploration, learning – all require self-initiated bodily effort. Effort nurtures life. Too much easing is as detrimental as too much stressing out. A necessary level of effort allows for hedonic pleasures and eudaimonic striving alike. Communities attain weal whenever the majority of humans exert their vital capacities, rely on their capabilities without culturally informed learned helplessness (Peterson et al., 1993) and/or extreme overload.

Stimulus

Variation of experiences in early life is a prerequisite of the healthy development of the brain and the cognitive function. The human being requires stimulation obtained from the environment or through internal means at intermediate level different for every individual.

The optimal level of human stimuli is regulated by the behaviour of the human being. Optimal Stimulation Level theory (OSL) maintains that individuals will attempt to increase or decrease stimulation. When the stimulation is too high, individuals will attempt to decrease stimulation. Subjective pleasantness is highest at the level of stimulation at which a person feels most comfortable (Raju, 1980; Steenkamp & Baumgartner 1992). Pugno, (2016).

Stimuli are provided by presence instead of access, available and unavoidable in most human environments. They come as sensory information in the broadest sense, (visual, auditory, gustatory, olfactory and tactile senses as well as cognitive and kinesthetic functions). The activities performed to maintain the ideal stimulation level may be regarded as a homeostatic function (Zentall, 1975, Steenkamp & Baumgartner, 1992). The overlooked disease of boredom (Scitovsky 1999) associates significantly with depression, hopelessness, loneliness, and a motivational disorientation, and is negatively related to life satisfaction and autonomy (Farmer & Sundberg, 2010).

Too much stimulation leads to sensory overload. Information overloads give rise to psychophysiological effects entailing behavioural and somatic pathology. Research on sensory overload is scarce, symptoms of sensory overload may include withdrawal, over-excitation, and a lack of concentration ability ((Lipowski, 1975).

Sensory deprivation precipitates devastating effects. Its psycho-physiological impact on incarcerated individuals is similar to torture techniques in their impact on one's physical and emotional well-being (Grassian, 2006, Arrigo & Bullock, 2008, Wilson, 2009).

4. Weal - the unitary domain of cardinal needs satisfied

The idea of cardinal needs is indebted to the concept of universal needs. Whereas human desires or wants are infinite and insatiable, universal human needs are limited in number (Max-Neef, 1992) and may potentially be satisfied (Etzioni, 1968). The thwarting of the needs inflicts serious harm and possibly profound suffering, they are preconditions of any human action or interaction (Doyal & Gough, 1991, p. 49). The universal human needs are not manipulable, do not change neither from one society to another, nor from one individual to another. Beyond the basic material and nutrition needs, they depend on relations and self-expressions that make use of the body and often freely available elements of nature (Kameneczký, 1981). The territorial imperative shall provide access to places, natural and social embeddedness. The psychological needs are essential nutriment (Baard, Deci & Ryan, 2004) similarly to physiological nutriment. Human being remains liveable and the odds of human flourishing high within a comparatively foreseeable access at available levels of access to the satisfiers of all above needs.

Weal enfolds at the intersection of finite human nature (Pinker, 2004) and planet Earth as a closed and self-regulating system (Lovelock, 1979, 2009, Lenton, 1998). Human nature is considered as constant and practically unalterable in a historic perspective. Human nature evolved as an adaptation of a successfully spreading species involving the manifold ecological niches and the sociocultural determination of humans. Genetic studies and fossil evidence show that modern humans share an East-African origin, from where human groups gradually spread and interbred with more archaic humans over a period of one to two million years. Until the beginnings of animal husbandry, agriculture, of industrialisation, kingdoms and empires their evolutionary fitness rested on a shared core of physical, cognitive and emotional features acquired at the African origins (Tattersall, 2009).

Universally shared human nature is attested by the almost identical human genome (Rosenberg *et al.*, 2002), the (perhaps multiepisodic) dispersal of the entire humanity from an East-African homeland (Hawks, 2012), the sufficient genetic time for contact resulted a single human lineage (Templeton, 1999). The fundamental sameness of human nature is corroborated by the long and well-documented list of human universals (Brown, 1991, Carroll, 2004, pp. 187–206). The universality of human needs is postulated by many need theorists (Baumeister 1995, Ryan & Deci, 2000; Pittman & Zeigler 2006; Schwartz, 1994, 2005a & b, Gough 2014).

All humans share a vital core of needs (Alkire, 2002). Need development involves material, relational and subjective domains of the unity of actual well-being (White, 2010).

The universality of a shared domain for human thriving is underpinned by “spaceship earth” (Boulding, 1966), the “doughnut” offering humanity the best chance to thrive (Raworth, 2012) and the interdependent planetary boundaries of Earth System determining the liveable “playing field” for humanity (Rockström *et al.*, 2009)⁷.

The satisfaction of cardinal needs underlies any human existence, quasi-invariantly of place, ethnicity, culture and historical period. This is the vital core of having human needs. The optimal satisfaction of human needs take place whenever an integral unit of society, the community, the consanguine group or family attains the highest level of fitness for survival. In this cell of the multidimensional space of the needs continuum the perception of living well will also be the highest. In this domain the balance between effort and yield, the hedonic and eudaemonic is at its best for life.

Weal is conceived as a unitary domain enclosed in a multidimensional space of cardinal human needs. Within this domain human life is self-sustaining, and the propensity towards living well for most humans is high.

The cardinal needs are briefly presented as found fundamental by corresponding research, with some elementary references illustrating their non-infinite nature.

The U-shaped relationship well-being and the availability of satisfiers is implied in the vitamin principle (Warr, 1994, Jonge & Schaufeli, 1998) the closed domain for human thriving.

5. The cardinal needs (CDN)

Life unfolds by default as that of a community bound by shared identity related to a territory with access to the natural resources contained therein and aligned to a social order.

Within the domain of weal life is self-balancing, granting the satisfaction of 8 cardinal needs with a plausible level of effort in terms of physical strain, risk and variability, intellectual achievement, human conflict, stress and safety.

The 8 cardinal needs (CDN) are as follows:

Subsistence

Human life is sustained as a reliable inflow of water, nutrients, and tissues of biotic origin as well as materials for maintaining temperature, protection against environmental extremes and hazards and materials for consumption and manipulation subservient to all kinds of activities.

Materiality

Human life is and remains embedded in a material world. Materials, objects, tools, utensils and toys, jewellery, weapons, prosthetic and medical aids qualify human culture. The material need is understood as the need of the human community to flourish on the basis of materials: durable objects/artifacts and a material flow (consumables, fuel, minerals, wood etc.).

Locality

Places play an integral part in the lives of human beings. The fundamental aspects of localities are the accommodation for survival and daily activities, provision of place for sociality while remaining open to nature. People form bonds with place, territory is vitally important to people as an integral component of self-identity. Territory provides an essential link between society and the space it occupies through its impact on human interaction and the development of spatial group identities.

Activity

Human life entails allostasis, a dynamic balance of calories consumption and burning, protein intake, synthesis and degradation. Organs and faculties, ossature, musculature, the circulatory, respiratory and digestive systems must be kept functioning. Intellect and emotional capabilities must be employed.

The material, spatial and social environment, must allow for autonomous action. Human beings need access to bodily and socially constructed work, freedom and space for self-propulsion, movement, goal-oriented, competitive or tension-relieving efforts (riding, climbing, swimming, contests, races, dancing, fighting, catch of animals and fish, etc.).

Kinship

Human societies seemingly always live along consanguineal lineages. To satisfy the need to belong, have meaning and identity humans rely on kinship. Infants need parenting, young adults children, the elderly the support and company of their offspring. Assumed genealogical ties reinforce group cohesion, mitigate violence and rivalry among peers and counterbalance the detachment of generations.

Belonging to kins and locality means orientation, well-feeling and perseverance in life.

Companionship

Human life unfolds as a theatre of companionship, life is staged against a backdrop of a limited circle of fellow humans. Other people is needed as partners, enemies, friends, work, play, love and house mates, patrons, minions, masters, apprentices, slaves and victims of dominance and exploitation.

Significant other humans are the foremost corollary of being human, humans live in a humanised environment made up of humans. Access to people must enable stable and flexible, new and unexpected, reassuring and enslaving, desired and avoided relationships.

Destination

Humans need meaning, standing and recognition in any human society. Standing presupposes individuation, differentiation and specialisation. Hierarchy and association fosters social cohesion and enables concerted responses to threats and disasters.

Safety

A viable balance between culturally accepted risks and absolutised cultural certitudes, a calculability of the odds of action (*agentive safety*) and a resilience of human being in essential symbiosis with nature. Threats from natural forces, fellow humans and external agents remain within a range that the community can cope with (*existential safety*).

Weal is attained as the balance of access to resources and opportunities and the human effort invested. The accumbens–striatal–cortical circuitry evolved in the precursors of present time humanity playing central role in sustaining the activity level necessary for survival and thriving (Ledoux, 2002, p. 1881.). Effort-based rewards dispensed as neurochemicals modulating behaviour profuse the human body, the lack of these immediate internal rewards result in increased stress, depression and cardiovascular hazards (Lambert, 2006, Cacioppo, 2008, p. 97.).

As universally valid aspects of the underlying human oneness the cardinal needs must satisfy the general criteria of human needs. Each cardinal need is reviewed with regard to 4 general criteria (Baumeister, 1995, Anderson, Hildreth & Howland, 2015) as well as the access to and the effort involved⁸, and the harm inflicted if the satisfaction is systemically thwarted.

Salience

A fundamental need shapes longer-run human functioning, well-being and health.

Goal/effort

A fundamental need is subject to direct cognitive processing, elicits affective processes and a broad variety of goal-oriented behaviours and carries its reward or punishment in and of itself.

Universality

A fundamental need is observed across individuals with different culture, age, gender, or personality.

Nurturance/harm

The satisfaction of a fundamental need nurtures human thriving and resilience, and leads to ill effects when thwarted.

Whereas fundamental needs are also required to be non-derivative, cardinal needs do not require mutually exclusive definitions. The satisfaction of any of the CDN-s triggers similar rewarding mechanisms (Sterling, 2004), the excessive availability of satisfiers or the imbalance of effort and satisfaction results in distress and elicits substitutive behaviour.

Therefore the cardinal needs have an immediate substitutability that allows for short-term mental homeostasis. Longer term well-being and resilience, however, requires a return to the center of mass of weal.

⁸ “Access” as used here is closely related to “opportunity” as used in the integrative approach of human needs and well-being, Costanza *et al.*, 2006).

Demand/access

Furthermore the cardinal needs have to be critically relevant for major classes of human communities now and in the future, the demand for them unquestioned, the access to them problematic, the classes be global regions, social classes, cohorts or generations.

In the following 8 cardinal needs as aspects of weal are presented. Cardinal needs derive from a careful review of the abounding literature of human needs, relying on the omnipresent tendency of selecting similar sets of needs by scholars of dissident schools and disciplines (Alkire, 2002; Gasper 2004).

The eight cardinal needs (CDN) may be interpreted as a necessary and sufficient set underpinning human flourishing. The satisfaction of each cardinal need is interpreted as balanced between the extremes of too limited/burdensome access or deprivation and too easy access or degrading abundance. The cardinal needs are briefly presented as found fundamental by corresponding research, with some elementary references illustrating their non-infinite nature and the nurture or harm implied.

SBS - Subsistence

Saliency

The human being, similarly to all other living beings is subject to the throughput of other living things in parts or as a whole, raw, processed or cooked and requires an enabling ambience. Physiological sustenance of humans requires access to wholesome food, plentiful clean water, as well as an ambience within a narrow range of physical and chemical properties, virological, bacteriological, fungal, herbal, and entomological environment. Two major satisfiers of human sustenance are food and water, their cardinal role for all human beings is hardly contested. Humans subsist on a balanced diet of proteins, fats, carbohydrates, micronutrients and vitamins.

Access to open water surfaces is part of the primordial human setting as attested by environmental palaeontology and anthropology (Magill *et al.*, 2013). As the basic solvent of life, beyond the ubiquitous need of drinking, water is indispensable for many acculturated usages including body hygiene, washing, food processing, animal husbandry, modern industries, transport, and recreation.

Further prerequisites of human subsistence are adequate physical, chemical and biological surroundings, the boundary conditions human life. These corollaries of subsistence are obvious basic needs, the number of these needs proliferates as one adopts a longer term perspective or a more fine grained physiological analysis of human survival and flourishing.

Subsistence under various labels is an opening item on any model or list of human needs, including the Hierarchy of needs (Maslow, 1943), the intermediate needs ensuring health and autonomy (Doyal & Gough, 1991, p. 191), the axiological needs (Max-Neef, 1992) as well as basic need theories (Pittman & Zeigler, 2006). For a complete review of cross-references see Table 1.

Goal/Effort

Subsistence is a central goal of any human community irrespective of culture. Food distribution, access to water, heating, ensuring shade or cooling are all sine qua non for any group of humans (Sutton & Anderson, 2010, pp. 58-88).

Hunger, dehydration, thermal extremities, noise as well as exposure to other forms of life all have profound impact on human behaviour and trigger emotional reactions. Cognitive processing of nutritional, physical or biological distress is imminent (Aarts and De Vries, 2001, Touyz *et al.*, 2016), the suppression of which entails hardship, requires discipline and strong cultural pressure (fasting).

“Man produces his food by the sweat of his brow”. Food may be self-produced, traded or gathered from nature. All must involve effort and consume energy. Water may need to be harvested, storage, transport and irrigation ensured. Waste disposal, recycling, drainage and sewage, the

maintenance of soil fertility demand further efforts. Heating or cooling are thermodynamic interventions based on human effort, harnessing animal power, fuels or other natural resources.

Universality

Diets as well as the use of water, climatic and environmental conditions show wide variations. The underlying sameness is demonstrated by human adaptability, a healthy diet will be achievable in almost all diet regimes (McFarlane, 2016), wherever human subsistence needs can be met⁹. As the par excellence basic need, universality of the human need for balanced diet, copious clean water and a liveable ambience are hardly ever contested (Streeten & Burki 1978, van Weigel 1986, Reader, 2006).

Demand/access

Access to foodstuffs is ensured by access to commons for foraging or grazing, tenure or ownership of arable land for fodder or growing of edible plants, and for husbandry or by barter of goods owned as well as procurement on markets or shopping. Delimitation of all the above results in malnourishment or hunger and ultimately to death. A too easy access to food implies lack of enjoyment or partly motivation, overeating, the loss of attachment and social bonds, insufficient energy expenditure and eating disorders for the majority of individuals and in most social settings.

Access to water is ensured by living near to open sweet water surfaces, by piped water, by fountains or wells or transport in vessels. The failure of drinking water supply leads to fast dehydration and death. The limited access to clean water makes it the vector of waterborne diseases with the hazard of epidemics. Most other usages are highly variable and flexible culturally. Too easy access to water involves the loss of local attachment, wastage and disinterest in pure water as a human satisfier.

Nurturance/Harm

Balanced body composition and fitness are achieved by an energy intake corresponding to expenditure, mainly determined by cultural factors and individual lifestyles. Human metabolism fundamentally involves an unconscious regulation of food preference and intake following the changes of lifecycle, season, climate and stress in life. Culturally induced diversions from balanced patterns of nutrition are rampant and the effects magnified by mass media influences (Srinivasan 2012). Binge eating and food addiction may have an etiology similar to drugs or other harmful addictions (Rogers & Smit, 2000).

Protein-energy malnutrition (PEM), the primary form of macronutrient undernutrition causes decomposition of the muscular protein reserves, cutaneous disorders, wasting or stunting (James *et al.*, 2004) characterised by low body mass index (weight for height). The majority of child mortality as well as bodily underdevelopment is related to PEM (Grover, 2009). Excessive protein intakes impose a metabolic burden on the bones, kidneys, and liver. High-protein (meat) diets may also be associated with increased risk for coronary heart disease or even cancer (Metges-Barth, 2000; Delimaris 2013). The excessive energy intake is the central civilisational mediator to overweight and obesity, resulting in epidemics of several serious health conditions including type 2 diabetes, and cardiovascular diseases (Wellman & Friedberg, 2002).

The other major facet of human sustenance is access to clean and abundant sweet water. Every third human community suffers water stress due to overpopulation, competing usages (mainly agriculture and industry) and human induced climatic stress (Gleick, 1996). Personal human hygiene and sanitary use generate perceived new demands and enforce the transport of water from distant regions (Falkenmark, 2008). The same time water is an essential element of the local ecosystems (Baron, 2001). As water scarcity increases, a portion of the population may be

⁹ The system of dietary reference intakes (DRA, see <https://www.nal.usda.gov/fnic/dietary-reference-intakes>) widely accepted to orient in optimal nutrition for any demographic group in the USA (Devaney *et al.*, 2007), the approach is adopted in many countries today, however not recognised universally.

chronically mildly dehydrated. Dehydration of as little as 2% loss of body weight results in impaired physiological and performance responses. Research indicates that water can have an effect on diseases and cancers of the breast, colon, and urinary tract; childhood and adolescent obesity; and overall health in the elderly (Kleiner, 1999).

Human exposure to a heat shock causes hyperthermia, characterised by bodily weakness, anxiety, and fainting, a heat stroke terminates in delirium and coma (Bouchama & Knochel, 2002). The reduction of human temperature ultimately leads to frost injury and death (Ulrich & Rathlev, 2004).

In chronic exposure to noise and vibration entails reduced corporal and mental functions, just bearable peak level noises usually stimulate reactions of fear and flight (Rylander, 2006). Continued exposure to detrimental noise levels giving rise to elevated cardiovascular risk factors and promotes the development of poor cardiovascular health (Basner *et al.*, 2014).

MAT – Materiality *Saliency*

Human life is and remains embedded in a material world (Schiffer, 1999, p. 2; Dant, 2005, p. 105). Humans use materials as the extension of their bodies to attain human goals. The material need is understood as the need of the human community to flourish on a material basis. Material flows are the enablers of social continuity, the mental allostasis of humans is ensured by variety, exposure to varied and engaging stimuli offered by the natural, the artificial and the social environment.

Human materiality embodies in material objects of natural or artificial origin. The need derives from the evolutionary imperative of survival. Objects extend the power the body exerts on the human environment (McLuhan, M. ([1964] 1994, pp. 5-8). The effort involved is aimed at the body, other members of the human society or the environment to attain outside of the body conditions more favourable toward maintaining equilibrium and ensuring survival (Mumford 1967, p. 10).

The material need is often a standard item on objective lists of human needs, interpreted as a precondition or root need (Maslow, 1943; Doyal & Gough, 1984; Pittman & Zeigler, 2006). For a complete review of cross-references see Table 1.

Goal/effort

The material aspect of human life is a comparative latecomer on the evolutionary time scale. Late development of the neocortex, human cognition co-evolved with the hominid skills in manipulating materials (Jeffares, 2010). “Humanesque” tool use is already present in primates (Vaesen, 2012) and documented for the Oldowan culture of homo habilis 2 million years ago (Potts, 1998).

Materials are the objects of all kinds of human activity. Poverty is quasi-associated with the lack of access to objects needed to live a respectful and balanced life. Material needs as well as scarcity or abundance are largely social products (Soper, 2012; Zaman, 2012). Control or ownership of excessive material assets satisfies subjective security needs (Rindfleisch & Burroughs, 2004) rather than reliance on the actual consumption or use.

Living systems, including ecosystems as well as economic systems are dependent on a throughput of materials and energy. As energy is accessible to human use in materialised forms, energy can be stored in compartments (cells, tanks, wires, conduits etc.) and a single material throughput will characterise consumption (Daly, 1990, 1996).

Access to material resources must involve rewarding attainment. It may be ensured by individual, family, clan ownership, allow for personal or shared use. Access to and ownership of human artifacts function as tokens of identity, belonging, prestige or status.

Demand/access

The need of access to material objects is restricted to direct physical use, and go hand in hand with personal effort and a meaningful aim in the lifeworld of the individual or the community. The

access to means one owns is bounded by the boundaries of being a human being, a certain capacity of grasping, doing, reaching out for anything. Property includes this direct as well as many other ways of making use of one's property, safety, status, relationship. For the direct access objects must be ready to hand¹⁰, so that one is capable of personally manipulating them with an enriched spectrum of satisfying other needs, be it physical action, physiological safety, destination, or human relatedness.

Access pertaining to weal is a favourable combination of choice, effort and meaning. One has access to the right material good, with a reasonable effort for a meaningful aim. Living in poverty entails forced choices and unmet demands, or efforts out of proportion for some materials, living a too restricted capacity for meeting all the other needs.

Universality

The material flow and the need of producing and using human artifacts is universal as attested by anthropology (Reynolds, 1981, Schiffer, 1999). Humans extend their bodies (Brey, 2000) and express themselves and their social relations by means of objects. The material aspiration is a human universal (Pinker, 2002, Appendix). Societies in any culture strive to improve the human lot by material means. "Materialism" in this sense is a prerequisite of human being. Material needs are of three distinct categories: (a) the material flow (e.g. fuel, salt, raw materials for durables, etc.), (b) human extension (tools and machines, protection against climatic extremities etc.) and (c) "positional" goods (Hollis, 1984). All three categories appear to be universal, and their relative significance does not depend on economic development or consumption (Ger & Belk, 1996).

Nurturance/Harm

Material deprivation is associated with a plethora of physiological, mental and social threats¹¹. Material overconsumption remains a vague concept, in spite of the obviously harmful consequences on the consumer, the environment and the society (Ehrlich & Ehrlich, 2004, p.120). The early development of children, usually defined as the period from birth to the 6th year, is seriously impaired by the lack of material resources (toys, books, means of travel as well as adequate housing, McCulloch & Joshi, 1999). Cognitive functioning, verbal skills depend on simulation in early age, many disadvantageous life outcomes are more likely for the deprived (Johnson, Riis & Noble 2016).

Material excess will not grant proportional contribution to weal, whereas the exaggerative introjection of social benefits into material advantage or possessions is detrimental to weal in its mental aspects (Kasser *et al.*, 2014), displaces the activity level, the need for physical exercise, social bonds and thereby vitality and motivation (Ryan & Deci 2000).

Increased affluence is accompanied by decreasing physical activity levels resulting a pandemic of inactivity (Hallal, 2012; Kohl *et al.*, 2012). Affluenza, understood as the isolation of the wealthy from the actual reality of human life (Luthar, 2003) as well as consumerism, an ever-growing want of keeping-up with others in reference groups in terms of material possessions and lifestyle (Liu, 2014) gained much publicity as a social disease reaching epidemic proportions (Hamilton, 2005; de Graaf, Wann & Naylor, 2014).

A too easy access to material goods for the extremely wealthy leads to disinterest in effort, physical and mental harm, a dependence on ever-changing variety and permanent anxiety of losing the inherited abundance (Jaffe & Grubman, 2007). Many researches of the sudden wealth

¹⁰ German *Zuhandenheit* in Heidegger's sense enables the appropriation of the world as they are "ready-to-hand" to be taken up in use and activity (Heidegger: *The Question Concerning Technology and Other Essays*, c.f. Dant, 2005, pp. 87-88).

¹¹ Disentangling material deprivation, i. e. the lack of reliable access to material resources from income poverty from the lack of financial assets is a difficult exercise in an age of free markets and advancing monetisation.

syndrome report general confusion, the difficulty of relationships, trust and belonging (Goldbart, Jaffe, and Difuria, 2004).

A disastrously easy access to material objects is quasi-impossible in the narrow sense due to physical limitations of the human organism in space, time and acting capacity. Excessive materialism in the sense of obsession with materialistic pursuits entails psychical disadvantage and social harm (Kasser & Ryan; 1993, Kasser, 2002, pp. 5-22). Excessive choice (Iyengar & Lepper, 2000; Schwarz, 2007) beyond human cognitive capacities and limits of decision making becomes a societal burden.

Too much reliance on human technology endangers fitness and social bonding (Belk, 1985).

Most material and technological advances may improve human life immeasurably, and the same time result in isolated, anxious, and ultimately unhappy beings (Rodman & Fry, 2009).

Income satiation underpins human dependence on a delimited scope of material needs (Jebb, Tay, Diener & Oishi, 2018). Excessive material abuse is triggered by *habitus*¹² and addiction. Among many others, highly addictive, dangerous and ruining human life are car dependence (Douglas *et al.*, 2011), TV viewing (Barker *et al.*, 2018), drug abuse (Fox *et al.*, 2013), tobacco smoking (Britton, 2018), cell phones (Roberts *et al.*, 2014), gaming (Kuss & Griffiths, 2012), pornography (Duffy, 2016), alcoholic drinks (Burton *et al.*, 2016) and prepackaged or fast food (Frenk & Center, 2014; Boswell & Kober, 2015).

LOC - Locality

Salience

A “place under the sun” is the ubiquitous prerequisite of human being on planet Earth. Places play an integral part in the lives of human beings. The fundamental aspects of localities are the provision of place for sociality while remaining open to nature. Human sociality enfolds as the interplay of privacy and exposure to others.

People form bonds with place and in this sense, territory is vitally important to people and serves as an integral component of self-identity (Hauge, 2007). Territory provides an essential link between society and the space it occupies through its impact on human interaction and the development of spatial group identities (Soja, 1971: p. 33; Gottmann, 1973, ix). Human communities are accommodated in space, identity, privacy and security all unfold in locations. The place where one belongs has the combined functions of shelter, accommodates daily living, offers privacy and serves as an abode (Sommerville, 1992).

Housing as a generic human need is the staple of welfare and quality-of-life literature, among others feature on the lists of the Voices of the poor (Narayan *et al.*, 2000), the axiological needs (Max-Neef, 1992), intermediate needs ensuring health and autonomy (Doyal & Gough, 1991, p. 196) and The generalisation towards the need of private and public space and the balance of built and natural environment will take time to emerge as an established scholarly field (Kaplan, Austin & Kaplan, 2004, Barton, 2009). For a complete review of cross-references see Table 1.

Goal/Effort

The access to localities is tantamount to the control of places. Access may be simple appropriation of *res nullius*, public domain or granted under tenure or property ownership.

Access to places is ensured by locomotion, property rights by sheer power or social arrangements that root in power relations. Attaining to and remaining in power depends on efforts invested. Access entails continuity spanning over long life periods or generations. Access to resources in the proximity of communities warrants ownership, and thereby attachment and sustainability of local ecologies.

¹² Habitus is the cornerstone of the functional structuralism of P. Bourdieu. Habitus is a system of embodied behavioural tendencies that organise the perception of the social world and inform around the reactions to it. These tendencies are usually shared by others with similar backgrounds (family, clan, class, education, profession etc.), see Lizardo, 2004.

Little is known about the minimal place required for living, the control of augmented place appears to be a near universal. Humans control and defend their territories as a complex social phenomenon in the absence of a simplistic biologically founded urge (Storey, 2012, p. 20). The access to places may involve settled as well as nomadic forms with all conceivable societal forms of control or ownership (Sack, 1983). Conquest, frontier settlement, common land, tenure, territorial sovereignty and real estate property rights all present socially established historical alternatives to ensure or delimit access to place.

Universality

Prehistoric humans gradually acculturated to virtually all climatic zones and but the Arctic poles and deep sea. Any future extension of human settlement in the extraterrestrial space or the colonisation of other planets will require a meticulous emulation of earthly environmental settings. Apart of disproportionately expensive and vulnerable capsules it is hardly thinkable in the foreseeable future.

The mosaic type environment of the shared evolutionary past fostered curiosity, spatial orientation and involvement, allowed access to a wide range of resources. The proximity of non-human made environment helps nurture mental capabilities and recreation (Newton, 2007; Kuo, 2010). Neither physically demanding work, nor discovery, enjoyment of landscapes or privacy are enabled without access to wide enough spaces.

Construction also seems to be a universal human trait from the pongid nests through palaeolithic dwellings to Manhattan skyscrapers and tower districts of modern megacities. Ancient fibroconstructive activity, tents, moving and sedentary homes (Egenter, n.a.), farming or industrial building, as well as sacral symbolic or secular public edifices need places to be erected upon.

Socialised human space serves the alternative purposes of privacy and public exposure universally (Acquisti et al., 2015).

Nurturance/Harm

The built environment may delimit or encourage access to natural settings or resources, and offer privacy and public space, ie. enable the separation for oneself or with intimate partners (Solove, 2006) and intermingling with members of the larger community and facilitate encounters (Oldenburg, 1989).

The amount of interpersonal contacts in a community depend on available public space. Social infrastructure is crucial for urban safety and prosperity (Putnam, pp. 1995, 443-445, Klinenberg, 2018). Third places foster exchange and community and among people outside of home and workplace (Jeffres *et al.*, 2009).

Sustained natural exposure brings many economic, environmental and health benefits. Natural open space contributes to enhanced social communication skills, increased physical and mental health, sensory awareness, the ability to assert personal control and increased sensitivity to one's own well-being, connections between people and the natural environment (Morris, 2003). Urbanised environs with heavily limited access to natural settings clearly correlate with the lack of exercise (Frank *et al.*, 2005; Berke *et al.*, 2007; Ding *et al.*, 2011).

Housing may be a culturally dominant nevertheless only a dot along the wide spectrum of possible means to access to place. The market for homes is not likely to solve the problem of human dwelling¹³. The lack of access to place dispenses all the suffering related with homelessness. Terminal homelessness results in anomia, mental disorders, and heavy morbidity (Hwang, 2001), contributes to extreme poverty, may involve a loss of identity and social disorientation (Sommerville, 1992; Diener & Diener, 2006). Poor housing is expected to involve negative health outcomes (Thomson *et al.*, 2013). Agrophobia and depression, demotivation and mental discomfort,

¹³ The lack of adequate housing in most human environments goes hand in hand with under-occupation of upper class districts (Monbiot, 2015) and the depopulation of villages in large regions in Europe, USA and Japan.

the feeling of loneliness, alienation and distrust may accompany the ownership of large estates and living on their own in oversized apartments or mansions (Janevic *et al.*, 2004).

Living in crowded housing conditions can create stress and have negative consequences for its inhabitants. Children may be particularly vulnerable, variation in housing seems to be a key aspect of the physical environments. Atypically high levels of housing crowding lowers the academic achievement, causes behavioural problems, and erodes physical health of children (Solari & Mare, 2011). Living in an urban environment is associated with an increased prevalence of specific mental health disorders, particularly schizophrenia. Urban living entails increased exposure to social stress (Aiello, 1987). The threat of unwanted social interaction is one of the major causes for mental disorders, and correlates with an increased incidence of schizophrenia in urban minority groups. The general increase of social stress for the urban population is yet to be validated (Srivastava, 2009; Lederbogen, 2013).

The incidence of major depression or schizophrenia is higher in cities in spite of their general advantage with the access to infrastructure, better socioeconomic conditions, nutrition and health care services. Higher stress exposure and higher stress vulnerability turn out to be the most important factor for the increased risk of mental disorders in urban areas that outweigh pollution or noise (Adli, 2011).

ACT - Activity

Saliency

The human being is an organism that lives through self-initiated activities (Ryan & Deci, 2000). The need of activity seeks fulfilment as an appropriate level of physical exercise and mental effort in order to achieve goals and improve the human condition of the actor and the ones he or she cares for (Alkire 2007). Activities ensure homeostasis and survival by maintaining the functionality of organs, serve socially.

Children are born with an intrinsic motivation to be physically and mentally active (Whitehead 1993, Seligman, 2011). This intrinsic motivation may be kept alive in the adult by positive feedback from the environment, or give way to a gradual learning of physical or practical inertia (Dishman *et al.*, 2006; Greenwood and Fleshner, 2008). Work satisfies latent human needs far beyond its economic purpose (Jahoda, 1978, *op. cit.* Paul, Geithner & Moser, 2007).

Activity as a key determinant of positive human outcomes is an often overlooked factor among the scholars of human need research, although the fitness determination, environmental influence as well as the role of established societal norms is well-documented. Exceptions are certain interpretations of basic needs (Braybrooke, 1987, p. 36) or the vital needs (Hamilton, 2003), whereas work has a more prominent status, including the Voices of the poor, (Narayan *et al.*, 2000) or the intermediate needs ensuring health and autonomy (Doyal & Gough, 1991, p. 185). For a complete review of cross-references see Table 1.

Goal/Effort

Access to activity presupposes the freedom of agency, space and environment as well as the proper physiological and mental condition of the human agent.

Autonomous action is based on the organismic desire to integrate experience and behaviour in concordance with one's self. Autonomous action requires a nurturing social environment (Ryan-Deци, 2000). The concept of learned helplessness highlights malleability of human nature regarding autonomy seeking behaviour (Abramson *et al.*, 1978). Effort carries its reward partly in itself, active work for a monetary reward implies more activation in the brain's striatum than receiving the same reward without work (Zink *et al.*, 2004). The theory of self-efficacy defines self-efficacy as the perception that one is able to take appropriate action to obtain a reward (Bandura, 1997).

Human effort invested in activity is governed by motivation as well as cultural values and patterns.

Universality

Competence and autonomy to act are posited to be universal intrinsic needs of humans, highly invariable of cultural background and personality (Chirkov, 2009; Vlachopoulos *et al.*, 2013). Human agency is a potentiality, a biologically determined general predisposition to achieve. Agency enables people to play a part in their self-development, adaptation and impact on reality (Bandura, 2001). Being physically active on a weekly basis brings universal health benefits (Blair, *et al.*, 2013).

Nurturance/Harm

Any culturally homogeneous human community needs to strike a balance between exerting human efforts and capacities and employing exogenous labor, animal or mechanical power.

The increasing reliance on the latter leads to inactivity of epidemic proportions (Hallal, 2012; Kohl *et al.*, 2012). The actual relationship between physical exercise and sedentary lifestyles is complex, depending on socioeconomic status, cultural pattern, family background, and social psychological influences (Sallis *et al.*, 2000). Autonomous human agency with its envisioned efficacy underlies the motivation of physical as well as mental effort. Low self-efficacy is associated with the higher prevalence of depression (Bandura, 1997).

Regular mental activity in higher education, mentally demanding occupations and intellectually stimulating leisure activities reduce cognitive decline and decelerate dementia (Valenzuela & Sachdev, 2006).

Light-to-moderate physical activity is associated with positive physiological outcomes: an optimal energy expenditure to maintain energy balance; the aerobic intensity required for heart health; improved skeletal weight bearing capacity, muscular resistance and endurance activity for strength; and flexibility for high-range movement (Caspersen *et al.* 1985; Caspersen, 1989, p. 682). Exercise alleviates stress and other symptoms of disorders, and prophylactically reduces their occurrence.

Regular physical activity displays desirable health outcomes across a variety of physical conditions (Penedo & Dahn, 2005). An extreme dependence of physical exercise, on the other hand, constitutes the psychic syndrome known *vigorexia* among gym goers and body builders (Soler, 2013).

Hypermobility, (Adams, 2000) an unrestricted effortless movement around the globe turns out to have manifold negative consequences to the human subject, the frequent traveler (Cohen & Gössling, 2015).

KIN - Kinship

Salience

Kinship is a primary organising principle in human relations. Humans experience kinship in two major forms, biological kinship with shared genes and psychological kinship in the absence of the former (Bailey, 1993). The fundamental aspects of kinship are parenting and consanguineal relationships. Kinship bonds cement families, clans and tribes. Human life enfolds in familial disposition (Eibl-Eibesfeldt, 1988). Parenting is prerequisite to human continuity both in the generative and the qualitative sense. Mating and having siblings is an overarching human desire that results in kinship systems¹⁴. Elaborate verbal kinship terms on basic relations of procreation, differentiation between close and distant relatives and kinship statuses attest the significance of kinship (Brown, 1991, Appendix 1).

Inclusive fitness theory identifies kin preference as a fundamental evolutionary strategy. While anthropology grapples with the complexities of kinship relations, the centrality of modelling procreation (Shapiro, 2008) and descent (Shenk & Mattison, 2011) for humans is not contested.

Kinship is not widely recognised as a fundamental objective need, is prominent, however as the need for safe birth and security in childhood (Doyal & Gough, 1991, p. 204), the universal value of

¹⁴ The extraordinary variety of recorded kinship patterns, the “ethnographic dazzle” obscured the search for the universality of kinship (Palombit, 2010).

family safety (Schwartz, 1994, 2005a), the need of caring for children and marriage (Narayan *et al.*, 2000, pp. 25–30, 37–38). For a complete review of cross-references see Table 1.

Goal/Effort

Kinship bonds cement various formats of cooperative breeding from the morally hyped Western nuclear family to the allomaternal assistance of many forager societies (Hrdy, 2001, p.78).

Access to one's family means direct access to parents and siblings. Access to kin¹⁵ contours and reinforces belonging by genealogy. It may imply effort in terms of travel, visiting, keeping company etc. For the great majority of humans access means staying, living and pursuing life's doings together.

Progeny is a large investment for humans with the most large brain, considering the risks associated with childbirth, the long gestation and rearing. The maternal bond, the support of father and paternal kin foster evolutionary advantage for humans. Kin adherence brings obvious survival advantage and contributes to flourishing at a lower level of aggregated efforts. Families in very different formats serve a multitude of important functions for society. These functions include family formation and membership, material support, nurturance and socialisation, as well as protection of vulnerable members (Ooms, cited in Patterson, 2002). In contrast to exclusive mothering in all traditional and many recent societies mothers and their young children are enmeshed in kinship groups and larger communities as it has been evident for anthropologists for a long time (Seymour, 2013).

Universality

Kinship and conjugal alliances are human universals (Shenk & Mattison, 2011). The process of classifying kin is a species-typical, universal attribute Fox (1975, 1979).

Mothers in most known societies have consorts during child-rearing years. Indeed, the intermarriage between members of distinct groups is proposed to be the deep structure of humanity (Chapais, 2010).

Nurturance/Harm

The social and cultural reproduction of the new generation takes place within the (nuclear or extended family). The survival, economic self-sufficiency, and self-actualisation of children is best ensured in (nuclear or extended) families (Shaffer, 2000). Natural parenting contributes to (Schön & Silvé, 2007), the warm, sensitive, and responsive relationship to parents and a few other caregivers plays key role in child development.

Orphans and vulnerable children face discrimination, poverty and shelter problem, lack of food, loss of parental care, love and affection, malnutrition, lack of basic education, poor health and self esteem. Bodily and behavioural development tends to be retarded, the risk of abuse in the family as well as risky, and asocial, borderline behaviour becomes more likely (Williamson, 2005, Muhamedrahimov *et al.*, 2008, pp. 2-5) from behavioural and emotional disorders during the first 1–2 years following death of a parent (Dowdney, 2000) orphans experience economic and educational disadvantage. The need of having parents, progeny and relatives is developmental and changes with the human life stages. Somewhat similarly to certain primates, the dependence on kinship may be minimal for young adults, but is indispensable in childhood and advanced age.

Close kin relationships replace deceased parents, foster families or institutional care are more problematic (Donahue, 2005, Cheney & Rotabi, 2017).

Children with a disrupted family are disadvantaged in many respects. Parental divorce and marital discord affect the socioeconomic attainment, marital and relationship stability of the offspring and predicts lower levels of psychological well-being in adulthood (Amato & Sobolewski, 2001; Amato 2005).

¹⁵ Kin is a flexible term of varying inclusion from cohabiting adopted relatives to first and second cousins, sisters and brothers, as well as the same for the parents and the sons and daughters and so on ...

Unmarried individuals report lessened SWB, grown-ups without children are more prone to depression, become aimless and neglected as seniors.

Nuclear or larger extended families serve survival and social functioning, interwoven with kinship-defined interests, obligations and power relations (Emlen, 1995, Geary 2004). Intra- and interfamily considerations historically overwrite individual choices, although mate selection fundamentally serves evolutionary fitness (Buunk, Park & Dubbs, 2008). Tight-knit families may exert coercion and delimit individual well-being in making autonomous choices of destination in life, mate selection or sexual reproduction (Sandhya, 2013) as well as contribution to family chores or productive tasks (Alesina & Giuliano, 2007), the power differential among family members can lead to victimisation, abuse and violence (Finkelhor, 1983, Murray, 2006). The eventual excess of kinship dependence did not emerge as a field of inquiry as yet.

COM - Companionship

Saliency

Human sociability is the most astonishing feat of mankind, central to its unique success in evolution, earthly resilience and the development of civilizations (Richerson & Boyd, 1998). Humans are fundamentally sociable— they organise life in terms of their relations with other humans (Fiske, 1992). The astonishing cognitive capabilities human brain evolved in order to cope with the most immediate human environment: fellow humans (Cacioppo, 2008, p. 11). Newborns preferentially respond to faces (Little *et al.*, 2011), The concept of the self and the cognitive capacity of constructing others' intentions, the theory of mind are established universals of mankind (Gut & Wilczewski, 2015), separating homo sapiens from the other humanoids (Byrne, 2002).

Relationship is one of the three basic psychological needs of self-determination theory (SDT, Ryan & Deci, 2000, Sheldon & Schöler, 2011) and one of the six domains of psychological well-being (Ryff, 1995). For a complete review of cross-references see Table 1.

Goal/Effort

Humans live well at a broad range of exposure to other humans between extreme isolation and impersonal overcrowding. As humans, similarly to their primate predecessors evolved in limited size (Dunbar, 1992, 2007, Lehmann *et al.*, 2007) groups (tribe or clan), weal entails a balanced access to a limited number of companions with bonding and frequent face-to-face contact.

Human behaviour is misinterpreted without the relationship context (Reis, Collins & Berscheid 2000). People are engaged in and strive for stable relationships and resist breaking their social bonds (Myers, 1999). The access to others is controlled by privacy regulation (Altman, 1975). Human functioning is improved when a level ideal for the individual is achieved. Privacy regulation is intrinsically social. The optimal level of privacy is changing in the dynamic process of balancing interaction between feeling isolated or lonely and or annoyed or crowded. Social interactions across communication channels are actively managed by humans. Territoriality (Taylor & Ferguson, 1980) and behaviour (Margulis, 2011) are both instrumental. Exposure to human fellows is governed by settlement and shelter patterns, locomotion and travel, communication technology as well as the rules (commandments and taboos) of social interaction. The reliable access to human companions is a precondition of the psychic and social development of the human child (Bowlby, 1970; Bretherton *et al.*, 1992; Misca & Smith, 2014).

Universality

The need to belong (Baumeister & Leary, 1995; Gere&MacDonald, 2010), to cooperate or compete, form peer groups and alliances are all universal human features across human history and around the globe, none of these is possible without human companions. The need of privacy is universal with culturally varying levels perceived as desirable (Altman, 1977; Margulis, 2003).

Nurturance/Harm

Social relationships have multiple effects for better and for worse, these effects emerge in childhood and generate cumulative advantage or disadvantage in health over the life course (Umberson & Montez, 2011).

Early social isolation results behavioural and cognitive dysfunction in the adult. Alterations in the brain in prefrontal cortex and myelination do not recover later on (Makinodan *et al.*, 2012). Studies on social isolation in prisons and among the elderly underline the primary importance of human relationships in mental and bodily health (House, Landis & Umberson, 1988). Exile, imprisonment and solitary confinement are progressively more severe punishments (Myers, 1999). Solitary confinement leads to mental aberrations, cognitive and dysfunctions causing a suffering comparable to cruel physical torture (Grassian, 2006, Gawande, 2009, Wilson, 2009). Isolation in mature age may impair the quality of life (Victor *et al.*, 2000) and is associated with lower general well-being and depression, the increased risk of depression and premature death (WHO 2003, p. 16).

The lack of social relationships is a substantial mortality risk factor (Holt-Lunstad *et al.*, 2010). Social exclusion hurts similarly to physical pain (MacDonald-Leary, 2005), and social devaluation (the anticipation of exclusion) triggers revaluation of assets and sacrifice to regain affiliation (Mead *et al.*, 2011). Social exclusion impairs rational reflexion (Baumeister, Twenge, & Nuss, 2002) and reduces prosocial inclinations (Twenge *et al.*, 2007). The withering of meeting in people person deteriorates social capital and deforms social relations (Putnam, 1995; & Putnam, 2007).

Stressful loneliness increases self destructive habits, affects negatively the immune and cardiovascular systems; and leads to sleeping disorders (Cacioppo, 2008, pp. 99-108.).

The evidence concerning the harms at the other extreme of the scale, too much exposure to other people is less abundant. Overpopulating animal colonies show dramatic deterioration and collapse (Calhoun, 1962). Although analogous speculations over an optimal human settlement density do not find experimental support (Ramsden, 2009), overpopulated neighbourhoods show an increased prevalence of specific mental health disorders, particularly schizophrenia, dementia and major depression (Srivastava, 2012; Lederbogen 2013).

Many researchers find that urban living in crowded cities stands as a proxy for an increased exposure to social stress (Evans *et al.*, 1989). The permanent exposure to leads to stress, anger and reduced coping abilities. Crowding is the personally problematised perception of high population density. Crowding involves the feeling of others being too close instead of actually being too close (Hotwani & Tripathi, 2017). Crowding tolerance among humans seems to be invariant of cultural differences (Evans *et al.*, 2000). The excess of exposure to human company is perceived as psychic threat (Evans, 1987; Baum & Paulus, 1987), the actual stress is mostly mitigated or exacerbated by culturally available strategies of control (Epstein, 2010).

DST - Destination

Salience

Destination is understood here in the broadest sense of having a purpose or meaning in life, being free from existential anxiety or meaninglessness and having a deserved place in the social order. Destination as the intrinsic need of the human individual enfolds in relationship to others, the community or the society. The individual is incapable of attributing meaning to life in him/herself, therefore human destination refers to the community (Klein, 2016). In the core of destination lies the generation, reproduction, sustenance and reproduction of life. The fundamental aspects of having a destination are the interrelated needs of status and mastery (Anderson, Hildreth & Howland, 2015) among significant others.

Social psychology works with an array of constructs that tap into this aspect of well-being including meaning or purpose in life, self-esteem, terror management (TMT), all intertwined with belonging to groups or a community and overlapping with the fundamental need for safety.

Similarly to primates, all humans are born with an orientation along hierarchies (Wang, Kessels & Hu, 2014), strive for status and recognition. Hierarchy, specialisation of societal roles and ever-

varying peer (non-kin) groupings (clubs, societies, orders, Reitz, 2014) characterise human societies.

Meaning in life (Frankl, 1967) is interpreted as universally desirable and with many positive outcomes on life (Frankl 2004, p. 84, Eagleton, 2007, pp.135-175). Self-esteem appears to be derivative of the existential anxiety in TMT (Schimel, Landau & Hayes, 2008), and (Ryan & Brown, 2003).

Dominance, status prestige and recognition are overlapping constructs, all tapping into the same aspect of weal. Social dominance in primates brings evolutionary advantages enhancing affiliative bonding, social tolerance and the reconciliation of aggressive conflict (de Waal, 1986). Hierarchy and power relations are ubiquitous inherited assets for the human society enabling cooperation as an important aspect of the uniquely human prosociality (Jensen, Vaish & Schmidt, 2014).

The “higher needs” of esteem and self-actualisation (Maslow, 1943) are obvious precursors of destination. Purpose in life is one of the six domains of psychological well-being (Ryff, 1995). Both related constructs of competence and self-determination are fundamental in self-determination theory (SDT, Deci&Ryan, 2000). For a complete review of cross-references see Table 1.

Goal/Effort

The human being is driven by an intrinsic need to achieve meaningful goals and master his or her environment. As the population increases, hierarchy and organisation is needed to maintain order and the culture of breeding (Ramsden & Adams, 2009, p. 30-32). The human community in turn determines the access to roles and functions to which the human community ascribes recognition and status. In viable and flourishing communities the large majority enjoys commitment to widely recognised roles and functions that are attainable by medium effort and contribute directly to the maintenance and flourishing of the community. These roles and functions must be distributed alongside the stages of life and sexual differences. The distribution of access to status and recognition for achieved competence depends on the cultural imprint of institutionalised hierarchies, the size, intricacy, specialisation level and value systems of communities. Recognition rewards competence. Competences denote the mastering of daily or highly valued rarely attainable, physical, mental and or social skills. Satisfaction shall not come easy and ensure longer term, often life-long motivation to be knowledgeable, perform, compete and excel.

Weal implies that a community offers access to most members formats and opportunities to satisfy the need for destination.

Universality

Beyond recorded human history status hierarchies are prevalent among hunter-gatherers and in non-human social species as well (van Vugt, 2014).

The human brain appears 'hard-wired' for hierarchy (Zink *et al.* 2008; Wang, Kessels & Hu, 2014), skill and rank symbols activate specific areas of the brain (McKnight, Kashdan & Todd, 2009). Humans alter their attitudes by adapting themselves to the social status of others (Watanabe & Yamamoto, 2015). The tendency to develop hierarchies, albeit in diverse forms, is universal, and is shared with the primates Sułkowski, 2009; Anderson, Hildreth & Howland, 2015).

Human status seeking is universal with many benefits for the individual (Driskell and Mullen 1990). The need for competence as an intrinsic reward and recognised by others is found fundamental regardless cultural background and interpersonal differences by self-determination theory (SDT, Chirkov, Ryan, Kim & Kaplan, 2003; Chen, Vansteenkiste, Beyers *et al.*, 2015).

Nurturance/Harm

The satisfaction of the need for destination is dependent on the size, the power relations, the openness of the community and the societal specialisation of roles. Viable communities strike a balance between steep open hierarchies with domination over a multitude of humans and limited set of too widely shared cultural values and a localised access to opportunities to anchor self-hood,

garner recognition for meaningful contribution or valuable capabilities/skills within the community. Cultural and individual setting may be of advantage or detrimental to the individual in having a seeking status by developing mastery of socially valuable skills (van Vugt, 2014).

Meaning in life is associated with significant health outcomes. Significant associations were found between meaning in life and depressive symptoms (Kleftaras, 2012).

Status is a precursor of well-being for dominant males in primate groups (Cummins, 2006) via access to food, mating opportunities and support from group members. Socioeconomic status, understood as access to wealth, education and employment is a strong predictor of general health (Yu & Williams, 1999).

Separated from SES, the subjective perception of socioeconomic status (SES) is now proven to be a significant determinant of health (Cohen, 2008; Jeon, Ha & Choi, 2013) and the relative deprivation (RD) theory presents robust evidence for the high prevalence of anxiety and depression (Lambert, 2006). Low SES and the resulting feelings of relative deprivation diminish well-being, lower happiness and impair health. Poverty is often exacerbated when people compete for higher status, thereby diverting resources from meeting basic needs to positional goods (Chen, 2015).

Effort invested into work should find proportional recognition, effort-reward imbalance (Siegrist, 2000, van Vegchel *et al.*, 2005) lowers self-esteem and leads to stress-related mental disorders with an increased hazard of cardiovascular diseases (Siegrist, 2010), poor health habits and increased mortality (Emler, 2001, p. 58, Eibner & Evans, 2005). An excessive strive for extrinsic status indicators seem to decrease self-esteem (Kasser & Ryan, 1993) and subjective wellbeing (SWB, Diener & Biswas-Diener, 2002).

SFT - Safety

Saliency

Safety is commonly understood as freedom from chronic threats of hunger, disease or protection from the hurtful disruptions of the pattern of daily life (Ewan, 2007). Safety is undermined by “fear“ or “want”. “Want”, the lack of reliable access to material goods, food, medication against disease, liveable space, interpersonal standing, belonging to a community and protection from extra-communitarian threats are the interdependent components of safety (UNDP, 1994, pp. 23-25, *op. cit.* Ewan, 2007).

Living in safety is commonly understood as the continuity of being or the predictability of living (Kinwall, 2004). The human need of safety have the dual aspects of interpersonal (Edmondson & Lei, 2014) and existential safety (Giddens, 1991, p. 39). Ontological security entails the psychological safety of the self, the stability of the whole person, who can encounter all the hazards of life (Laing, 1965, *op. cit.* Shani, 2017). All forms of life evolved as organic adaptations to environmental pressures, subjects of evolution are lineages (Potts, 1998) over individuals with an absolute need of survival that is never satisfied. External threats and risks involved in living itself change with life cycle and the way communities exist and flourish, livelihoods are developed and maintained.

Weal implies a viable balance between culturally accepted risks and absolutised cultural values, an agentive safety and a resilience of human being in essential symbiosis with nature (Tidball, 2012).

Safety is fundamental to the satisfaction of all other “higher” needs in the hierarchy of needs (Maslow, 1943) is a human development essential (Marker, 2003), an instrumental freedom (Alkire, 2007) and a universal human value (Schwartz, 1994). For a complete review of cross-references see Table 1.

Goal/Effort

The human being is deemed to be safe in an absolute, in a perceived and in an agentive sense. Absolute safety is a nonsense and an antithesis of living as an adventure open to death. Perceived safety includes the aspects of dignity or interpersonal safety, the maintenance of self-esteem (Schimel, 2008), and a viable mood or freedom from depression managed homeostatically

Cummins 2010. Agentive safety means an access to resorts, self-help or institutional safeguards in case of dramatic and pervasive threats to person, community, livelihood or territory, the vital core of human being (Alkire, 2003). The viable degree of safety must fall between the extremes of dying before or without having progeny and living too long and of monopolising a too large portfolio of resources to enable the reproduction of further generations for the large majority of the population.

A stable self is the precondition of engaging in life and interact with others. TMT posits that fear from death is the existential foundation of the human relation to the world (Pyszczynski *et al.*, 2015).

Throughout the evolutionary history of mankind safety was ensured by the community, achieved by the behavioural imprints of group cohesion, shared rearing of progeny, kin preference and culturally mediated division of roles and functions (Goldbart & Cooper, 1976). Subjective threats on for communities are maintained by the larger society (Cooper, 2008, pp. 214-218). A considerable amount of human effort, ingenuity, military training and action, armament and fortification is invested into safety throughout human history. Communities all times took their share in their protection (Eloranta, 2005).

Universality

The concern for safety is universal, relevant to people from all ages or global regions (Ewan, 2007). As critical keys to culturally varying approaches to safety serve fundamental civilisational values like that of the individual human life, freedom, private property, or sovereignty as well as ties with the living, kinship or bonds with the ancestors. Safety is perceived within communities as an individual or communal achievement as well as the service of cultures or civilisations. Striving for safety coexists with going into risks for the satisfaction of opposing needs (Rosen, 2005, p.8).

Nurturance/Harm

The lack of perceived safety for food, employment, neighbourhood or environment involve anxiety, somatic symptoms, increased morbidity and self-destructive health related behaviours (James *et al.*, 2004, Seligman *et al.*, 2010; Ferrie *et al.*, 2002; Booth *et al.* 2014). The lack of psychological safety precludes vitality and involvement in creative work (Edmondson & Lei, 2014). The safety of affiliation is a major determinant of the quality of couple relationships (Mikulincer *et al.*, 2002).

The detrimental effects of chronic job insecurity or drastic changes in job security on self reported health are now well documented (Marmot *et al.*, 2002, Ferrie *et al.*, 2005). Unemployed persons tend to show an impaired mental health, the perception of playing a socially significant role is a basic need and contributes to the satisfaction of several other psychosocial needs (Paul, Geithner & Moser, 2007).

The excess of safety inhibits societal flexibility, learning by experience and play, autonomy of action and (Chen *et al.*, 2015).

6. Conclusion

There is a shared human experience about the phenomenon of being human. This shared human experience (partly conscious and under cognitive control) includes having needs, caring about the needs (of oneself and others those who matter to one) and satisfying the needs. There is an inborn awareness of the needs and the urge of satisfying these needs that motivates humans to action similarly to other living beings. The satisfaction of fundamental needs is the product of communities having livelihoods in liveable environments instead of an individual achievement (Clifford, 1984). The sum-total of individual evolutionary fitnesses is far less than the fitness of a liveable community (Jensen *et al.*, 2014).

Weal is proposed as a tentative new focus of reorientation on well-being by the introduction of a *tertium datur* between the extremes of unlimited human freedom and the ad infinitum culturally variable and individually malleable and the rigidly materialistic, biologically and by natural scarcity determined interpretations of human nature.

The cardinal needs proposed are universal aspects of the underlying unity of human well-being. This unity is conceivable as the balanced access to each aspect with medium effort for viable communities. The review of selected literature supports the practical applicability of weal, the finite approach and interplay of effort, access and stimuli as the ontological foundations of human well-being will require a profound reorientation of research and policy making, with many new subfields of research not initiated as yet.

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Appendix

Table 1 Cross-references with other approaches to the dimensions of human needs

Human needs vs. Cardinal needs (CN) - Crossreferences																		
Author(s)	Hierarchy of human needs	Central elements of human need	Basic human needs	True worlds	Latent needs	Course-of-life needs	Axiological needs	Human needs	Universal Psychological Needs	Universal human values	Dimensions of deprivation	Psychological needs	Preterial values for development	Domains of life satisfaction	Voices of the Poor	Central human values	Twelve life domains	Self-determination theory
Maslow, A. H. (1943) A Theory of Human Motivation. Psychological Review, 50, 370-396.	Nielsen, K. (1977) True needs, rationality and emancipation. In Fitzgerald, R. (ed.), Human Needs and Politics. Sydney: Pergamon Press.	Green	Gallung, J. (1980) The True Worlds: A Transnational Perspective. New York: Free Press.	Jahoda, M. (1984). Social institutions and human needs: A comment on Frye and Payne. Leisure Studies, 3, 297-299.	Braybrooke, D. (1987) Meeting Needs. (p. 36). Princeton, NJ: Princeton University Press.	Max-Neef	Doyal, L. & Gough, J. (1991). A theory of human need. (p. 191). New York: Palgrave.	Ramsay, M. (1992) Human Needs and the Market. Aldershot: Ashgate.	Schwartz, S. H. (1994) Are there universal aspects in the structure and contents of human values? Journal of Social Issues, 50(4): 19-46.	Chambers, R. (1995) Poverty and livelihoods: whose reality counts? IDS Discussion Paper No. 347. Brighton: University of Sussex.	Author(s): Ryff, Carol D. Current Directions in Psychological Science, Psychological Well-Being in Adult Life (4) 4, 99-104	Qizilbash, M. (1996) Ethical domains of life satisfaction: an attempt to order chaos. Social Indicators Research, 3, 303-332.	Cummins, R. A. (2000) Voices of the Poor, Vol. 2: Crying out for Change. New York: Oxford University Press for the World Bank.	Narayana, D. E. A. (2001) Making the best of a bad situation: satisfaction in the slums of Calcutta. Social Indicators Research, 55(3): 329-352.	Nussbaum, M. (2000) Women and Human Development: The Capabilities Approach. Cambridge: University Press.	Diener, E. (2001) Making the best of a bad situation: satisfaction in the slums of Calcutta. Social Indicators Research, 55(3): 329-352.	Diener, E. (2001) Making the best of a bad situation: satisfaction in the slums of Calcutta. Social Indicators Research, 55(3): 329-352.	Diener, E. (2001) Making the best of a bad situation: satisfaction in the slums of Calcutta. Social Indicators Research, 55(3): 329-352.
Needs	Physiological needs Safety needs Social belonging Esteem Self-actualization Self-transcendence	Love - Companionship - Security - Protection - A sense of community - Meaningful work - Adequate sustenance - Shelter - Sexual gratification - Amusement - Rest - Recognition - Respect of person	basic personal consumer goods (food, clothing, housing, basic furnishings) basic services (education, pure water, health programmes, habitat, communications) productive employment infrastructure - (physical, human, technical, institutional) mass participation in decision-taking	Input-output (nutrition, water, air) - Climate balance with nature (clothing, shelter) - Health - Community - Symbolic interaction & Reflection (education)	positive attitudes toward the self, development of self-actualization, integration of psychological functions, autonomy, accurate perception of reality, and environmental mastery	Life-supporting relation to environment Food & water excretion exercise periodic rest, sleep Identity Freedom	Subsistence Protection Affection Understanding Participation Leisure Creation Identity Freedom	- Nutritional food/water - Protective housing - Work - Physical environment - Health care - Security in childhood - Physical security - Economic security - Safe birth control/childbearing - Basic education	Physical Sexual needs Security Love and relatedness Esteem & identity Self-actualization	- Power - Achievement - Hedonism - Stimulation - Self-direction - Universalism - Benevolence - Tradition - Conformity - Security	Poverty Social inferiority Isolation Physical weakness Vulnerability Seasonality Powerlessness Humiliation	Self-acceptance Positive relations with other people Autonomy Environmental mastery Purpose in life Personal growth	Health/nutrition/sanitation/rest/shelter/ security - Literacy/basic intellectual and physical capacities - Self-respect and aspiration - Positive freedom, autonomy or self-determination - Negative freedom or liberty - Enjoyment - Understanding or knowledge - Accomplishment (sort that gives life point/ weight)	material wellbeing health productivity intimacy friendship safety community emotional wellbeing	Material wellbeing: having enough food, assets, work health, appearance, physical environment Being able to care for, bring up, marry & settle children Self-respect & dignity Peace, harmony, good relations in the family/ community Civil peace A physically safe & secure environment Personal physical security Lawfulness & access to justice Security in old age Security in old age Confidence in the future Social security & general recognition of socioeconomic rights Peace of mind Happiness Harmony (including a spiritual life & religious observance) Freedom of choice & action	- Life - Bodily health - Bodily integrity - Senses, thought - Imagination - Emotions - Practical reason - Affiliation - Other species - Play - Control over one's environment	- Morality - Food - Family - Friendship - Material resources - Intelligence - Romantic relationship - Physical appearance - Self - Income - Housing - Social life	Relationships, competence, autonomy
SBS	X	X	X	X	X	X	X	X	X				X		X	(life)	X	
MAT			(basic consumer goods)							(stimulation)	X		X	X	X		X	
LOC		(shelter)	(habitat)	(shelter)				protective housing					shelter			(other species)	(housing)	
ACT		(meaningful work)	X		(autonomy)	X	(creation)			(self-direction)		(autonomy)	autonomy or self-determination					(autonomy)
KIN								safe birth control/childbearing	(love and relatedness)		X	(positive relations with other people)		(intimacy)	X	(affiliation)	(family)	(relationships)
COM	(social belonging)	X	X		X			significant primary relationships					X	community, friendship	(good relations in the community)		(friendship, romantic relationship, social life)	
DST	(esteem, self-actualization)	(recognition, respect of person)		(environmental mastery)	(social acceptance and recognition)				(esteem & identity)	(achievement)	X	(purpose in life, environmental mastery)	(accomplishment)		X			(competence)
SFT	X	X			(freedom from harassment)	(protection)	X	X	X	X	X			X	X			
	X - a very similar or identical formulation of need			() - a partially corresponding formulation of need														

Table 2
The cardinal needs (CDN)

	Cardinal need	Major satisfiers	Harmful deprivation	Maladaptive excess
SBS	Subsistence	Food, water, viable environment	Dehydration, malnourishment, hypothermia	Binge eating, overeating, compulsive eating disorder
MAT	Materiality	Material flow, objects, artifacts	Poverty, material deprivation	Compulsive shopping, affluenza, sudden wealth syndrome
LOC	Locality	Humanized biome, spatial anchor	Captivity, homelessness	Wilderness, concrete jungle
ACT	Activity	Exercise, locomotion, work	Bedriddenness, desk potato	Vigorexy, workaholism, hyper mobility
KIN	Kinship	Caregiver, family, parenting	Orphanage	Coercive family, intrafamily abuse
COM	Companionship	Intimate partners, inmates/associates	Singleton, exile	Overcrowding, agoraphobia
DST	Destination	Rank, status in hierarchies, mastery, initiation	Underdog, outcast	Effort-reward imbalance, celebutant
SFT	Safety	Alliances, collective defense, walls, armour	Wartime hostilities, disasters, pandemics	Palace, walled estate