



Reframing Human Enhancement: A Population Health Perspective

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The dominant understandings on human enhancement, such as those based on the therapy–enhancement distinction or transhumanist views, have been focused on high technological interventions directly changing biological and physical features of individuals. The individual-based orientation and reductionist approach that dominant views of human enhancement take have undermined the exploration of more inclusive ways to think about human enhancement. In this perspective, I argue that we need to expand our understanding of human enhancement and open a more serious discussion on the type of enhancement interventions that can foster practical improvements for populations. In doing so, lessons from a population health perspective can be incorporated. Under such a perspective, human enhancement focus shifts from changing the biological reality of individuals, to addressing environmental factors that undermine the optimal performance of individuals or that can foster wellness. Such a human enhancement perspective would be consistent with a population health approach, as it pursues more equitable and accessible interventions, on the path to addressing social inequality. Human enhancement does not need to be only about high-technological interventions for a selected group of individuals; rather, it should be a continuous project aiming to include everyone and maximize the public benefit.

Keywords: human enhancement, individualism, social determinants of health, population health, low-tech approaches

REFRAMING HUMAN ENHANCEMENT

Human enhancement has been a much-debated area in the past decades (Parens, 1998; Buchanan et al., 2001; President’s Council on Bioethics, 2003; Lin and Allhoff, 2008; Bostrom and Savulescu, 2009; Coenen et al., 2009; Savulescu et al., 2011; Presidential Commission for the Study of Bioethical Issues, 2015). One of the most common definitions of enhancement in these debates is the biomedical definition, which starts from the premise that there is a distinction between therapy and enhancement. Anything below the established baseline is considered treatment and anything above enhancement. Frequently biomedical definitions include those stating that enhancements are “interventions designed to improve human form or functioning beyond what is necessary to sustain or restore good health” (Juengst, 1997: p. 29) or those beyond the species-typical level or statistically normal range of functioning (Allhoff et al., 2011).

Another common way to conceptualize enhancement has been transhumanist-based definitions. In these cases, human beings are seen as work-in-process, thus such approaches take a more controversial approach in which the goal is the expansion or augmentation beyond species limits (Miah, 2003; Bostrom, 2005). Other definitions of enhancement have suggested *welfare* as the starting point in which the focus is on increases in the chances of leading a good life in the relevant circumstances (Savulescu, 2006). While others see human enhancement as “modification aimed at improving individual human performances and determined by interventions carried out on a

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scientific or technological basis on the human body” (Coenen et al., 2009: p. 17).

All of these definitions involve normative concepts such as health, disease, normal, natural, and the good life. All of these concepts have been a matter of continuous philosophical debate (Cabrera, 2015; Kahane and Savulescu, 2015), and in pluralistic societies such as ours those discussions are likely to continue. But there are other important conceptual issues that have been neglected within the human enhancement discussion. On the one hand, the debate on human enhancement has focused on high-technological interventions, such as genetic engineering (Baylis and Robert, 2004; DeGrazia, 2012), pharmacological interventions (Rose, 2002; Bolt and Schermer, 2009; Evans-Brown et al., 2012), nanotechnology (Lin and Allhoff, 2006; Cabrera, 2015), and human/machine interfaces (Warwick, 2014). Yet, strictly speaking even low-tech approaches like drinking coffee, being vaccinated, having a good night’s sleep, eating nutritious food, and exercising are human enhancements (Sandberg and Bostrom, 2006; Allen and Strand, 2015). On the other hand, the debate has focused on those interventions that are aimed at changing directly the biological and physical reality of individuals. Human enhancement is mostly seen and discussed as this individual enterprise to augment a physical or mental feature or even add new ones. This reflects a liberal individual perspective, which prioritizes individual preferences and well-being, self-interest, and freedom of choice. Such human enhancement practices politically, economically, and socially seem to benefit only a few and disadvantage or do nothing for the majority. Moreover, the liberal individual view, where the individual is seen as an abstract, rational, self-sufficient, and isolated being, neglects the importance of the different and complex relationships that shape human lives and their well-being (Held, 2006). These features have prevented a critical assessment and deeper exploration of complementary or alternative ways in which human enhancement can be conceptualized and ultimately practiced.

The point here is not to question the potential benefit that individual-based type of enhancement interventions might have; rather, it is to question the assumption that these are the only ways to enhance humans or that these are the enhancement practices that should be prioritized. With this in mind, in this paper, I question the emphasis on such individually focused enhancement interventions and argue that greater attention must be paid to complementary ways in which individuals and society can benefit from enhancement practices. A more inclusive understanding of enhancement is one that acknowledges the relationship between individual–society–environment, and balances social needs with individual preferences. A reframing of the debate can complement and inform ongoing work in science and technology and societal debate.

Such a reframing calls for moving beyond current enhancement perspectives and their individual-based high-tech approaches. In this regard, important lessons can be taken from a population health perspective and scholarship in the social determinants of health (SDH), including acknowledgment that a person’s well-being is shaped by a complex net of intersecting social determinants, and the weighing of outcomes is at the population level rather than at the individual one. Integrating these perspectives

into the ways in which enhancement is conceptualized could foster the promotion of other types of enhancement interventions that reflect more social values and which are a more pragmatic, politically feasible, and responsible ways to enhance humans.

The suggested reframing offered here is not mutually exclusive with current definitions of enhancement, rather it shows an underexplored perspective than can complement the current ones. It is an attempt to spark further discussion in terms of comprehending the functional character of human enhancement at a population level (Battaglia and Carnevale, 2014). In the next section, I provide an overview on population health and the SDH. Finally, I will make an argument linking the aims of population health with those underlying the human enhancement perspective offered here. This perspective merely scratches the surface in the conceptual and philosophical issues surrounding such an expansive view on enhancement. There will be many issues that need to be addressed, such as how to decide the interventions to be prioritized, or how to decide the group level we are targeting (e.g., a city, a town, and a district), but it serves as a starting point to introduce the reader to expanding concepts of enhancement beyond individualistic and high-technological approaches.

A POPULATION HEALTH PERSPECTIVE AND THE SDH

Considering that some of the most pressing global challenges we face at present are related to the health and well-being of the global community, it becomes clear why population health—which deals with optimizing the health of a population—has become a priority in the international agenda and a core focus in the era of health care reform (Gourevitch, 2014: p. 544).

Population health is generally concerned with “the distribution of health outcomes within a population, the health determinants that influence distribution of care, and the policies and interventions that impact and are impacted by the determinants” (Kindig and Stoddart, 2003). Population health seeks “to eliminate health-care disparities, increase safety, and promote effective, equitable, ethical, and accessible care” (Sidorov and Romney, 2011: p. 4). Such a definition of population health articulates the direction of contemporary public health as a broader model responding to historical failures of the traditional public health approach, including its been too confined with a focus on critical functions of state and local public health departments. In contrast with the narrow understanding of the fundamental causes of disease and health of traditional public health approaches, a population health model offers a more integrated view of the changing patterns of health within communities by grasping “how social and physical environments interact with biology and how individuals ‘embody’ aspects of the context in which they live and work” (Kelly et al., 2007).

Through policies or programs population health aims to improve the health of individuals and populations by embracing the full range of determinants of health; thus, addressing the underlying social, economic, and environmental conditions in an effort to shift the distribution of health risks. It is these social, physical, and economic environments, in which people are born, grow, live, work, and age, what is commonly referred to as the

SDH. The SDH reflect people's different positions in the social "ladder" (social position) of power, income, resources, status, and services (Blas et al., 2011). Research on SDH has clearly shown that there are other available options to improve individual and population well-being. Quality of education and working conditions, as well as community settings and infrastructure resources in support of community living, is a few determinants now known to shape health across contexts (Healthy People 2020, 2016). A growing body of research also indicates that social stressors (Tost et al., 2015), nutritional patterns (Gómez-Pinilla, 2008), and even television exposure (Blas and Kurup, 2010) are powerful determinants of health working across subgroups.

Clear messages of the SDH and population health scholarship have included a focus on promoting non-biomedical interventions, the intersection of different areas of expertise in order to address health and well-being goals, and a deep commitment to social justice, by improving daily living conditions and tackling inequitable distribution of power, money, and resources (CSDH, 2008; Nash et al., 2011). In addition, both of these approaches bring into their analysis a view in which the individual is not taken to be isolated from others or from his or her environment, but instead is regarded as a relational individual, who is greatly shaped by the interactions he or she has with the social and physical environments. With this overview on population health and the SDH, the next section elaborates on how the complementary enhancement perspective offered at the outset of the paper can take insights from these frameworks to promote more socially relevant enhancement practices.

POPULATION HEALTH AND SDH: TOWARD MORE SOCIALLY RELEVANT ENHANCEMENT PRACTICES

Just as population health emerged as a reaction against the individualistic 20th century biomedical approaches to health, disease, and health promotion, a more comprehensive approach to human enhancement could help address the pitfalls that come with a focus on only individualistic enhancement interventions. Thus, expanding and prioritizing enhancement practices that are focused on the social and contextual aspects that shape individual well-being and that promote more equal access to enabling conditions for people to truly exploit their capabilities, can be very valuable (Cabrera, 2015). This could represent an unprecedented opportunity to improve human lives by enabling the conditions for their development and flourishing.

The dominant understandings of human enhancement have focused on the interests, desires, and values of a reduced group of privileged individuals (mostly Western white men with certain economic advantages). Therefore, highlighting a broader and different set of interests, desires, and values might not only be a new focus but also it brings into the discussion those who historically have been left out of the enhancement discourse. More importantly, it urges us to rethink the assumptions upon which the current discourse is based; and to consider the possibility that far from being a source of enhancement, its principles, values, and criteria actually reinforce patterns of domination and

subordination that contribute to the deterioration and worsening of human well-being (Cabrera, 2015).

Reframing human enhancement can promote more engagement and representativeness in the debate of what sort of enhancement practices should be prioritized. In particular enhancement interventions more attuned to the different abilities, biological realities, values, and preferences of individuals in the population should be prioritized. Not everyone embraces radical and controversial enhancements, yet less drastic interventions aimed at improvement of well-being seem to be in the realm of what most individuals would find desirable and acceptable (Cabrera et al., 2015). Such enhancement practices might be better suited to address urgent population needs and current global challenges from multilevel perspectives and with the involvement of different sectors.

While science-based and technological interventions have helped in improving the human condition, it must be acknowledged that human enhancement does not necessarily require novel, high technology interventions, or radical technological interventions, which most often are neither cost-effective nor the best possible/available options. In this regard, one important insight from a population health framework is a focus on environmental and social interventions (Blas and Kurup, 2010), as these enable the conditions needed for people to live the lives they value and the conditions in which individuals and communities can be empowered (CSDH, 2008). This means that enhancement options are neither exhausted by medical solutions or technological gadgets nor by interventions focused on intervening directly in the human body. Environmental and social interventions should also be part of the repertoire of human enhancement practices (Sandberg and Bostrom, 2006; Levy, 2012; Cabrera, 2015), involving, among other things infrastructure and institutional design, nudges (Felsen et al., 2013), and other environmental changes, where there is sufficient evidence regarding their effectiveness, practicality, and amenability to change using available technologies, knowledge, and policies.

Lead paint abatement and interventions to ensure toxin-free workplaces are two examples of enhancement interventions in this more comprehensive enhancement perspective. The use of information technologies to outsource functions, such as memory, is another example of enhancement interventions that are not about changing the biological reality of individuals and which do not necessarily require high-technological interventions. Expanding the human enhancement debate to include this low-tech and more population oriented interventions can be an important step in achieving a more just distribution of enhancement benefits, and addressing the social, economic, cultural, and political realities shaping human lives. It would provide a platform to rethink the values underlying the dominant human enhancement interventions, such as competitiveness, egoism, and self-interest, and instead promote communal values, such as collective action, caring, and cooperation at the foreground of enhancement actions. Evidence from studies on implementing social determinant approaches in real-life situations (Blas and Kurup, 2010) bring hope in that there are things that can be done and that improvement of the sort suggested by such an enhancement perspective can be reached.

THE CHALLENGES

Despite the visibility of these issues and the evidence from research on the SDH, the importance of a population-based perspective within the discourse of human enhancement has not been fully appreciated. There are a few challenges that need to be addressed in order to move forward with such a reframing of human enhancement:

One challenge has to do with the problem of how to determine which interventions would bring about more population benefits compared to other possible interventions. In that regard, it is not clear that environmental interventions, such as painting the walls green for improved concentration, are necessarily better than a pill taken by an individual to enhance concentration, as in both situations not everyone would profit equally from the intervention. However, including the option of painting the wall expands the range of options available, in particular one that is likely safer as well as more economically and politically feasible. Regardless of which enhancement option one is inclined to favor, more empirical research is needed looking at different variables affecting enhancement outcomes.

Another challenge is connected to the idea that for some people expanding enhancement to include these types of interventions would constitute an unnecessary interference from different social actors in processes better left to market forces and individual choice. Yet, one has to remember that individuals are not discrete entities; they are relational. As such, changes to the environment and institutions are not necessarily infringements to individual autonomy but improvements in relational autonomy (Jennings, 2016).

Others might challenge the novelty of this enhancement perspective. The perspective offered here is innovative in that it builds on the population health and SDH frameworks to foster improvements that are responsive to the relational nature of individuals and the social determinants that affect well-being. While other suggestions have been put forward, including a shift from enhancement to enablement (Williams, 2007) or even moral enhancement (Douglas, 2008), the focus is still predominantly high technological individual-based interventions. Much of the moral enhancement literature, for example, is devoted to the ethics of giving people drugs to become, say, more emphatic. Yet, we are still left with a highly individualistic way of thinking about human well-being.

Another challenge stems from the fact that such an enhancement perspective is too broad, rendering almost everything as a form of enhancement. However, a broader perspective is essential for considering both the relative impacts of the pattern of social determinants and their interaction. Thus the importance of

reframing the human enhancement debate with such a broader scope is that it urges us to review the concepts underlying the enhancement discussion in the light of the relational nature of individuals and the impact various social determinants play.

Probably the major challenge for such a broadened enhancement perspective comes from finding ways to move it from the philosophical and theoretical to the practical application. A possible reason for this is the lack of motivation toward supporting interventions that although promising to bring large overall benefits for communities seem to bring small advantages to individuals.

These are just some of the challenges that lay ahead. Further research is needed to better understand the ethics of enhancement interventions at a population level. However, the suggested paths of action are feasible and from a population health perspective even desirable.

CONCLUSION

Human enhancement choices are very much about values, ideology, and political will. Consequently, these sorts of considerations will likely shape decisions to be made regarding the kind of human enhancement interventions to be prioritized. Therefore, there is value in trying to explore more inclusive enhancement perspectives. In particular, taking into consideration the current state of the world, there is a need to reframe or complement our current enhancement practices to include enhancement interventions that are safer, more pragmatic, sustainable, as well as politically and economically feasible. The enhancement perspective suggested here could point us to areas of research that might have been underestimated or/and neglected but also to a different set of values than the ones dominating the current enhancement discourse. It can also help capture the imagination, feelings, intellect and will of political decision-makers and the broader public and inspire them to enhancement interventions focused at the population level with benefits for society as well as individuals. A true commitment to the ethos of population health and willingness to address the SDH means we would have taken a major step toward human enhancement as a more just and caring way to improve the human condition.

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LC conceived the work and wrote the manuscript.

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