We need to talk about human enhancement. We not only need to talk about human enhancement in terms of sports, education, IVF and procreation; but also in terms of cognitive and moral enhancement as well. The issue grows as fast as we can talk about it. One of the ones who keeps up with this issue is Nicholas Agar. In 2010, Agar put out *Humanity’s End: Why We Should Reject Radical Enhancement* (The MIT Press). This was largely a survey work criticizing those, like Nick Bostrom and Aubrey de Grey, who defend the permissibility of some sort of radical enhancement or “improving significant human attributes and abilities to levels that greatly exceed what is currently possible for human beings” (2010, 1). Agar’s interest is the unsettling consequences of radical enhancement. *Humanity’s End*, while a very good book, leaves the reader asking for more in terms of a positive proposal for permissible enhancement. It is clear that Agar wants to defend some forms of human enhancement. And this is where *Truly Human Enhancement* comes in. This book is the welcome follow-up to the earlier book and his defense of moderate enhancement.

The book is composed of ten chapters. Chapters 1-4 and 7 make up the core of the book. Chapters 5, 6, 8, 9, and 10 are extremely interesting and cash out further aspects of Agar’s view while engaging in more recent aspects of the radical enhancement debate. For brevity, I will focus on what I take to be the central chapters that set up his defense of moderate enhancement.
The first chapter presents the notion of a transformative change. A transformative change is one that alters the state of the mental or physical characteristics such that it causes and justifies a significant change in how the person evaluates a wide range of their own experiences, beliefs, or achievements (5-6). A transformative change is not just the transformation per se, it is the shift in evaluative perspective that comes along with the transformation. To give a flavor of this Agar points to such situations as *Invasion of the Body Snatchers*, *Doctor Who* (cyberconversion), and *Star Trek* (Borg-assimilation). While many may balk at the fictional nature of these examples, there are different features that they illustrate. First is that many transformative changes are rationally irreversible. Once you have gone through a transformative change, you may no longer be in a position to see that you made an error in being enhanced. Second, there can be both positive and negative transformative changes. Positive transformative changes, such as when a child matures, are common. Negative transformative changes occur when one changes for the worse in the way in which we evaluate the experiences, beliefs, and achievements that constitute our lives (15). This is a core notion for Agar. It is this very distinction that lies at the heart of his rejection of radical enhancement and his defense of moderate enhancement.

The second chapter tackles the difficulty of defining enhancement and identifying the value in it. For Agar, enhancement is best thought of as ‘enhancement beyond human norms’ (19). If a modification of a human capacity to count as enhancement, then it enhances beyond human biological norms. This account is to rule out any enhancement meant as therapy or to restore normal levels of biological functioning. While many will focus on this definition, what is more important is the distinction between the objective ideal and the anthropocentric ideal. As Agar states, the objective ideal is that “human enhancements have value commensurate with the degree to which they objectively enhance our capacities” (20). The objective ideal maintains the degree to which our capacities make our lives go better increases with the objective degree of their enhancement (21). This is a matter of degrees of enhancement being mapped onto degrees of prudential value. More is better. This is in line with transhumanism (the movement of fundamentally transforming the human condition through technologies that will enhance human intellectual, psychological, and physical capacities). The anthropocentric ideal, on the other hand, identifies the value of enhancements relative to human standards (27). Some enhancements of greater objective magnitude are less valuable than enhancements of lesser magnitude. For Agar, the objective ideal describes changes to the instrumental value of human capacities, while the anthropocentric ideal describes different degrees of intrinsic values. Furthermore, the instrument value of a capacity corresponds to its propensity to yield external goods (contingent goods) and the intrinsic value corresponds to its instantiation of internal goods (goods only acquired in virtue of the enhancement itself). Both kinds of goods come in
degrees. Agar’s proposal is to assign prudential value according to the balance of the instrumental and intrinsic value of the resulting capacity.

In the third chapter, Agar argues that the internal goods of our activities respond differently to enhancement and increase up to a certain point. But beyond that point, they decline. This points to the problem with radical enhancement. Radical enhancement greatly increases instrumental value, but increases it beyond a normal human range. This argument is motivated by alienation that is caused in the experiences of people explained through simulation theory. I take it that Agar does not have a stake in the mindreading debate but relies on simulation theory simply to do the work of explaining the experiences we might be able to have once enhanced. But it does do some work. For simulation theory, the explanations of one’s actions are done so by simulating the mental process behind those actions. Simulation theory assumes there is a sufficient similarity between the agent simulated and the agent simulating. I may derive from my own experiences of kicking a ball a taste of what Lionel Messi experiences. There is a limit to this. Once the degree of enhancement goes beyond my ability of veridical experience, the less I value the experience. Too great of a difference breaks down the simulation so to speak. I cannot go outside the human realm to that of Super-Robo-Messi. It is at this point that we start to see the beginnings of Agar’s moderate enhancement view. According to Agar, allowing for enhancement up to that limit does say that we should sometimes accept the external goods granted by radical enhancement, but it does not entail that we should pursue external goods by means of radical enhancement.

The fourth chapter argues a further problem for radical enhancement based upon that which was argued in chapter three. According to Agar, the acceptance of radical enhancement proposes a problem to human identity. The problem is that “[i]t is likely to end the existence of its human subjects” (56). More specifically, if we take autobiographical memories to be an evaluative significance, then once we are enhanced, we will no longer have the same value (and simulation-required links) toward our past experiences, beliefs, and achievements. Our new enhanced standard will replace our past-unenhanced standards for what is memorable and valuable. While this may not convince initially, Agar argues further that radical enhancement disrupts psychologically over a person’s life from childhood. As one matures, her pre- and post-enhancement experiences are likely to be more pronounced. The transformative experiences will also be more drastic and the person will be unlikely to handle these psychologically. Finally, radical enhancement can make it such that a person’s life plan is confused and so complicated as to result in a good life.

Chapters five and six present two further sets of reasons for the rejection of radical enhancement. Chapter five sets out the problems with radical cognitive enhancement to
discover more truths about the universe and ourselves in it while chapter six focus on radical life extension. Together with the first four chapters, Agar has set the stage for his account of moderate enhancement. Chapter seven is devoted to this. However, the defense of moderate enhancement is unsatisfying. First, Agar argues for a “defeasible presumption in favor of moderate enhancement” (138). Second, Agar argues for this by rejecting the following six lines of thought bioconservatives offer for the rejection of the use of genetic enhancement:

- Genetic enhancements are morally problematic because their effects are of greater magnitude than environmental enhancements.
- Genetic enhancements pose a greater threat to our humanity.
- Genetic enhancements are less ‘natural’ than environmental enhancements.
- Genetic enhancements are less fair than environmental enhancements.
- Genetic enhancements tend to conflict with the recipient’s autonomy.
- Genetic enhancements are riskier than environmental enhancements.

Agar argues that each of these lines is mistaken since there are no in-principle moral differences between genetic and environmental enhancements and this leaves room for differences in practice. It is not the means by which one is enhanced, but the extent to which one is enhanced. The defense of moderate enhancement is rooted on their being no reason to reject enhancement on grounds of the means of the enhancement, the rejection of radical enhancement, and there being sometimes in which it is prudent to undergo enhancement and can be morally good to have future dependents enhanced.

Chapter eight focuses on the degree to which cognitive enhancement will enhance moral status. Chapter nine addresses the issue of moral permissibility of such enhancement. (Chapter ten is a summary chapter with a discussion of how we can look at pop culture examples, Star Trek, to take an optimistic view of enhancement.) These two chapters are exceptionally interesting in their own right and very good additions to the moral status debate in light of human enhancement.

There are a few things people may worry about in Truly Human Enhancement. The issue is presented at certain level of abstraction. This may turn some off. There are numerous uses of film, fiction, and thought experiments. Some approaching this book from more of a medical background may find this problematic, but those in philosophy will feel right at home. Where there are real world, technological examples to be used Agar uses them. The defense of moderate enhancement is also lacking. Further articulation of moderate enhancement is needed. One is left wondering where the limits of moderate enhancement lie. These concerns aside, Truly Human Enhancement makes a number of contributions to
furthering the conversation on human enhancement. Agar does a good job navigating bioethics, philosophy of mind, philosophy of biology, social and political philosophy, etc. all in an engaging and brief style. The book is fairly short, given what it covers, but anyone with concerns at any of the intersections of the enhancement debate will find much in it.