

## **Preferences for enhancement pharmaceuticals: the reluctance to enhance fundamental traits**

Aim of the article: to examine the willingness of young, healthy individuals to take drugs intended to produce psychological enhancements.

→ We suggest that people's willingness to take psychological enhancements will largely depend on beliefs about whether those enhancements will alter characteristics considered fundamental to self-identity.

- Western cultures: belief in a fundamental, essential self is widespread
- People are highly motivated to express their self-identities (fe often through consumption experiences)
- People are highly motivated to maintain a consistend and stable self-identity and will reject information that challenges this self-identity

➔ Proposition: people will be especially reluctant to artificially enhance themselves in ways that are believed to alter their fundamental selves.

### ***The availability and use of psychological enhancements***

- Many drugs already on the market are being used by nonclinical populations to make themselves perform and feel better

→ There are several drugs that can improve cognitive abilities such as:

- Intelligence
- Concentration
- Learning
- Memory
- ...

fe: Ritalin = to treat attention deficit disorder BUT can improve performance on basic problem-solving tasks that require high levels of concentration

➔ 16% of college students have used it as a study aid (often illegally)

fe: drugs to treat memory loss for patients with Alzheimer → already commercially viable compounds developed (donepezil; in test, pilots who took the drug just before learning specific maneuvers in a flight simulator outperformed a contol group on tests of perormance conducted 1 month later)

→ Social and emotional traits can also be altered in nonclinical populations

- Antidepressants: many nondepressed people use them to reduce negative affect and increase outgoingness
- Beta-blockers (for cardiac conditions): widely used by stage performers and public speakers to reduce performance anxiety

## ***The psychology of psychological enhancement***

Michael Gazzaniga: *"the intelligence advantage gained from taking pharmaceuticals is not ethically any different from the intelligence advantages that some people already get from their genes or from money spent on a good education"*



Bioethicists: *"enhancement = dehumanizing"*

- Little is known about the psychology underlying consumer demand for such pharmaceuticals
  - Most studies: strong resistance to the legalization of IQ enhancements
  - Neither study examined people's interest in taking the drugs themselves or the factors associated with such interest
  - *"In seeking by these biotechnologies to be better than we are or to like ourselves better than we do, we risk 'turning into someone else'"*

These passages reflect the authors' beliefs that:

- 1) people have a fundamental self-identity
  - 2) tampering with this self-identity may be unpalatable
- Although people are certainly willing to present themselves differently depending on situational contexts, it is clear that most people do see their core identities as being largely stable and consistent (self-schemata that capture the consistencies that they see in themselves)
- Some individual characteristics are generally seen as more fundamental to self-identity than are others
    - many people have the belief that physical characteristics are less fundamental to self-identity than are mental characteristics
      - + even variance among mental characteristics; fe: emotional mental characteristics considered to be more "deeply rooted" aspects of self-identity

HERE: examine whether the well documented concern for the preservation of self-identity affects the willingness of young, healthy individuals to take drugs designed to improve their own social, emotional, and cognitive abilities.

→ expectations: people less willing to enhance the more fundamental aspects of themselves, despite recognizing that such enhancements would make life better

## ***Study 1***

- Selected 19 social, emotional, and cognitive traits
  - Asked participants to imagine that a pharmaceutical had been developed that could safely improve a person with respect to each trait
  - H1: People will be less willing to enhance traits that are more fundamental to the self
  - Cause other factors may play a role in people's reluctance to enhance themselves, we asked participants to indicate their reasons for being reluctant to enhance each trait:
    - Concern for changing the fundamental self
    - Concerns about morality
    - Concerns about being affected in unexpected ways
    - General concerns about taking pills
- concern for changing the fundamental self is expected to be the most frequently cited reason

## ***Method***

- 357 participants (undergraduates)
  - online study
  - between-subjects design
    - 110 participants rated 19 traits according to how fundamental they are to a person's self-identity; randomly assigned to self-identity rating instructions:
      - inherence
      - fundamental (pills → change in 'who you are'? 1= no; 10= big change)
      - authenticity (pills → make you fake? 1= no; 10 = really fake)
- 247 participants were asked to indicate whether they would take a pill to achieve each of the 19 enhancements
- I would take a pill to get better at this
  - I wish I was better at this, but I would NOT take a pill
  - I do not wish to be better at this
- + after indicating their responses, participants were asked to indicate the reason(s) for their reluctance to enhance each of the traits (reasons given)

## ***Results and discussion***

- Consistent with H1, the self-identity index of each enhancement negatively and strongly predicted the percentage of people who were willing to take the enhancement
- The most common reason given was concern that the enhancement would "fundamentally change who I am" (significant)

- Study 1 provides strong evidence that the reluctance to fundamentally alter one's self-identity largely determines people's reluctance to enhance particular psychological traits

### ***Studies 2A and 2B***

- We sought to rule out some potential alternative explanations for the results of study 1:
  - *Value*: people are more willing to enhance less fundamental traits because they believe that these enhancements would better improve their lives.
  - *Magnitude*: people are more reluctant to enhance more fundamental traits because they believe that these enhancements would change more aspects of their lives.
  - *Unfairness*: people are more reluctant to enhance more fundamental traits because they believe that these enhancements would give them more of an unfair advantage over others.
  - *Self-possession*: people are more reluctant to enhance more fundamental traits because they believe that they are already superior on these trait dimensions.
  - *Effectiveness*: people are more reluctant to enhance more fundamental traits because they believe that these enhancements are less effective or plausible.
- Participants indicated their willingness to enhance the 19 traits, and they rated the fundamentalness of each enhancement.
- We used only the fundamental rating instructions from study 1 to assess self-identity
- Participants in study 2a also rated the enhancements on value, magnitude, and unfairness
- Participants in study 2b rated the traits on self-possession and the enhancements on effectiveness
- ➔ expectations: a strong negative relationship between fundamentalness and the willingness to enhance particular traits, even after controlling for each of the variables listed above

### **Method**

- 2a: 176 participants
- 2b: 90 participants
- online surveys
- both within-subjects design

### Results and discussion

- As predicted, participants were less likely to enhance traits that they considered to be fundamental to the self (significant)
- The average within-subject partial correlations between a participant's willingness to enhance and the same participant's fundamentalness rating were significantly negative in both studies
- In addition, willingness to enhance was significantly positively related to magnitude, unfairness, value and effectiveness

➔ the results of study 2 reinforced the results of study 1: people were less willing to artificially enhance fundamental traits, and the alternative explanations put forth seem unable to account for this relationship

### **Study 3**

- We suggest that one's own willingness to engage in enhancement is driven by different concerns than is one's desire to ban legal access to particular enhancements
- In study 3, we asked some people whether they would be willing to take the various enhancement pills and asked others whether they thought that the enhancement of each trait should be banned
- As in studies 1 and 2 we expected fundamentalness, but not moral acceptability, to primarily predict people's willingness to enhance
- As in previous research, we expected moral acceptability, but not fundamentalness, to primarily predict the desire to ban particular enhancements

**H2:** Unlike people's willingness to enhance, people's desire to ban legal access to enhancements will be driven more by moral concerns than by concerns about fundamentally altering the self.

### Method

- 359 participants
- online study
- between-subjects design
- group 1 (113 participants) indicated their willingness to enhance each trait
- group 2 (110 participants) indicated whether the enhancement of each trait should be banned
- group 3 (136 participants) rated the fundamentalness and moral acceptability of each enhancement

### Results and discussion

- the percentage of people willing to enhance each trait was very consistent with the previous studies
  - However, there was considerable variance across traits in the willingness to take and ban enhancements: some trait enhancements were appealing for one's own use but were frequently opposed for use by others. Conversely, some enhancements were less appealing for one's own use but were infrequently opposed for others' use.
  - Consistent with the reasons analysis in study 1, when willingness to enhance was regressed on the moral acceptability and fundamentalness ratings, fundamentalness was a significant predictor, but moral acceptability was not.
  - However, consistent with hypothesis 2, when the desire to ban legal access to the enhancements was regressed on these same two predictors, the exact opposite result was observed: moral acceptability was a strongly significant predictor, but fundamentalness was not.
- ➔ These results provide strong support for the hypothesized dissociation between the decision to enhance one's own traits and the decision to ban others' access to those enhancements.

#### ***Study 4***

- We examined the implications of this finding for advertising
  - We hypothesized that interest in enhancing fundamental traits could be increased through marketing messages that are framed so as to reduce the threat that enhancing fundamental traits poses to self-identity
  - We presented participants with advertisements for a hypothetical enhancement pharmaceutical (Zeltor), which was described as improving a trait that was high (social comfort) or low (ability to concentrate) in fundamentalness.
  - Manipulation of tagline
    - ➔ enhancement condition: "taking the drug would enhance people's true selves"
    - ➔ enablement condition: "taking the drug would enable people to realize their true selves"
  - We asked participants to rate their interest in trying the drug
- ➔ expectations (with what we know from studies 1-3): participants in the enhancement condition will show more interest in enhancing concentration than social comfort
- Moreover, if people are less willing to take a drug to enhance social comfort (vs. Concentration) precisely because so doing imposes a greater threat to the self, then an enablement tagline that minimizes this threat to the self should increase participants' willingness to take the social comfort drug and thereby reduce the difference in their relative preference for the concentration drug.
- ➔ we expected participants in the enablement condition to show a more equal interest in enhancing concentration versus social comfort

**H3:** people's relative preference for enhancing less fundamental versus more fundamental traits will be diminished when a drug's tagline frames it as an enabler of the true self rather than as an enhancer of the true self.

### Method

- 500 participants
- online survey
- 2 (more fundamental s. Less fundamental trait) x 2 (enhancement vs. Enablement tagline) between-subjects design
- enhancement tagline: "Zeltor – Become More Than Who You Are"
- enablement tagline: "Zeltor – Become Who You Are"
- participants answered two questions
  - "Assuming that the drug truly has no side effects, to what extent would you be interested in increasing your concentration (social comfort) by using a drug like Zeltor?"
  - "To what extent would you be interested in trying Zeltor at least once?" (9-point scales)

### Results and discussion

- As shown in figure 1, participants who read the enhancement tagline were more interested in the concentration drug than in the social comfort drug
  - this replicates the results of studies 1-3, which found that participants were less willing to enhance more fundamental than less fundamental traits
- However, consistent with hypothesis 3, this effect was reduced for participants who encountered the enablement tagline, and they were not more interested in the concentration drug than the social comfort drug
- Theoretical implications: the results lend further support to our claim that across-trait differences in people's willingness to enhance are largely governed by concerns about altering one's fundamental self-identity.
- Practical implications: these results suggest ways in which advertisers can reduce the identity concerns that would otherwise prevent nonclinical populations from seeking an enhancement pharmaceutical.
  - people seem reluctant to enhance traits that are fundamental to self-identity UNLESS advertisers pitch such enhancements as enabling rather than altering self-identity

### ***General discussion***

- Enhancements that were independently evaluated as being more fundamental to the self were the ones that people were most reluctant to take (studies 1-3)

- concern for changing the fundamental self was the most frequently cited reason for resisting enhancement (study 1)
- The relationship between traits' fundamentalness and the willingness to enhance was robust to controls for the enhancements' perceived value, magnitude, effectiveness, morality and unfairness and for the traits' self-possession and perceived controllability (study 2)
- Advertisers can successfully disarm the identity concerns that would otherwise prevent nonclinical individuals from enhancing a fundamental trait (study 4)
- It seems that our participants believe that social and emotional abilities are fundamental to self-identity, whereas more cognitive abilities are less fundamental  
→ however, it is still not clear which variables affect people's conception of the fundamental self, nor is it clear whether the distinction between cognition and emotion plays a causal role in governing beliefs about identity
- Concern for future research: how people's beliefs about their own capabilities might affect their desire to enhance themselves
- Concerns regarding the segmentation (here college-age adults)  
→ the preferences of older adults may be quite different
- Another unexplored issue is the role of culture (high or less value on personal identity)
- It is possible that when self-improvement can be achieved through more "natural" means, people may feel that the threat to self-identity is minimized and that the self is being enabled rather than enhanced (already small research pills vs mental training, but future research is necessary)