Chapter 1
Positive Technology: The Use of Technology for Improving and Sustaining Personal Change

ABSTRACT
This chapter describes and discusses the “Positive Technology” approach: the scientific and applied approach for the use of technology in improving the quality of our personal experience through its structuring, augmentation and/or replacement - as a way for improving and sustaining personal change. On one side, we suggest that our cognitive system is naturally shaped to identify and counter the experiential conflicts that are usually the main motives for change. Optimal experiences, also defined as “flow experiences”, instead allow the individual to consider long-term personal goals differently and start to experiment with changing them. In other words optimal experiences, when meaningful for the individual, widen the array of thoughts and actions, facilitating generativity and behavioral flexibility. On the other side we claim that it is possible to use technology to manipulate the quality of experience, with the goal of increasing wellness, and generating strengths and resilience in individuals, organizations and society.

INTRODUCTION
Emerging technologies – the Internet, mobile devices, virtual reality, etc. – have greatly improved our lives (Castelnuovo, Gaggioli, Mantovani, & Riva, 2003; Preziosa, Grassi, Gaggioli, & Riva, 2009; Riva & Mantovani, 2012a). However, integration of technology in every sphere of our life is also changing us. But how is it changing us and why?
Cyberpsychology is a recent branch of psychology that is trying to answer these questions. Cyberpsychology originated in human sciences, and is driven by the quest to help humans deal with their digital environments. The object of study in cyberpsychology, as it is for much Human-Computer Interaction research, is the change introduced by the technology and not the technology itself. In particular, it aims
at the understanding, forecasting and activation of the different processes of change related to the use of new technologies.

But, how do we lastingly change our lives for the better? This chapter presents a possible answer to this question by focusing on the concept of personal change. As underlined by recent research in psychology and neuroscience, personal change is a complex process depending on the person, the issues, and the situation. However, by merging the ideas of two influential transdiagnostic models of change - the Perceptual Control Theory and the TransTheoretical Model of Behavior Change - it is possible to describe a process of personal change that moves from an expressed desire for change to a recovery from inevitable relapses. Even if these characteristics of personal change are now shared by many of the leading approaches to psychotherapy, many of us experience psychological change without the help of any form of treatment. But how does this happen and why?

In this chapter we suggest that our cognitive system is naturally shaped to identify and counter the experiential conflicts that are usually the main motives for change. This is achieved through a specific cognitive process – presence - whose goal is the control of the activity of the individual: I am present in a real or virtual space if I manage to put my intentions into action (enacting them). Specifically presence provides the self with a feedback about the status of its activity: the self perceives the variations in the feeling of presence (breakdowns and optimal experience) and tunes its activity accordingly. The role of breakdowns in personal change is clear: to push individuals towards it. By perceiving a conflict (awareness) between different goals the subject is pushed to resolve the conflict between them.

Optimal experiences, also defined as “flow experiences”, instead allow the individual to consider long-term personal goals differently and start to experiment with changing them. In other words optimal experiences, when meaningful for the individual, widen the array of thoughts and actions, facilitating generativity and behavioral flexibility. Within this view, we defined transformation of flow as a person’s ability to draw upon an optimal experience and use it to marshal new and unexpected psychological resources and sources of involvement.

In this chapter we will focus on the possible role of technology in this process. Specifically, we will introduce and describe the “Positive Technology” approach - the scientific and applied approach to the use of technology for improving the quality of our personal experience through its structuring, augmentation and/or replacement - as a way of framing a suitable object of study in the field of personal change (Graffigna, Barello, Wiederhold, Bosio, & Riva, 2013; Riva, 2012c; Riva, Banos, Botella, Wiederhold, & Gaggioli, 2012; Wiederhold & Riva, 2012). Specifically, we suggest that it is possible to use technology to influence three specific features of our experience - affective quality, engagement/actualization and connectedness - that promote optimal experiences inducing adaptive behaviors and personal change (Graffigna, Barello, & Riva, 2013a, 2013c). In this framework, positive technologies are classified according to their effects on a specific feature of personal experience. Moreover, for each level we have identified critical variables that can be manipulated to guide the design and development of positive technologies.

UNDERSTANDING PERSONAL CHANGE

How do we lastingly change our lives for the better? There is not an easy answer to this question. As noted by Higginson and Mansell (2008): “The mechanism of psychological change is not fully understood. This is clear in research demonstrating the efficacy of different therapeutic approaches and the significant rates of natural recovery.” (p. 326).
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