

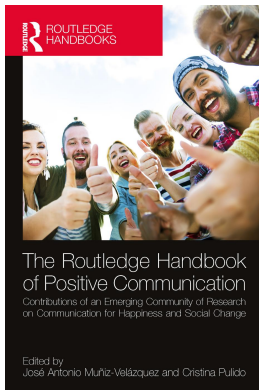
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WHAT CAN SCIENCE TELL US ABOUT HUMAN HAPPINESS (AND WHY AND HOW SHOULD WE DISSEMINATE IT)?

Gonzalo Hervás and Covadonga Chaves

Introduction

The science of happiness is a converging movement that brings together various scientific disciplines around a common goal: to better understand the underpinnings of human happiness and to provide ways of improving it. Positive psychology is one such discipline that stands out within this movement, yet we must not overlook the economists or sociologists whose contributions have deeply enriched our understanding and driven further scientific research into happiness.

The primary goal is scientific in nature, to investigate and to try to understand the topic under research as an end in itself, without ignoring that the science of well-being has always been about being useful to society. Similarly, the issues of personal well-being and happiness are so important to society at large. Even public policy is being shaped by the science of happiness, since it is becoming apparent that governments must not only look after economic indexes but also overall well-being of the population. There is clearly a need in our societies for a better understanding of happiness, in terms of the internal and external processes that can either nourish or dampen well-being. Informing the public about the science of happiness thus becomes a key task, albeit a sensitive one. Insights on well-being is so relevant to each individual's self-view, while it can be helpful, it can also produce critical misunderstandings. Hence, the aim of this chapter is to review the complex literature on well-being and then offer some recommendations on how to inform the public of the findings.

What Is Well-Being?

Happiness is probably the word most used by lay people for referring to emotional or psychological well-being. However, happiness is also a transient mood which tends to bias the meaning away from the deep and stable features that characterizes well-being (Vazquez & Hervás, 2012). Nevertheless, for the sake of simplicity we will use both terms interchangeably.

For years it was named “subjective well-being” which was conceived as a combination of both affective and cognitive ingredients (e.g., Diener, Scollon, & Lucas, 2003; Pavot & Diener, 1993). The cognitive component of subjective well-being referred to life satisfaction, and affective components included positive affect (experiencing pleasant emotions and moods) and low negative affect (experiencing unpleasant, distressing emotions and moods). High levels of subjective

well-being do not imply the absence of negative emotions. Instead they are still there but less frequent and prominent than positive ones (Fredrickson, 2013).

Eudaimonic well-being approaches emphasize that it is crucial to include high functioning when assessing well-being, to get a more precise picture of the well-being of individuals (e.g., Hervas & Vazquez, 2013). However, to be able to assess how well-being emerges, it was necessary to define the core ingredients of well-being (i.e., the characteristics of a good life). Carol Ryff (1989) defined well-being as the consequence of high levels of autonomy, personal growth, self-acceptance, purpose in life, competence or environmental mastery, and positive relations with others. Other authors have emphasized that three of these areas (i.e., relations, autonomy, and competence) are more relevant for well-being than the rest (Deci & Ryan, 2000).

Martin Seligman (Seligman, 2002) argued that well-being is derived from experiencing positive emotions (the pleasant life), but also from experiencing a high level of engagement in satisfying activities (the engaged life) as well as experiencing a sense of connectedness to a greater whole (the meaningful life). Thus, a fulfilled life is one in which people may express and develop their maximum potentials leading to benefits, not only for themselves, but also for society at large (Waterman, 2008). More recently, the PERMA model expanded this approach to include five core elements of psychological well-being (i.e., Positive emotion, Engagement, Relationships, Meaning and purpose, and Accomplishment).

Obviously, overall well-being is influenced by multiple variables, both internal and external. These eudaimonic models try to differentiate which are key variables from those that act as moderators. For example, gratitude, emotional intelligence, or optimism are associated with well-being, but they can be considered contributors rather than key components.

The literature discussing the basis of well-being is extensive and reflects the inherent complexity of the subject. As a result, messages that reach us about happiness are confusing: some say that it is in our mind, in the temperament, or in the genes; others say that it is the enjoyment of the moment; and others argue that well-being heavily depends on the circumstances or even society. Although it is no easy task, we are going to review the literature on well-being as comprehensively and clearly as we can. At the same time, we will use the pattern typically seen in lay approaches to happiness.

Happiness Is in Our Mind

“It’s all about attitude” or “happiness is in our mind” are common messages that we usually hear in our daily lives. Although these messages are not entirely false, they aim to point out that most vital circumstances do not seem to have a significant impact on levels of well-being. Furthermore, these assertions suggest that to become happier is easy, if you have the right attitude. Unfortunately, the real picture is not so clear.

Some well-established research has showed that some attitudes and traits are related to well-being. It cannot be denied that optimism is closely related to happiness, and even physical health, especially when facing adversity (Carver, Scheier, & Segerstrom, 2010). Additionally, optimism has been experimentally linked to a reduced experience of pain (Hanssen, Peters, Vlaeyen, Meevissen, & Vancleef, 2013). Another example is thankfulness. Gratitude arises as expressing appreciation for what one has, as opposed to an excessive emphasis on what one wants. Gratitude has been linked to positive outcomes, such as increased levels of positive affect, life satisfaction, optimism about the future, prosocial behaviors, and better health (Emmons & McCullough, 2003; Bono & McCullough, 2006). Moreover, a grateful attitude may help the individual find positive meaning in negative circumstances (Emmons & McCullough, 2003). Thus, this implies that it is easy to increase happiness by changing attitudes. While some research has showed that optimism, gratitude, as well as other traits and attitudes can be changed in the short-term through

psychological programs, it is not so clear that such changes remain stable in the long-term (Boehm & Lyubomirsky, 2009).

Those who claim that happiness depends mostly on us often argue that there is evidence suggesting that demographic variables and general circumstances of life (economic situation, sex, educational level, etc.) do not explain a much of individual happiness (Sheldon & Lyubomirsky, 2006). Some authors have interpreted this to imply that external circumstances do not affect happiness levels so much and that we should not be too concerned about these. However, this is not accurate. When people face relevant adversities, for example, the loss of a loved one or not being able to get a job, a prolonged decrease in well-being is observed (e.g., Keyes et al., 2014). Low-income also seems to reduce happiness when it is severe or in the context of an economic crisis (Helliwell, Huang, & Wang, 2015). While it is true that people have an extraordinary capacity to adapt to negative life situations, this does not mean that circumstances do not matter. Resilience is a trait that is not spontaneous; it must be cultivated over time. Thus, recommending to people who are suffering to change their attitude can be ineffective in most cases, or even counterproductive in others.

At the same time, research suggests that changing one's life circumstances (e.g., marital status, career, location, and income) is not necessarily the only path to improving our well-being. Accumulated research convincingly suggests that generally a significant portion of happiness may be under people's control through the activities they prioritize and how they face situations in their lives (Sheldon & Lyubomirsky, 2006). Moreover, adopting the right attitude or approach can be of great benefit when facing adversity (e.g., optimism or emotional intelligence).

Beyond attitudes, there are several other factors that we should consider when defining determinants of happiness. For instance, twin, adoption, and family studies have found that well-being levels are significantly influenced by genetics (Bartels & Boomsma, 2009). Such evidence suggested that people's happiness levels are at least partly genetically explained. Recent research on epigenetics and gene-environment interactions has found that biology and environment continuously interact in a dynamic process to influence people's behavior (e.g., Plomin & Spinath, 2004). Thus, genetic predispositions are not deterministic. Set point can be substantively changed, which means that through particular vital changes a person could progressively increase their level of well-being.

One way through which our genes contribute to explain happiness is temperament. Behavioral genetics research suggests that individual differences in infant and child temperament are genetically influenced (Saudino, 2005). Numerous investigations in different countries of the world have shown that two features of the basic personality appear unequivocally associated with happiness and life satisfaction: extraversion and emotional stability (Morris, Burns, Periard, & Shoda, 2015). Extraversion is a feature characterized by the tendency to sociability and to engage in rewarding experiences. In fact, some authors argue that their sensitivity to experiences of enjoyment leads them to pay so much attention to the social world. Extraverted individuals are able to create positive and stimulating environments in which relationships are a source of habitual gratification. Moreover, they have greater social support, especially when facing adversities (Hervas, 2007). Even so, emotionally stable people tend to have moderate reactions to small and large events of life. If they experience negative emotions, these are less intense and less durable than those experienced by people with greater neuroticism. Stable people tend to better handle everyday difficulties, family problems, and failures. In addition, they have better self-esteem and a better ability to regulate their emotions. As cited above, other personality factors such as optimism are also related to happiness (Carver et al., 2010). In any case, it is worth mentioning that all people, introverts and extroverts, optimists or pessimists, might learn simple strategies (e.g., paying attention to positive experiences already available in their current daily life) so that their natural tendency does not diminish their chances of being happier.

In short, although individual differences in biology and life circumstances combine to explain part of the happiness variance, other elements such as attitudes, intentional activities and daily habits explain a large portion of individual differences in happiness (Lyubomirsky & Layous, 2013). Paths to greater happiness might be more complex than originally thought.

Happiness Is in the Moment

Many people spend their day-to-day life looking forward to an upcoming event or ruminating over one from the past. Such deeds lead us to lose the ability to be in the present and to fully enjoy life. Putting off our happiness for later may have a high cost for our well-being and mental health. Research on positive psychology has shown that appreciating and savoring small pleasures every day is one of the most powerful strategies to increase our happiness. For instance, as we have seen previously, there is a significant association between extraversion and happiness. But what exactly do extraverts do to be happier? Research has shown that the ability to enjoy small things is an essential path that makes extraverts happier than introverts. In a study in which the participants visualized a video that they had previously chosen, results showed that, when in a positive mood, extraverts had a greater preference for selecting positive videos than introverts (Hervas & López-Gómez, 2016). Thus, the ability to look for positive experiences as a priority and to enjoy them may be a significant route to happiness. And more importantly, this ability can be learned and incorporated into people's daily lives. Thus, savoring the present moment allows us to cultivate positive emotions and increase general life satisfaction.

Even though psychologists have studied emotions for over a century, research have focused mainly on negative emotions. Until recently, the study of positive emotions has been limited and scarce. Based on numerous studies, Barbara Fredrickson proposed the “Broaden and Build” theory (Fredrickson, 1998, 2001) that provides a useful theoretical framework to understand positive emotions. While negative emotions have been associated with survival and protection in response to a threatening situation, positive emotions have been related to the ability to explore the environment, to be open to new information, to create and build new resources. According to this theory, positive emotions broaden the scope of attention, enabling flexible thinking. This in turn facilitates the development of new skills, networks, and capacities that are essential to adaptively handle a stressful event (Fredrickson, Tugade, Waugh, & Larkin, 2003; Aspinwall, 2001). These personal resources include physical (e.g. healthy behaviors) (Cohen, Alper, Doyle, Treanor, & Turner, 2006), social (Kok et al., 2013), cognitive (Tugade & Fredrickson, 2002), and psychological resources (e.g., optimism, creativity; Scheier & Carver, 1993). In the long-term, people who experience more positive emotions are more satisfied with their lives, build more positive relationships with partners, get better jobs, or even have better health (see Lyubomirsky, King, & Diener, 2005). Therefore, even though positive emotions have been considered less relevant to human evolution, research has demonstrated that they may play an essential role in increasing or maintaining long-term well-being by channeling more effective coping resources (Tugade & Fredrickson, 2002).

There are several positive interventions that have already established their effectiveness in promoting positive emotions (Lyubomirsky & Layous, 2013). For instance, research has shown that learning to deliberately cultivate gratitude is an effective way to increase well-being (Emmons & McCullough, 2003).

Another effective way to cultivate positive emotions and savor the present is meditation. Meditation interventions such as mindfulness-based interventions have proven to be effective for increasing well-being and positive emotions (Rodríguez-Carvajal, García-Rubio, Paniagua, García-Diex, & Rivas, 2016). Mindfulness refers to the self-regulation of attention to one's experiences in the present moment with curiosity, openness, and acceptance (Bishop et al., 2004).

Research on mindfulness has shown that it is related to higher psychological well-being (Baer et al., 2008). Practicing mindfulness reduces anxiety and stress, decreases reactivity to emotional stimuli and improves emotional regulation by reducing over-involvement (rumination) or under-involvement (distraction) (Hervas, Cebolla, & Soler, 2016; Ortner, Kilner, & Zelazo, 2007). Moreover, some types of meditation, such as meditating on positive feelings toward self and others or compassion meditation, have been proven to reduce negative thoughts about oneself and strengthen social relationships (Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008; Gilbert, 2009).

In short, research has defined an essential route to well-being. Paying attention to the present moment, savoring small daily pleasures, and cultivating an attitude of gratitude for the good things that happen in life is a significant pathway to happiness. And most importantly, these skills can be learned and developed intentionally.

Happiness Is in Society

One source of influence that it is usually underestimated is the role of society. By society, we mean the characteristics of the country as well as the city, and also includes the socioeconomic development and cultural features that can affect well-being. Some authors have labeled this component as social well-being (i.e., societal well-being), which derives from the perception that a country gives its citizens the opportunity to thrive, and this notion also includes other components such as the feelings of belonging to a community (Keyes, 1998).

Although the research in this area is mostly correlational, there are some relevant insights. For example, the differences in perceived freedom, equality, and corruption across countries may explain some of the differences in well-being (Veenhoven, 2004). Some of these factors are easily connected with personal well-being. For example, freedom in a society clearly promotes the individual's sense of autonomy. Similarly, there is also interesting research on economic factors. For example, we know that poverty as well as economic crises may severely affect well-being, both when analyzing countries and when exploring its effects on individuals within a given society (Helliwell et al., 2015). Inequality also seems to be negative, although there are some exceptions. In some countries, such as the United States, this relationship is reduced. Moreover, there is even some data showing that this relation can be reversed in some parts of China. The reason for this variable pattern is how individuals influenced by culture interpret inequality. In the US, most citizens believe they live in a mobile society, where inequality is interpreted as something that can be outwitted thanks to hard work. On the contrary, in Europe, which is perceived to be a steadier society, inequality is interpreted as something stable and unfair (Alesina, Di Tella, & MacCulloch, 2004). Other research has confirmed that inequality reduces well-being, not only because it produces poverty for some, but because it generates perceived unfairness and lack of trust for many others (Oishi, Kesebir, & Diener, 2011).

Environment issues also matter. There is an increasing consensus about the key role of green areas for citizens' well-being and health (e.g., Douglas, Lennon, & Scott, 2017). For example, a longitudinal study found that moving to greener urban areas was associated with sustained well-being improvements over the following three years (Alcock, White, Wheeler, Fleming, & Depledge, 2014).

Overall, distant societal factors seem to have a subtle yet significant influence on well-being, and it should not be underestimated.

Happiness Is in Living

Beyond basic traits and attitudes, eudaimonic well-being emerges from the quality of the structural elements of our lives: the quality and quantity of relationships, the quality and fit of our

jobs, how we are engaged in our present and future, and more. Moreover, a good life comes from actions that are coherent with personal values that lead people to grow, and feel autonomous and competent.

The positive effect is very clear for relationships. Having a strong sense of relatedness is closely linked to well-being. Happy people report having more friends, having higher-quality relationships with others, and spending more time with others (Diener & Seligman, 2002; Lucas, Le, & Dyrenforth, 2008).

Similarly, developing a sense of meaning in life is associated with higher well-being (Steger, Frazier, Kaler, & Oishi, 2006). Although this is sometimes a matter of having an attitude that allows each individual to acknowledge their contributions, it also depends on whether the person finds an activity through expressing his or her values. Values-driven actions often imply a full commitment to something greater than oneself, which makes people feel alive and real (Ryan & Deci, 2001).

The key role of these issues explains why sometimes external circumstances are so disturbing. Losing a loved one as well as other life adversities commonly block some of the essential nutrients for well-being. For example, the experience of unemployment is usually associated with a restricted social network, a limited sense of competence and meaning of life, along with diminished autonomy and self-acceptance. Thus, a severe or chronic lack of satisfaction in these key themes may lead to psychological dysfunctions. For example, in a longitudinal study, people who scored low on psychological well-being (Ryff, 1989), as defined by nutrients, such as self-acceptance, autonomy, purpose in life, positive relationships with others, environmental mastery, and personal growth, were up to seven times more likely to experience significant symptoms of depression at the ten-year follow-up (Wood & Tarrrier, 2010).

Overall, we should emphasize that beyond temperament, traits, and attitudes, the presence of psychological nutrients that allows us to fill our lives (i.e., eudaimonic well-being) are really crucial for understanding happiness. Although different unitary approaches about the nature of happiness are often underscored (e.g., it is in our mind, it is in the moment . . . etc.), we should conclude that happiness seems to be an outcome that relies on a variety of factors. Thus, any partial explanation will be misleading.

Communicating the Science of Well-Being

The science of well-being has given us a great deal of new insights and knowledge that we were not aware of. Most scientists and practitioners agree on the relevance of sharing useful information about well-being with the population at large, but there is also an increasing awareness that this is not as easy as expected. The transfer of knowledge from science to the general population can lead to iatrogenic effects (Grimshaw, Eccles, Lavis, Hill, & Squires, 2012). How should happiness research be effectively communicated? Can the way we inform spur a negative or unexpected effect? If so, how can we avoid this misinformation?

Below we provide some recommendations that may help with informing the population more effectively and accurately.

1. *Informing that well-being is a difficult issue has several advantages.* We may affirm that well-being is difficult in at least two senses: it is difficult to fully understand and it is difficult to build up. As stated earlier, individual happiness depends on many factors and how these are weighted can vary from person to person. As a result, what works for the average person, generally the target profile of most research, does not necessarily work for all other individuals. Therefore, general advice or guidelines have to be carefully offered. The idea that happiness is complex, and we are far from knowing everything about it, leaves room to expect some findings may

not apply to everyone to the same extent. Besides, when we recognize that being happy is not easy, at least for a significant amount of people, we avoid setting too high a standard for most people. As we reviewed, genetic factors and external circumstances can significantly reduce our capacity to improve well-being. The notion that happiness depends on oneself and that it is easy to attain may increase frustration especially in most vulnerable individuals, such as those who have to face more external or internal limitations (e.g., Gruber, Mauss, & Tamir, 2011).

2. *Being unhappy is not being a failure.* It is also important to explicitly address and normalize the notion that people may go through periods when they are unhappy. In fact, achieving a deeper and longer-lasting happiness sometimes involves putting in effort and taking on sacrifices that lead the person to be unhappy for a while. Besides, depending on the person and the situation, unhappiness may be unavoidable for months (i.e., as in the process of dealing with a serious illness of a loved one) or years (i.e., having a child with severe problems). Acceptance and change have to be balanced to approach happiness. For example, it is true that unhappiness may be the outcome of bad attitudes, lack of effort, or a psychological problem, and that addressing these factors may be the determinant for improving an individual's well-being. Only offering a balanced perspective that allows the person to be motivated to improve, without excessive urge or anxiety, will lead to better possible outcomes.
3. *Happiness is not the only motive.* Happiness is a key value for most people as demonstrated by ample evidence (e.g., Adler, Dolan, & Kavetsos, 2017). However, this does not mean that it is the only value, or even the primary value, for all people in all scenarios. It is obvious that a person can adopt many other values, such as justice, freedom, honesty, health, money, friendship, and family, among many others. However, in certain cases, circumstances can lead to the person sacrificing their own happiness to protect another value, which may occur depending on the person's hierarchy of values. For example, sometimes individuals make decisions at the expense of their well-being. The relative absence of other values in the public domain indirectly leads to putting all the focus on happiness. However, it all becomes clearer, if it is acknowledged that happiness does not have to be the *primus inter pares*, the highest value. Thus, it is useful to recognize that a variety of values drive us. Of these motives, the desire for happiness for oneself and happiness for loved ones may stand out in general, but not in specific situations.

Conclusion

Research on well-being has become a fruitful line of investigation over the last two decades. This process has evolved along with a growing interest among the general population who are keen to find out more on the nature of well-being. Unfortunately, it is not clear if the ideas that have taken root among readers and consumers of social media are really accurate or even beneficial. At any rate, the need for a deep understanding of well-being remains, and scientists should not miss this great opportunity for knowledge transfer with far-reaching potential implications.

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