Journal of Economic Psychology 32 (2011) 434–439

Contents lists available at ScienceDirect

Journal of Economic Psychology

journal homepage: www.elsevier.com/locate/joep

On fatalistic long-term health behavior

Serge Macé *, Fabrice Le Lec [1]

Institut Catholique de Lille, Faculté Libre de Sciences Economiques et de Gestion – LEM CNRS UMR 8179, 41 rue du Port, 59 016 Lille Cedex, France

ARTICLE INFO

Article history:
Received 18 May 2009
Received in revised form 11 February 2011
Accepted 24 February 2011
Available online 5 March 2011

JEL classification:
I12
D03

PsycINFO classification:
3365

Keywords:
Hedonic adaptation
Health
Aging
Prospect theory

ABSTRACT

Many adults have an overly pessimistic view of old age because they fail to correctly predict their ability to hedonically adapt to old-age health related problems. A standard utility model where the marginal utility of health is higher at a lower level of health predicts that this overly pessimist view raises the incentive for healthy behavior. But this is at odds with empirical research that indicates that people with more negative aging stereotypes tend to adopt less healthy practices, transforming this negative view into a self-fulfilling prophecy. The aim of this note is to show that this fatalistic behavior can be explained through prospect theory by modelling this overly pessimistic view of old age as a failure to predict the change in the reference point due to hedonic adaptation. Given the diminishing sensitivity in the loss domain, people undervalue the future marginal value of health investment and may therefore underinvest in health as long as loss aversion is not too strong.

1. Introduction

Many people have an overly pessimistic view of old age. They tend to systematically associate it with languor, frailty, illnesses, dependence or asexuality. In fact, those traits are far from being as frequent as people believe as ageism surveys indicate (see in particular Palmore, 1998). And they are not experienced as negatively as expected because people partially adapt hedonically to them. Both hedonic adaptation to old age and its misprediction have been now well documented. It is indeed a classic result of psychology that people tend to adapt hedonically to new conditions (Frederick & Loewenstein, 1999) and to deteriorated health conditions in particular (Albrecht & Devlieger, 1999; Ashby, O'Hanlon, & Buxton, 1994; Brickman, Coates, & Janoff-Bulman, 1978; Oswald & Powdthavee, 2008; Schulz & Decker, 1985; Wu, 2001). Young people however are not fully aware of their future ability to adapt. They typically tend to underestimate it. For instance, people experiencing chronic illness, long-term treatment, and disability report greater happiness or quality of life ratings than what healthy people predict they would under similar circumstances (Buick & Petrie, 2002; Lacey, Fagerlin, et al., 2006; Riis et al., 2005; Smith, Sherriff, Damschroder, Loewenstein, & Ubel, 2006; Ubel, Loewenstein, Schwarz, & Smith, 2005; Walsh & Ayton, 2009). Hedonic adaptation and the failure to fully anticipate it also help explain the "old age paradox", that is the fact that old people are happier than expected, and even sometimes happier than younger people (Blanchflower & Oswald, 2008; Lacey, Smith, & Ubel, 2006; Yang, 2008).

* Corresponding author. Tel.: +33 3 20 13 41 01.
E-mail addresses: serge.mace@icl-lille.fr (S. Macé), fabrice.lelec@icl-lille.fr (F. Le Lec).
[1] Tel.: +33 3 20 13 40 92.

0167-4870/$ - see front matter © 2011 Elsevier B.V. All rights reserved.
doi:10.1016/j.joep.2011.02.016

This negative old age perception is likely to affect health behaviors. It may lead some to make huge efforts to delay these effects by choosing a healthier lifestyle (sports, healthy goods, cosmetic creams or surgery...) but may result for others in adopting a fatalistic behavior by doing nothing and enjoying life to the maximum before getting old. In the latter case, the negative perception of old age gives rise to a self-fulfilling prophecy. Available studies suggest that such an effect could be predominant. Using the Baltimore Longitudinal Study, Levy, Zonderman, Slade, and Ferruci (2009) showed for example that people aged between 19 and 49 holding negative age stereotypes had a greater likelihood of experiencing cardiovascular events up to 38 years later than individuals with more positive age stereotypes after controlling for the main risk factors. Levy and Myers (2004) found that older people with more positive perceptions of aging adopted on average a more preventive approach like eating a balanced diet, exercising and following directions for taking prescribed medications, over the next two decades after controlling for age, education, functional health, gender, race, and self-rated health. Other studies also observed that seniors with low expectations regarding further aging are less likely to take part in physical activities (Sanchez, Torres, & Mena, 2009; Sarkisian, Prohaska, Wong, Hirsch, & Mangione, 2005), to have a primary care provider or to receive vaccinations (Goodwin, Black, & Satish, 1999; Sarkisian, Hays, & Mangione, 2002), again after adjusting for socio-demographic characteristics. The consequence is that people with more positive perceptions of aging report better health, when health is measured by functional abilities (Levy, Slade, & Kasl, 2002) or by longevity (Levy et al., 2002).[2]

The previous observations raise a major theoretical issue since a fatalistic behavior cannot be straightforwardly accounted for in the standard utility framework in which the marginal utility of health is higher at a lower level of health. In other words, in this framework, a negative view of old age should lead people to pay more attention to their long-term health, not less. The aim of this note is to show that such a fatalistic health behavior can be explained with prospect theory (Kahneman & Tversky, 1979; Thaler, 1980, 1985) by modelling the overly pessimistic view of old age as a failure to predict the change in the reference point due to hedonic adaptation. The core idea is that a given improvement in future health from a low level may be coded as a reduction of a loss when not anticipating hedonic adaptation, but as a gain when anticipating it. Given the diminishing sensitivity in the loss domain, the failure to predict adaptation when old may lead individuals to strongly underestimate the future marginal value of a moderate health improvement at that age. Loss aversion, which captures the fear of health deterioration as a consequence of aging, plays as a countervailing force though. This is so since the steeper utility for losses, the larger the benefits from investments in health at an older age. Hence, those most likely to underinvest in health are people who do not anticipate hedonic adaptation and are least loss averse.

2. A prospect theory approach to health valuation under hedonic adaptation

Consider for the sake of simplicity an individual living two periods: period 1 (young) and period 2 (old). The first-period health capital h_1 is given and the second-period one h_2 depends on the health investment made during the first period. If the individual does not invest in her health capital, she will reach when old a minimum level $h_{min} > 0$, which allows her to live. Furthermore, whatever efforts she makes to preserve her health and to "stay young", she ends up less healthy when old ($h_2 < h_1$). If I represents any given health improvement starting from the minimum health level, these assumptions can be summarized as:

$$h_2 = h_{min} + I \quad \text{with} \quad I < h_1 - h_{min} \tag{1}$$

When the individual is young and has to decide whether or not to engage in healthy or unhealthy practices, she does so on the basis of the anticipated value of these practices. In prospect theory, people subjectively evaluate situations in terms of losses and gains compared to a reference point. But hedonic adaptation may have a strong influence on this evaluation. Following Frederick and Loewenstein's (1999) idea of "shifting adaptation", we model hedonic adaptation to a negative event as a decrease in the reference point. Here, people adapt hedonically to old-age health related problems by reducing their health reference point, that is the health level below which they consider being in the loss domain. As long as they do not anticipate hedonic adaptation however, they base their evaluation on a higher health reference point. For the sake of simplicity, suppose that h_{min} is the health reference state that the individual should have chosen had she correctly predicted hedonic adaptation but that the individual uses her present health state h_1 as the reference point to measure the future consequences of her action.[3] Compared to the minimum level h_{min}, any health improvement I is thus coded as a gain after taking into account hedonic adaptation when old, but as a loss reduction when young, that is without anticipating hedonic adaptation. Suppose for the sake of simplicity and following Grossman (1972) that the health level h can be measured on a cardinal scale. And let V be a standard prospect theory S-shaped value function defined over gains and losses in health with respect to a reference state r. A simple specification of V is given by:

[2] Based again on the Baltimore Longitudinal Study, the authors showed that people with positive perceptions of aging live up to 7.5 years longer over a 23 years period than those with less positive perceptions of aging when age, gender, socioeconomic status, loneliness, and functional health are included as covariates.

[3] Both are simplifications. First the health reference state after hedonic adaptation may be a higher than h_{min}. Second, it is likely that people are capable of partially anticipating their future adaptation, thus basing their choices on a lower reference point than h_1. As long as the gap between both reference points is large enough, it does not change the consequences of the model.