



UNIVERSITA' DEGLI STUDI DI TRENTO - DIPARTIMENTO DI ECONOMIA

CAPABILITIES, THE SELF, AND WELL-BEING: A RESEARCH IN PSYCHO-ECONOMICS

Maurizio Pugno

Discussion Paper No. 18, 2005

The Discussion Paper series provides a means for circulating preliminary research results by staff of or visitors to the Department. Its purpose is to stimulate discussion prior to the publication of papers.

Requests for copies of Discussion Papers and address changes should be sent to:

Dott. Stefano Comino
Dipartimento di Economia
Università degli Studi
Via Inama 5
38100 TRENTO ITALY

Capabilities, the self, and well-being: a research in psycho-economics

Maurizio Pugno

Economics Department

University of Trento

Abstract: Sen's capability approach to the assessment of individual well-being and welfare policies, and to the search for theoretical foundations of a paradigm of human development, is challenged by a puzzling fact. In rich countries where material wealth and liberties are at high levels, a significant fraction of the population exhibit malaise in the form of depression, anxiety, addiction, conflicts within the family and among adolescent peers. This evidence suggests that consideration should be made of an additional functioning which is neglected by the capability approach: that of the mind in humans, i.e. the self. This addition is crucial because the self also evaluates well-being, and regulates the capability of choosing. Contributions from psychology, neuroscience, and psychiatry point out that the self is a construct built up by accumulating beliefs based on new and recalled information as a largely non-conscious process. This activity is self-serving, and may inflate or deflate the self-image, thus impairing the functioning of the self in its relation with the world. This problem seems to begin when primary close relationships thwart the feeling of the non-conscious self during infancy, although material care may be guaranteed. Policy implications for the educational and mental health system are briefly drawn.

JEL classification: A12, D81, I31

PsycINFO classification: 2840, 3020, 3210, 3211

Keywords: capability approach, well-being, self, relatedness, unconscious, attachment, intrinsic motivations

Acknowledgments: A previous version of this paper was presented at the Conference "Capabilities and Happiness" (Milan, Bicocca University, 16-18 June 2005), and at the Workshop "Capabilities and Identity" (Cambridge, UK, 21-23 June 2005). I wish to thank the discussants of these presentations, and especially the economists J. Davis, M. Teschl, F. Comim, and the psychologists R. Ryan and J. La Guardia, for comments and encouragements. The usual disclaimer applies. Miur and the University of Trento is acknowledged for the financial support.

“Economic analysis based on [...] variables as food availability per head, or Gnp per head, can be very misleading in understanding starvation and hunger, and deprivation in general”.

A. Sen, *Resources, Values and Development*, Oxford:Blackwell, 1984, p.528

“Mental illness is Europe’s unseen killer. [It] is just as deadly as physical illnesses like cancer. More Europeans die from suicide each year than are killed in car accidents or as a result of murder”.

M. Kyprianou, European Commissioner for Health, Jan. 2005

0. Introduction

The Capability Approach (CA), as is well known, originates in and is developed by Sen’s numerous works (e.g. Sen 1985a, 1987, 1992, 1999a), significantly departing from the mainstream economic theory. On the empirical side, it inspires the United Nations Development Program (1990-2004); on the theoretical side, it has been especially discussed by the philosopher Nussbaum (2000, 2003).

The aim of the CA is twofold: to provide a method for the measurement and assessment of individual well-being, social arrangements, and designs of welfare policies; to propose theoretical foundations for a paradigm of human development, where human beings form the ‘ends’ of economic activity, rather than its means. The straightforward implication is that it provides the bases for urgent policy interventions.

However, although the CA has elaborated path-breaking analytical concepts for normative theory, it cannot be regarded as a positive theory. The CA has criticised traditional economic concepts like utility, rationality, maximisation, and it has been greatly effective in highlighting widespread and persistent socio-economic problems and malaise, but it has not provided a clear explanation for them which would show the failures of the mainstream economic theory.

This weakness of the CA is made particularly evident by a puzzling fact. In rich countries, where both the usual standards of opulence and the measures of functionings and capabilities point to high and rising levels, a significant and increasing part of the population suffers from a subtle malaise emerging in the form of depression, anxiety, eating disorders, conflicts within the family and among adolescent peers. It could be argued that in these cases some functionings and capabilities are impaired, but it must be recognised that these are special in character. In fact, the functionings and capabilities usually considered by the CA are clearly defined also when they are impaired, thus straightforwardly implying the need for policy intervention. For example, an intestine bacterium can impair the functioning to assimilate essential substances, and this calls for health care. In this case, the individual’s choice set is clearly constrained, and the policy implication is the removal of the constraint. However, in rich countries there is a growing number of cases where the real constraint to individual choice is not clear, while the apparent constraints may be relaxing. For example, the greater possibility for couples to

cohabit should have made the choice of marriage more informed and hence more successful. However, the evidence shows that these marriages are less successful, and the survivors from breakdowns are less happy. In these cases the constraint lies in the *ability to choose*, which is a special type of functioning because it is observable in the effects but not observable in the cause of its impairment. The lack of policy implications thus evidences the need for a theory of the failure – at least for rich countries – to achieve widespread and rising well-being and advantage.

This paper attempts to develop the CA in an unexplored direction which allows us to deal with the puzzling fact arising in the rich countries, and, more generally, to contribute to a positive theory. Consideration will be made of the special functioning pertaining *the self in human beings*. The focus will be on the ability of the self to pursue *individual well-being*. The meaning of well-being thus becomes extensive, since it includes the ability to do, and potentially to achieve specific other functionings, i.e. capabilities, and also includes well-being due to behaving in the social context.

This point of attack is a powerful one, because a well-functioning self is able to choose and effectively to exploit the given choice set; but, as far as the human self is concerned, it is also able to enlarge the choice set with imagination. As a consequence, the CA should become able both to maintain and enlarge its effectiveness in measuring and assessing well-being, and to strengthen the theoretical foundations of the paradigm of human development.

However, not only is the theory of the self extraneous to economics, thus making the research in this paper as exploratory, but a complete and accepted theory of the self is unavailable also in the other disciplines. The research strategy will be thus to take the problem arising from rich countries as the point of departure for a search for explanations in psychology, psychiatry and neuroscience. This may justify the attempt as a research in *psycho-economics*.

The paper is organised as follows: section 1 presents the problem in rich countries of the diffusion of mental malaise; section 2 highlights why this problem challenges the CA as well as the mainstream economic theory; section 3 argues for the need to introduce the concept of the self into the CA; section 4 reviews some contributions to the theory of the self in psychology and related disciplines; section 5 attempts to extend and revise the CA by considering the role of the self; section 6 concludes with some comments on the policy implications.

1. The diffusion of mental malaise in rich countries

One reason for the success of the Capability Approach (CA) in both interpreting facts and in challenging the utility theory is that wealth across nations, as usually measured by Gdp per head, is not well correlated with individuals' capacity to access and enjoy that wealth, as measured by life expectancy, physical health, education, employment, housing, etc. (Kuklys and Robeyns 2004; UNDP 1990-2004). The CA appears to capture the well-being of a country's population better than the usual income or consumption measures.

Recently, an increasing body of evidence has challenged not only the usual measures of well-being, but also the CA measures. In the group of the richest countries, where also individuals have better and growing opportunities to access wealth, a substantial and increasing part of the population suffers from a special form of malaise, which is deeply harmful in its effects, but hard to explain and to cure. This is a deep dissatisfaction with the self and the relationship with the world, and it takes the forms of depression and anxiety, eating disorders and various other forms of addiction, violence within the family and among adolescents, unhappiness in marriage.

A precise account of these forms of malaise is not possible owing to the unavailability of proper data, but the existing literature systematically points in the same worrying direction. Several studies show that depression has significantly increased through generations in the US and other major developed countries since WWII (Klerman 1988; 1993; Lavori et al. 1993; Olfson et al 2002; Rutter and Smith 1995; Lane 2000:347-8).¹ The suicide rate is a dramatic index of extreme malaise, but it also represents those who attempt or seriously consider suicide. The suicide rate increased for the US, the EU and Japan from the mid-1960s until the 1980s (Levi et al. 2003; Lane 2000:23). Lester and Yang's (1997) survey of several studies shows that the correlation between income per head and suicide rates has been *positively* significant for the US since WWII, and for a cross-section of the European countries.² The picture appears less bleak since the 1980s, in that suicide rate has declined for the US, Japan, and for many European countries. However, it has risen for Ireland and Spain (Levi et al. 2003; Chishti et al. 2003:111), and the absolute number of suicides is still at an astonishingly high level for the whole EU: around 58,000 each year (Kyprianou 2005).

Malaise in the young section of the population is especially worrying. The suicide rate among adolescents and young adults has also risen in the US, and in the four major

¹ The survey by Diener and Seligman (2004) concludes that the increase in depression may be tenfold, and rules out that this is a measurement artefact.

² Similar findings have been obtained by Jungeilges and Kirchgaessner (2002), and Huang (1996). Moreover, according to Lester and Yang, if suicide rates are regressed against the unemployment rate and income per head for European countries, only the latter variable emerges as positively significant.

European countries (Putnam 2000:262; Lane 2000:23). Mental disorders among children and adolescents appear to be rising, as evidenced by the threefold increase in their psychotropic medication, and in particular in treatment of Attention Deficit Hyperactivity Disorder between 1987 and 1996 in the US.³ The incidence of “pervasive developmental disorder”, depression, and suicides among young people are also increasing in the UK (Fombonne 1998; Fombonne et al. 2003). Homicides among adolescents are on the rise as well (Merrick et al. 2003). Putnam (2000:264) observes that the incidence of headaches, insomnia and indigestion was roughly the same in the late 1970s across age groups, but thereafter it was the more pronounced, the younger the group. A similar finding applies to anxiety and neuroticism (Twenge 2000).

Malaise within the family can be captured by various indices. The most dramatic of them is the infanticide rate, which, for the babies aged 1 year or less, rose from 51 per million-population in 1974-78 to 84 in 1995-99 in the US (Pritchard and Butler 2003). Less dramatic but still disquieting is the evidence on marriages. Despite the increasing frequency of divorce, whose incidence shows no signs of diminishing even recently in the US (Glenn and Weaver 1998), the marriages that survive appear to be less satisfactory on the basis of self-ratings (Lane 2000:24), especially if marital interaction and time spent together are considered across generations (Duane et al. 2002; Rogers and Amato 1997; Amato et al. 2003; Glenn and Weaver 1998). Increasing cohabitation, from 10% to 50% during 1972-94 in the US, which would imply that getting married is a more informed choice, appears instead to have worsened the quality of marriage, and to have destabilised it (see Kamp Dush et al. 2003, for the US; and Halli and Zimmer 1991, for Canada).

Consistent with this evidence is an ample body of empirical studies in psychology on the link between ‘materialism’ and unhappiness. Having defined ‘materialism’ as the especial valuation given to material wealth in one’s ranking of values, e.g. in the aspiration for future well-being, these studies provide much evidence that those people more inclined toward materialism also rate themselves as less happy with their lives, and exhibit more depression, more anxiety, less vitality, and an even greater propensity for mental illness (Ryan and Deci 2001; Deci and Ryan 2000a; Nickerson et al. 2003). Unfortunately, this group of people is growing in rich countries, according to sociologists (Lane 2000:ch.8). For example, poll-surveys on the values expressed by successive cohorts of college freshmen in the US show a rise from about 40% in the late 1960s to

³ The possible objection that greater income means that people can afford more medication seems contradicted by the fact that ADHD is more frequently treated among poorer groups (Olfson et al. 2002; 2003).

75% in the late 1990s of those who rated “being very well off financially” as a very important personal objective (Putnam 2000:260, 272-4).⁴

2. The challenge for the Capability Approach

The CA can be synthesised as a chain of different concepts linking goods to well-being, whereas the link is direct in the standard utility theory. Firstly, the CA includes also non-market goods, like environmental ones, in the set of available goods for choice. Secondly, goods are transformed into characteristics as ultimate desirable properties, so that the same properties can be found in different goods. Thirdly, the *functioning* set is the individual’s actual achievement in enjoying the characteristics of the chosen goods, like the body functioning of absorbing nourishing substances from food. Fourthly, the *capability* set is the individual’s potential achievement in enjoying the characteristics of available goods, like fasting for health or for religious reasons. Finally, evaluation is the ability to rank the capability sets (Sen 1985a).

The CA appears to open the black box of the standard utility function over the wider set of goods and characteristics, and considers the act of choosing as a value in itself. In this respect, it can be regarded as an advance in measurement with respect to the utility theory. By maintaining each set inclusive of distinct units before evaluation, instead of conjecturing shadow prices for the reduction of the set into a scalar (see Becker 1976), it recognises the problem of constraint as rationing of the set’s units, and also of their heterogeneity, which is substantial when the individual’s overall well-being is to be evaluated. Preference ranking provides only a partial guide for evaluation, but Sen still regards this method as useful and of practical importance. Moreover, since contemporary standards are widely shared, the self-evaluation may be proxied by the standard evaluation. By contrast, Sen is generally sceptical of the direct self-rating of well-being, because – thus he argues – the psychological phenomenon of adaptation induces individuals to be content with their current material state.⁵

The above evidence on malaise in rich countries appears at first sight to challenge only the traditional approach to the well-being of people, whereas it appears to be well accommodated by the CA. In fact, the evidence shows that material wealth is not sufficient to warrant well-being, while the CA highlights that the individuals’ functionings and capabilities to use and enjoy goods may account for the gap remaining in full

⁴ The diffusion of mental malaise is not restricted to rich countries but is widespread throughout the world (WHO 2001). In poor countries the problem *adds* to material deprivations. Obviously, in rich countries not all the other functionings and capabilities are satisfactory for all people.

⁵ Sen (1985a) also criticises the utility theory both in the version of subjective desires, and of subjective satisfaction.

explanation of people's actual well-being. Therefore, the challenge for the CA does not appear.

However, this evidence shows that some individuals' functionings and capabilities are special in character, since they pertain to the *human mind*. Deprivation is something special in the cases of mental illnesses, of non-clinical mental problems, and even of distressful consequences of persistent conditions which appear freely chosen. In these cases the constraints to functionings arise from within, they are *not observable*, they do not lie in bacteria, low education, or social and economic injustice; they rather lie in the mind. Even in many cases of mental illnesses, no bacterium, no physical injury or malformation, but functioning itself appears to be responsible. The CA thus remains challenged. In these cases, functionings deprivation cannot be ignored since its effects can be objectively observed, but the evaluation is impaired insofar as the individuals are impaired in evaluating themselves, so that policy implications become almost impossible to draw.⁶

The CA criticises the use of income per head as the target for policy, since in many instances access to wealth is hindered by material and physical deprivations. However, the evidence on mental malaise in rich countries also makes material and physical deprivation an insufficient target for policy. Income and this kind of deprivation may even be a misplaced target, if the damaging effects of the rush to materialism on individual well-being are confirmed.

Secondly, Sen's criticism of the bias in the indices of self-rated well-being, like happiness indices, applies only when adaptation to material conditions may upwardly bias self-evaluation. In the case of rich countries adaptation appears to work in the reverse direction, i.e. well-being is self-rated *less* than what material indices would have predicted. In this case, policy action clearly cannot ignore subjective indices of well-being.

3. The self and the Capability Approach

The functioning of the human mind is simply left undiscussed in the mainstream economic theory, since the assumption of substantive rationality implies a perfect

⁶ In Nussbaum's (2003) list of central human capabilities some items clearly pertain to the human mind, like "being able to use the senses, to imagine, think and reason", "to love those who love and care for us", "to show concern for other human beings", "to laugh and play". Unfortunately, many people in the world are deprived of these capabilities by misery, lack of civil and political liberty. In these cases, the constraints and the policy implications are obvious. However, the evidence in the rich countries shows that the removal of these constraints does not suffice to warrant those capabilities.

In the same article Nussbaum suggests that the list of central human capabilities should also include child care. Women are particularly burdened by this responsibility, thus highlighting a case of inequality. The responsibility is great indeed, since it requires the ability to allow children to enjoy all possible functionings of the mind!

functioning of the individuals' mind, and this perfection in elaborating information is not typical of humans. Individuals are represented with characterisations like preferences, constraints, endowments and information, but not with specific functionings.

The CA attempts to give a human characterisation to its representation of individuals in various ways. It broadens the set of goods subject to choice to include non-market goods, and it introduces functionings and capabilities of enjoying goods. In particular, since the CA considers that the mere availability of potential functionings and of goods in the choice set contributes to well-being, it makes the act of choosing a good in itself, which is typically human. Furthermore, replacing substantive rationality with the evaluation of capability sets gives individuals a human characterisation, insofar as evaluation is not restricted to the efficiency aspect but is extended to the ends of choice.

Therefore, by characterising individuals as humans the CA aims to provide theoretical foundations for a paradigm of human development, thus departing from mainstream economic theory. However, as the previous section has shown, it does not depart from this theory by neglecting the functioning of the human mind.

This paper proposes to consider both the functionings of the mind and its human characterisation in order to explain and assess individuals' ability to realise their life expectations and experience well-being. This requires study of *the self*, and of its dynamics.

Sen seems to deal with the role of the self in the CA when he discusses the role of identity (Sen 1985b, 1999b). He distinguishes between personal and social identity, and discusses the problem of the extent to which the former identifies with the latter as a source of well-being. These considerations allow Sen to justify the importance of taking a particular social group, like the community, the nation, the gender, etc., as the benchmark for evaluating individual well-being.⁷ He also recognises that the individual has some autonomy in choosing her/his own identity, possibly identifying with some or other social group. The individual cannot change his skin colour – Sen observes – but he can break away from his original community's legacy of traditions.⁸ More generally, Sen places much emphasis on the ability to commit oneself in pursuing some autonomous interest, which may be the interest of the group and not necessarily self-serving, nor primarily self-centered.⁹

⁷ These considerations also allow Sen to justify the possible primacy of routinised behaviour as conformity with the community's rules, over maximising behaviour.

⁸ Akerlof and Kranton (2000) hypothesise that individuals maximising their own utility function acquire personal identities by identifying themselves with a socially recognised ideal identity.

⁹ Davis pushes the argument even further. "I define personal identity for Sen a special capability whereby individuals exercise of a reflexive capacity to make commitments in social settings in a sustained way", so that "the entire capability-as-freedom framework depends on the one central freedom or capability of being able to sustain a personal identity" (Davis 2004:24-26).

However, as the title of the Sen's book states (*Reason before Identity*), he appeals to rationality in recognising specific personal identity, and a better ability to choose. He further maintains that this identity is specifically human, since it is able to doubt received rules and knowledge. This raises many questions, but two stand out in particular: what constrains the possibility to reason? Is reason the crucial guide to well-being for humans? These questions bring us back to the challenge raised by mental malaise in rich countries discussed in the previous sections.

4. In search of a theory of self in psychology and related disciplines

This paper attempts to integrate the CA with a theory of self. No theory of this kind yet exists in economics, a fact which has recently been recognised as unfortunate (Davis 2003; Kirman and Teschl 2005). The evidence emerging from rich countries as discussed above suggests that research should be extended to psychology and related disciplines. However, no mainstream theory of self yet exists in these other disciplines either. Hence proposed here is an integration of the CA with various contributions drawn from studies in psychology, neuroscience, and psychiatry. This may justify the attempt as a study in 'psycho-economics'.

4.1 The agentic self, and well-being

Mainstream economic theory identifies individuals through characteristics that can be observed or deduced from axioms. It considers individuals insofar as they appear in specific behaviours. Social psychology, instead, regards this perspective as partial, since it is included in wider study of the function of the *self as agency*, which, in turn, is one out of the three roots of selfhood, the others being reflexive consciousness and interpersonal relatedness (Baumeister 1998). This section discusses the first root in relation to well-being, while the next two sections will discuss the other two.

Mainstream economics is interested in individuals' behaviour within a domain, usually a market. The self is considered in psychology as a unit of specific behaviours in different domains, which taken together are relevant to the individual's well-being. The CA clearly takes this aspect into account. But aggregation of domains, usually regarded irrelevant by the economists and reduced to a measurement problem by the CA, makes the role and nature of the self evident.

In studying the self as agency, psychology considers the self to be the origin of the motivation to control, i.e. to effectively act upon the environment and the self. More precisely, the self attempts to change the environment to suit the self, and to change the

self to fit the environment (Baumeister 1998:714). This hypothesis gives individuals a typically human characterisation. In fact, it implies that individuals are led to project possibilities of change, and to draw satisfaction from a potentiality which gives them freedom to choose and to do.¹⁰ (Non-human) animals are limited to attempts to exploit the environment as simple reactions to stimuli. Therefore, when the CA includes in the evaluation of well-being the extent of the set of choice possibilities, it captures an interesting aspect of the human self, but disregards its very nature.

Deci and Ryan's (1985, 1991, 2000a) research, which follows the organismic tradition begun by Maslow (1943), is an attempt to define the nature of the self as agency, and the consequences for well-being. They maintain that "self [...] is not a set of cognitive mechanisms and structures but rather a set of motivational processes with a variety of assimilatory and regulatory functions" (Deci and Ryan 1991:238). Humans' organismic activity, according to them, is inherently oriented to developing their own interests and capacities by drawing energy from *motivations* arising from innate psychological needs. The first basic need is the need for *competence*, which encompasses people's striving to control outcomes and to experience effectance of their action. The second basic need is the need for *autonomy*, which encompasses people's striving to feel themselves as originating their action. This need better specifies the conditions for personal freedom. The third basic need is the need for *relatedness*, i.e. the need to feel authentic relationships with others.

These needs trigger motivations called 'intrinsic' because the reward is the satisfaction of the need itself. By contrast, an external reward like a monetary incentive, which implies an exchange, is called an 'extrinsic' motivation. A basic need cannot be satisfied by an external reward. On the contrary, intrinsic motivations may be thwarted if extrinsic motivations are superimposed because the need for autonomy may be not satisfied (Deci et al. 1999; Frey 1997). This crowding out effect can be avoided if the locus of causality which is originally external in the extrinsic motivations, is internalised. A complete internalisation of extrinsic motivations reinforces intrinsic motivations because it gives the individual complete control over her/his agency. The process of internalisation seems to be largely due to the need for relatedness.

The self develops through "the dialectic [...] involv[ing] the integrating tendency of the self as it meets the forces and events that arise internally from organismic conditions and externally from contextual circumstances" (Deci and Ryan 1991:244). Well-being is the outcome of a successful process of integration, which takes place if the basic needs are satisfied. Well-being is not achieved if these needs are not satisfied, i.e. if intrinsic motivations are not pursued, and the process of integration remains partial. As Deci and Ryan (2000a:252) interestingly observe, "the frustration of psychological needs

¹⁰ For a point of view of an original economist on human imagination, see Shackle (1961).

often appears to lie behind various self-defeating behaviors that then undoubtedly serve only to cause further need thwarting and to exacerbate the problem”. “For example, if people’s need for relatedness is substantially thwarted when they are young, they might compensate by attempting to gaining approval or sense of worth by pursuing image-oriented goals, such as accumulating money or material possession” (Deci and Ryan 2000:249).¹¹

Deci and Ryan’s approach to the study of the self is interesting for various reasons. First, it points to the content of goals of human development, rather than to cognitive or rational processes pursuing unspecified goals. Secondly, it selects goals as basic psychological needs, while it considers natural drives like hunger, need for security, etc., as deficit motives for restoring the conditions before the drives, so qualifying human development as development of the mind.¹² Thirdly, it shows that the satisfaction of psychological needs leads to well-being, while aspiring to substitute them with material goals brings lower well-being. The systematic evidence on this point, which is consistent with the previous evidence arising from rich countries, suggests that humans may be induced by uncontrollable mechanisms within the self to fail in maximising well-being. Fourthly, it also suggests the reason for this failure, by showing that those who particularly aspire for material well-being are tendentially those who have experienced an unsatisfied need of relatedness.

However, Deci and Ryan’s approach leaves a key point unclear. Although crucial for well-being, the process of internalisation is not explained. It is unclear both what causes internalisation, and how internalisation of the motivations of the others satisfies the need for autonomy (this recalls the discussion on Sen’s personal/social identity above).¹³ This raises the question of the internal mechanisms linking consciousness with the formation of feelings, moods, etc., which is not dealt with by this approach, although it is also important for explaining why failures in the pursuit of well-being persist. A further weakness is the hypothesis of psychological needs as innate, since the approach stands or falls depending on an unproved hypothesis.

Other studies in psychology on the agentic self deal with the failure to maximise well-being from a different but interesting perspective. In fact, it has been observed that in order to enjoy the benefits from controlling the environment and the self, individuals may self-deceive themselves that they have a great control, thus raising their self-esteem. The consequences may be beneficial, insofar as the illusion triggers a renewed motivation and

¹¹ For evidence on this point see Richins (1994); Rindfleisch et al. (1997); Kasser and Ryan (2001).

¹² “People do not have an eating drive, they have a need for sustenance. Eating behaviors may satisfy that need or drive, but eating can also satisfy a variety of other motives or need substitutes” (Deci and Ryan 2000b:328)

¹³ Both the concept of internalisation and the other wider concept of ‘integration’ are more characterised by effects than by causes.

action determinacy (Baumeister 1998:716-7). This has also been analysed in the recent economic literature (Benabou and Tirole 2002). However, the consequences may be negative (or even very negative), if deception is not met by outcomes (Baumeister 1998:720-3). This case opens the way for an explanation of the “bias” in rational choice, since it introduces the analysis of affect in decision making, and, more generally, the analysis of that part of the self which is not under control of cognition.

4.2 *Conscious and non-conscious self, and well-being*

The problem of self-deception and over-self-esteem links two roots of selfhood, the agentic function of the self to the *reflexive consciousness*, i.e. the experience in which the individual is aware of self (Baumeister 1998:685-6). In this paper the term ‘consciousness’ is taken in a rather strict sense, i.e. the ability to describe the self distinctly from the outside world in a temporal context inclusive of past and future, possibly, but not necessarily, by means of verbal language. This meaning of ‘consciousness’ is implied by the ‘methodological individualism’ adopted in mainstream economics, where rationality deals with the well defined problem of maximisation.

The problem of self-deception and over-self-esteem reveals that the self is a construct built up by the individual, with the help of others, through the accumulation of beliefs (Baumeister 1998:687). This problem also reveals that consciousness is only a part of the self, being the other part outside consciousness, and that the two parts are variable and interact. For example, as Duval and Wicklund (1972) point out, people may feel bad when outcomes reveal their self-deception, so that they are induced to escape from the aversive state of self-awareness. The typical example is alcoholism, but also other techniques can accomplish the result of deconstruction of the self by shifting attention to narrow and relatively concrete, unemotional stimuli. This process may lead to psychopathology and suicide (Baumeister 1998:686).

Recently, renewed attention has been paid by psychology to the part of the self outside consciousness, which will be called *non-consciousness*. Research is moving along new lines after Freud’s works.¹⁴ The starting point may be Wilson’s (2002:24) observation that the brain of an individual receives through the five senses more than 11,000,000 pieces of information every second, whereas he is able to process consciously about 40 pieces of information. What happens to the other 10,999,960?, Wilson wonders.

A line of inquiry in psychology, which is closely shared with neuroscientists, studies the mind processes underlying all those behaviours which automatically or repeatedly involve the body functionings with the external world. These include implicit

¹⁴ This is why the term ‘non-consciousness’ is preferred to ‘unconsciousness’, which is used by Freud with a rather restrictive meaning (Damasio 1999:ch.7; Wilson 2002:ch.1).

learning, like swimming (Ansfield and Wegner 1996; Bargh and Chartrand 1999), but also the behavioural consequences of craving from internal stimuli, like hunger. Some economists have extended this pattern to include all stimuli from the body, like seeing a chocolate bar, to explain biases in rational choice (Loewenstein 1996; Gifford 2002). However, this pattern is not typically human; in fact many animals exhibit automatic, although simpler, learning, and also some computers can learn. Craving is a visceral factor which neuroscientists suggest is common to other animals.

The most interesting result of neuroscientific studies in this line of inquiry is the recognition that “most of moment-to-moment psychological life must occur through nonconscious means” also for humans. More specifically, it is possible to identify “an automatic effect of perception on action, automatic goal pursuit, and a continual automatic evaluation of one’s experience” (Bargh and Chartrand 1999:462). This means that although human individuals are characterised by consciousness and rationality, they usually acquire information, evaluate, and choose in non-conscious ways (Zajonc 1980).

These considerations bring us to the second line of inquiry, which focuses on the non-conscious processes that contribute to build the representation of the self, and hence to build consciousness. In fact, implicit learning becomes important insofar as it contributes to forming and changing individuals’ beliefs, judgements, and preferences over their life cycle, thereby guiding choices and behaviours.

Wilson (2002) reviews and presents a variety of evidence that human individuals are far from even attempting to maximise knowledge about themselves. On the contrary, self-deception and similar practices, like self-serving memory, attention lowering, and even an endeavour to escape awareness, are found to be frequent. Conscious learning about self, including beliefs, judgements, and preferences, thus appears to be actively hindered by individuals themselves. Even the argument that conscious learning should be pursued by individuals for well-being is at variance with several experiments showing that attempts to consciously introspect may have perverse effects (Schooler et al 2003). Other evidence shows that people are happier when their conscious and non-conscious goals correspond than when they do not. Similarly, the dissociation between explicit and implicit self-esteem seems to give rise to problems in interpersonal relationships, mental and physical health (Wilson and Dunn 2004).

Neuroscience has recently turned its attention to study of the emergence of consciousness from the brain and from the body, which originally used to run automatic processes. The most interesting study is Damasio’s (1994; 1999; 2003) proposal of three levels of self. The *proto-self* non-consciously collects information from the body, and records it temporarily in neural sites of the brain so as to represent the current state of the organism. The *nuclear self* is the process of perceiving both the body through the proto-

self, and the environment, or, more precisely, the spontaneous change in the body caused by the stimulus of the environment which Damasio calls 'emotion'. This process of linking the emotion to the stimulus also has a permanent effect on other sites of the brain, since it fixes 'somatic markers' of the stimuli, more generally called 'feelings'. It produces the instantaneous dimension of consciousness. The *autobiographic self* elaborates current stimuli on the bases of memory of past feelings and the nuclear self. It connects current with retrieved feelings to form new ones. It is thus able to project possible future states, and to imagine novelties. One may refer to the terms of 'imagination' or 'intuition', up to 'creation'. No awareness is necessarily implied by this activity, which is nevertheless typically human, and included in human thought. Consciousness¹⁵ is that particular activity whereby the individual directs his attention contemporaneously to the selected and clearly perceived stimulus (or piece of information), and to the related feelings that he is able to clearly recall (preferences). Consciousness is a slow and very limited activity, since it works sequentially, and it is very selective. But it is also powerful, since, together with verbal language, it is able to produce results which can be communicated unambiguously, and which can be replicated.

Damasio's contribution is manifold. He underlines that the human mind is unceasingly (even during sleep) elaborating and developing information as non-conscious processes, and it is structurally rooted in a single and stable body. Non-conscious processes, and feelings in particular (somatic markers), are crucial for individuals' decisions, even if they follow rational evaluation and choice. Patients with traumatised prefrontal lobes, who maintain logical abilities, appear unable to form somatic markers, and then to take decisions. It has also been observed that these patients are similar to sociopaths, since both are affected by disorders in social relationships (Tranel, Bechara and Damasio 2000).

Damasio is concerned with how consciousness emerges in the brain and in the mind; however, he does not explain why the mind develops in a healthy or unhealthy way in individuals with normal brains. He only observes that the well-functioning of the nuclear self, i.e. the ability to feel stimuli and the reaction of the body (feelings), is important to explain excited or depressed moods. He also conjectures that the progressive inhibition of feelings may have occurred evolutionarily because of urgent problems in the environment.

¹⁵ Called 'extended consciousness' by Damasio.

4.3 *The self in human relationships, and well-being*

Interpersonal relatedness, which is the third root of selfhood considered by social psychology (Baumeister 1998), is important, since, in particular, it helps distinguish the cases where self-deception is favourable to well-being.

The best-known approach to the problem of the self and interpersonal relatedness in connection to well-being is the ‘attachment approach’ (Bowlby 1969; Ainsworth et al. 1978). This is based on much evidence, and is usually included in developmental psychology.

In this approach, by ‘attachment’ is meant an innate system that induces the infant to seek to establish communication with the mother or other caregiver on whom s/he is entirely dependent for satisfaction of her/his basic needs. The interaction between them mainly reflects the caregivers’ feeling and responsiveness. On this basis, the infant builds an ‘internal working model’ of relationships (or ‘attachment styles’), i.e. expectations about the caregiver’s responsiveness, and the representation of self as (un)worthy of love and care.¹⁶

Three main attachment styles can be distinguished: ‘secure’, ‘preoccupied’ and ‘avoidant’. ‘*Secure*’ attachment occurs when the caregivers are able to satisfy both the infant’s material and mental needs, especially the need for relatedness. Consequently, the infant develops security in coping with external reality, vitality, and the mindsight which enables her/him to understand people without the use of verbal language. Therefore, the infant’s internal working model built upon well-being in relatedness brings her/him to positive expectation, feeling and disposition to others. S/he can draw great well-being from relationships, while her/his vitality helps her/him overcome stressful events, thus to maintain the original style of attachment. ‘*Preoccupied*’ attachment occurs when the caregivers perform incoherent emotionality and hyperprotection, so that the infant is partially disappointed since her/his need for relatedness is unsatisfied by confused communication. The infant becomes dependent on the caregivers, short of mindsight, and anxious about new relationships. Therefore, her/his internal working model is negative about the self, but positive about others. A lack of vitality makes her/him vulnerable to stressful events, thus to maintain the original style of attachment. ‘*Avoidant*’ attachment occurs when the caregivers are unable adequately to feel and respond to the infant’s needs because they control emotionality in relationships. The infant is seriously disappointed, short of understanding, and learns to control emotions. This induces the infant to ‘solve’ her/his insecurity by building an internal working model of no expectation, reduced

¹⁶ Neuroscientists observe that an infant’s brain is especially plastic, so that the attachment pattern may be viewed as a set of information, only partially accessible, correlated with neuronal connections (Siegel 1999, 2001).

feeling and understanding, and a reduced disposition to others. S/he rapidly learns not to base well-being on relationships and is thus unable to appreciate positive experiences with others, which reinforces the original style of attachment.

Attachment styles may be maintained in adulthood by the above-mentioned stabilising mechanisms, which can be briefly reworded in economic jargon. The ‘secure’ person bases her/his prior belief on the probability of experiencing future rewarding relationships on an ample positive information set, although this is non-consciously acquired during infancy. Information updating is applied on a particular self-service basis: by selecting favourable close relationships, and by under-weighting the effects of possible negative information. The ‘preoccupied’ person maintains a prior belief about relationships which is negative but very uncertain because it is based on disappointed expectations and ambiguous information. S/he updates with a negative bias, and without the ability to collect information from favourable relationships. The ‘avoidant’ person maintains a definite negative prior belief about relationships which is constrained by the particular self-agency to avoid updating.

Therefore, self-serving information may induce some people to display an unhealthy identity. This may be called a ‘rationality failure’ insofar as a non-conscious process of management of information about the self in relation to the others and to the world violates the Bayesian updating of information, and thus does not maximise well-being (Pugno 2005).

Bartholomew and Horowitz (1991) propose a further distinction of ‘avoidant’ persons between ‘fearful’, who display negative models of both self and others, and ‘dismissive’, who display a positive model of self and a negative model of others. With this study the attachment approach allows a distinction to be drawn between two positive models of self, both of which apparently produce great self-esteem, but with opposite outcomes in well-being: the ‘secure’ person and the ‘avoidant dismissive’ person. Moreover, it also becomes clear that direct management of one’s own self-esteem to maximise well-being is not possible.

The major weakness of the attachment approach is that it is basically conceived as a system of individual’ defensive reactions to external threats, or simply stressful events, which gives rise to a search for a reliable attachment figure, who will be subsequently internalised (Mikulincer, Shaver, and Pereg 2003).¹⁷ However, this approach seems only able to explain the individual’s unhealthy functioning of the mind, this being due to the inability of her/his attachment figure to provide security, but it does not fully explain the healthy *development* of the human mind. “The ability to use an attachment figure as a secure base – Waters and Cummings (2000) argue – [...] provides the confidence

¹⁷ This reveals the origin of the attachment approach in ethology (Bowlby 1969).

necessary to explore and master ordinary environments”. However, this does not appear to be a *sufficient* condition. The approach suggests that the individual attempts to learn the mind functioning of the attachment figure, thus “incorporat[ing] the partner’s resources into the self” (Mikulincer, Shaver, and Pereg 2003:94), but again this cannot explain the development of the mind in humans with respect to other animals.

The understanding of non-conscious processes in individuals’ well-being is a especially difficult task owing to the obvious problem of direct unobservability. Indirect observation has thus been attempted by neuroscience through the study of the brain, and by social psychology through inference from experimental tests and from observation of the behaviour of, e.g., the mother-infant relationship. A different line of research is pursued by the psychiatrist Fagioli, who proposes the psychotherapeutic relationship in order to understand the meaning of non-conscious communications. In fact, his theoretical work is strengthened by a very large amount of clinical experience.

Fagioli’s (1971, 1974, 1980) theory argues that at birth the infant must cope with an environment very different from that of the foetal state, for the stimuli to which the infant is subject are new and very intense. The homeostasis of the previous state, which ensures that the body and vitality develop in balance with the environment, this being the amniotic fluid, no longer exists at birth. This change stimulates a twofold reaction in the infant: s/he makes the new environment (light, cold, etc.) non-existent in his mind (‘annullment drive’), and creates a mental image of his previous relationship with the amniotic fluid. This is really a creation, a product of the fancy, because the infant did not see any clear object before birth, but afterwards s/he does recognise her/himself in relation to others. Hence, separation from the mother forces the infant to experience an ‘annullment drive’ against the natural world, to create the self, and to intuit what is healthy for the self.

Since the infant is totally dependent on other human beings, s/he learns that the search for well-being – which confirms its capacity to relate with the environment and therefore his/her self – can be satisfied by human relatedness. In fact, an infant’s search for satisfaction of her/his material needs arises jointly with her/his search for human relatedness. If both these searches are satisfied, the self is strengthened and becomes able to relate with others and the world. But if the search for human relatedness is not satisfied, the infant is allowed to develop in the body, but s/he is forced to enact the ‘annullment drive’ against the relationship, and hence against her/his self, i.e. against the human world.¹⁸ If this experience repeats itself, the infant learns this reaction, and when adult s/he will thus react non-consciously, with the consequence that s/he will have poor relationships, and a weak, or even harmed non-conscious self.

¹⁸ The annulment drive against the relationship tends to bring the human individual to loose humanity, and becoming like a puppet, or even to treat others like puppet showmen.

Therefore, Fagioli's theory proposes that the origin of the self is at birth, i.e. it is not innate nor introjected from the mother,¹⁹ that its nature is essentially non-conscious, and that it develops through feelings and intuitions of the others' self. If primary relationships are unsatisfactory, the non-conscious self weakens since the annulment drives make it unaffektive. However, if the person is induced to recognise this dynamic, the non-conscious self can be recovered and strengthened.

5. Attempting to revise the Capability Approach

The main result of the search for a theory of self in psychology and related disciplines is that well-being can be obtained only if the non-conscious processes in the self are healthy. Naturally, a healthy non-conscious self may bring the person to well-being, although s/he is not aware of this. However, if non-conscious processes do not work well the person is induced to collect and elaborate information on self-serving basis, which affects preference, judgements, and evaluations. S/he may largely suboptimise, or even lapse into destructive behaviour and mental illness.

This is not recognised by the CA, and it may explain why the CA does not meet the challenge arising from rich countries. The mental malaise in these and other countries cannot be cured if the measurements inspired by the CA are taken as a guide. The apparent problem is that this malaise is difficult to measure, but the real problem is that there is no accepted theory of the self which embodies non-conscious processes.

Let us attempt to revise the CA in the light of the research on the theory of self as briefly reviewed in the previous section, doing so in three steps.

The first step is to distinguish between well-being as due to health and satisfaction in the body, and well-being due to health and satisfaction in the mind. This distinction evinces that the body develops by nature, and must be nourished, defended against injuries, and cured of diseases. The healthy development of the body is well-known, and medicine attempts to maintain it. The human body can be thought of as a particular machine, similar to the body of other animals, with specific needs for goods characteristics to be satisfied, and specific functionings and capabilities. The CA fits this restricted domain well. Even the rational principle of efficiency may be applied if the target is to maximise health and comfort of the body over time.

¹⁹ As well known, Freud believed that at birth an infant has instincts alone, and that s/he only acquires the self with verbal language – that is, only with acquisition of consciousness. A similar view has been put forward in neurobiology by Rolls (2000) and criticised by various colleagues in *Behavioral and Brain Sciences* (2000). Freud's position has been developed by Klein, who maintains that an infant acquires the self by introjection of the mother's image. However, both the neurobiologist Damasio and the motivational-approach psychologists Deci and Ryan contest the idea that the mind of a newborn child is a *tabula rasa*.

By contrast, the person's mind develops at a rhythm that largely depends on the person her/himself, and on her/his relation with the environment, especially with the human environment. The development of the mind of a human individual is not completely predictable, because intrinsic motivations are partially observable, and especially because it is typically human to do new things, even apparently useless things, like climbing a mountain, making a painting, having a romantic relationship, or, which is interesting for the economists, writing and providing an open source software. The CA attempts to assimilate the mind's functioning to the body's functionings and capabilities by extending the types of goods consumed. However, the quality and the amount of goods required to maximise the development of the mind is crucially more difficult to be determined. Rich countries clearly fail on this crucial account.

The problem of explaining how the human mind can be kept healthy and satisfied is straightforwardly solved in mainstream economics by Becker (1976) and Stigler and Becker (1977), who *assume* stable individual preferences concerning "fundamental aspects of life, such as health, prestige, sensual pleasure, benevolence, or envy" (Becker 1976:5). These preferences can be satisfied by different goods, but they remain the same over time.

The second step is to recognise that healthy development in the functionings of the human mind is not simply an accumulation of knowledge with which to increase personal skill, or even to appreciate music. It rather implies the functionings of the self inclusive of the non-conscious processes.

Psychology and related disciplines point out that non-conscious processes largely inform the conscious self. Perceptions of stimuli and reactions in the body are largely non-conscious also in human individuals. But typical of humans is the elaboration of their reactions, so that the non-conscious self also changes endogenously. Consciousness emerges as effortful attention to selected accessible information drawn from the entire set of perceived stimuli from outside and from memory, thus drawing from non-conscious processes. Behaviour provides further stimuli, so that the conscious and the non-conscious self interact.

The interaction between the conscious and non-conscious self may give rise to a stable pattern of behaviour which is studied by economists even if it is not restricted to economic behaviour alone (Becker 1976). The healthy interaction provides all the information relevant to forming preferences and judgements, and to supporting choices and improving behaviour, thus leaving individuals largely satisfied with their well-being. However, if the interaction is unhealthy, behaviour may become puzzling for economists, since it does not appear to achieve satisfaction with well-being.

In order to understand the unhealthy functioning of the mind, psychology and psychiatry suggest that the non-conscious process of self-serving information should be investigated. This process alters the perception of both external and internal stimuli, their recall, and hence their elaboration, with the consequence of changing the information set for behaviour. On this basis, in turn, behaviour may be induced, or even rationally chosen, in order to favour that altered process by conditioning life experiences. Over time, well-being may thus deteriorate because of an unhealthy functioning of the mind, and particularly of the non-conscious self.

Therefore, the CA should take account of the functioning of the self and the underlying non-conscious processes, not just as additional to the other functionings and capabilities but as performing a primary role. This is especially evident in the evaluation stage of a person's functionings and capabilities. Since the self is the evaluation maker, even when deciding the group of people to be subject to standard evaluation, its functioning is crucial. If non-conscious processes are not healthy, the evaluation is not a reliable guide for well-being, so that a person may freely choose the quantity and quality of goods without enjoying the expected well-being.

The third step in revising the CA is to recognise that healthy non-conscious processes require healthy relatedness with others. The importance of close personal relationships for well-being is also recognised in the economic literature (Blanchflower and Oswald 2004; Frey and Stutzer 2002; Helliwell 2003; Di Tella et al. 2003). Drawing from developmental psychology and psychiatry, it is possible to show that close personal relationships are important for well-being because they can heavily affect non-conscious processes.

There is no agreement among researchers on the origin and development of the non-conscious self, but the primary relationships during infancy appear to play a crucial role. These should be satisfactory for a healthy non-conscious self, without education being limited to material and cognitive concerns. According to the attachment approach, caregivers should provide sufficient personal care to the infant so that they represent reliable figures to be internalised by her/him. By contrast, according to Fagioli, caregivers should avoid annulment toward the infant's non-conscious self but respond to her/his search for relatedness, and allow for her/his autonomous mental development. If primary relationships are not satisfactory, the infant is induced to fear or to avoid relationships, or to annul the non-conscious self of the others and of her/his own. By losing the feeling of her/his non-conscious self, s/he biases the evaluation of self-esteem. Depressed people usually under-evaluate themselves, with detrimental effects on well-being. 'Avoidant-dismissive' people usually over-evaluate themselves, but their propensity to materialism

does not guarantee completely satisfactory well-being for them, and, above all, it undermines well-being of the others (Pugno 2005).

6. Concluding with some policy implications

The CA provides only a partial account of well-being, since it concentrates on body-like functionings and capabilities, i.e. on functionings and capabilities with observable and clear constraints. To provide a complete description of well-being, the functioning of the human mind inclusive of non-conscious processes should be considered. However, this is not a simple complement to the approach, firstly because unhealthy functioning of the mind may involve self-destructive behaviour in the body, while healthy functionings and capabilities of the body are not guarantees for a healthy mind. Secondly, the aspect of freedom in the concept of capability acquires full meaning only if the self is overtly considered. Healthy self-esteem exactly implies potential functionings, and a successful ability to choose.

Therefore, revising the CA to include the functioning of the mind implies a theory to explain the central role of the self. The evidence from rich countries suggests that, at least for a fraction of the population, the self is not able to guarantee well-being, although it enjoys substantial liberties. A theory should thus also explain this failure.

Contributions in psychology, neuroscience, and psychiatry point out that non-conscious processes of the self must be considered in order to explain well-being. The functioning of the mind may be internally constrained by something which is not observable but still very effective. In fact, the self is a subjective construct built up through the accumulation of beliefs based on external and internal information as a largely non-conscious process. Since this collection and the elaboration of information is self-serving, it may inflate or deflate the self-image, thereby impairing the functioning of the self in relation to the world. This seems to arise when primary close relationships thwart the feeling of the non-conscious self during infancy, although the material care may be guaranteed.

The organisation of social relations, of production and commerce may strengthen the bias toward apparent self-image and away from the non-conscious self which should sustain it. In fact, industrial and commercial organisations pursue the goal of maximising returns and selling goods, thus pushing society toward materialism and away from healthy relationships (Bowles 1998; Lane 1991). While only successful industrial and commercial organisations tend to survive, no comparable selection mechanism governs the ability to run healthy relationships.

The first policy implication from revision of the CA along these lines is that the educational system should be seriously re-considered, from nursery to households, from schools to television programs. It is in fact organised around the coupling of accumulation of knowledge on the cognitive and material world with consumption for comfort during free time, thus emphasising extrinsic motivations. Little attention is paid to relatedness, to intrinsic motivations generally, and to the underlying non-conscious processes. Institutions should change in this regard, and assist households.

Secondly, the health system should prevent clinical mental problems by monitoring families and communities, especially children and adolescents, for risk factors, like the death of a member, parent separation, apparent conflicts, etc. Moreover, insofar as mental malaise arises from unsatisfactory personal relationships, rather than being inbuilt in the self, healthy relationships may cure it. This consideration brings us to the final point: research on how mental malaise arises and how it can be cured. Little is known, and unobservability of its causes is not a justification for skimping on resources for this research.

References

- Ainsworth MDS, MC Blehar, E Waters and S Wall (1978) *Patterns of attachments: a psychological study of the strange situation*, Hillsdale, NJ: Erlbaum
- Akerlof GA and RE Kranton (2000) Economics and identity, *Quarterly Journal of Economics*, 115(3), 715-53
- Amato, PR.; Johnson, DR.; Booth, A (2003); Continuity and change in marital quality between 1980 and 2000, *Journal of Marriage & Family*, 65(1), 1-22
- Ansfield ME and DM Wegner (1996) The feeling of doing, in PM Gollwitzer and JA Bargh (eds) *The Psychology of Action*, New York: Guilford, pp.482-506
- Bargh JA and TL Chartrand (1999) The unbearable automaticity of being, *American Psychologist*, 54(7), 462-79
- Barholomew K and LM Horowitz (1991) Attachment styles among adults: a test of a four-category model, *Journal of Personality and Social Psychology*, 61, 226-44
- Baumeister RF (1998) The self, in Gilbert, Daniel T.; Fiske, Susan T. (eds) *Handbook of Social Psychology*, Vol. 2 (4th ed.), New York, NY, US: McGraw-Hill, pp. 680-740
- Becker GS (1976) *The Economic Approach to Human Behavior*, Chicago: Chicago University Press
- Behavioral and Brain Sciences* (2000) 23, 191-234
- Benabou and Tirole (2002) Self-confidence and personal motivation, *Quarterly Journal of Economics*, 117(3), 871-916
- Blanchflower, D.G. and A.J. Oswald (2004), 'Well-being over time in Britain and the US', *Journal of Public Economics*, 88(7-8), 1359-86
- Bowlby J (1969) *Attachment and Loss*, New York: Basic Books
- Bowles S (1998) Endogenous preferences, *Journal of Economic Literature*, 26, 75-111
- Chishti, P., D.H. Stone, P. Corcoran, E. Williamson and E. Petridou (2003), 'Suicide mortality in the European Union', *European Journal of Public Health*, 13, 108-114
- Damasio AR (1994) *Descartes' error. Emotion, Reason and the Human Brain*, New York: Grosset/Putnam
- Damasio, A.R. (1999), *The Feeling of What Happens: Body and Emotion in the Making of Consciousness*, New York: Harcourt, Brace and Jovanovich
- Damasio, A.R. (2003) *Looking for Spinoza: joy, sorrow and the feeling brain*, Heinemann: London
- Davis JB (2003) *The Theory of the Individual in Economics*, London: Routledge

- Davis, J.B. (2004) Identity and commitment, *Tinbergen Institute Discussion Paper*, 055/2
- Deci E, R Koestner, and R Ryan (1999) A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation, *Psychological Bulletin*, 125(6), 627-68
- Deci EL and RM Ryan (1985) *Intrinsic Motivation and Self-determination in Human Behavior*, New York: Plenum
- Deci EL and RM Ryan (1991) A motivational approach to self: integration in personality, in RA Dienstbier (ed.) *Perspectives on Motivation*, Lincoln (Neb): University of Nebraska Press, pp. 237-288
- Deci, E. L., and Ryan, R. M. (2000a). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11, 227-268.
- Deci, E. L., and Ryan, R. M. (2000b). The darker and brighter sides of human experience, *Psychological Inquiry*, 11, 319-338
- Diener E and MEP Seligman (2004) Beyond money, *Psychological Science in the Public Interest*, 5(1), 1-31
- Duane WC, RM Houts, TL Huston, LJ George (2002) Compatibility, Leisure, and Satisfaction in Marital Relationships, *Journal of Marriage and Family*, 64(2), 433-
- Duval S and RA Wicklund (1972) *A Theory of Objective Self-awareness*, New York: Academic Press
- Fagioli, M. (1971), *Istinto di morte e conoscenza [Instinct of Death and Knowledge]*, 11th ed. 2005, Rome: Nuove Edizioni Romane [partially translated in www.nuoveedizioniromane.it/catalogo/libri_mfl.html]
- Fagioli M (1974) *La marionetta e il burattino [The Marionette and the Puppet]*, 8th ed. 2002, Rome: Nuove Edizioni Romane
- Fagioli M (1980) *Psicoanalisi della nascita e castrazione umana [now Theory of Birth and Human Castration]*, 8th ed. 2005, Rome: Nuove Edizioni Romane
- Fombonne E (1998) Increased rates of psychosocial disorders in youth, *European Archives of Psychiatry and Clinical Neuroscience*, 248(1), 14-21.
- Fombonne E, H Simmons, H Meltzer and Goodman R (2003) Prevalence of pervasive developmental disorders in the British nationwide survey of child mental health, *International Review of Psychiatry*, 15(1-2), 158-165.
- Frey, B.S. (1997), On the Relationship between intrinsic and extrinsic work motivation, *International Journal of Industrial Organization*, 15(4), 427-39
- Frey, B.S. and A. Stutzer (2002), *Happiness and Economics: How the Economy and Institutions Affect Well-being*, Princeton, N.J.: Princeton University Press
- Gifford A Jr (2002) Emotion and self-control, *Journal of Economic Behavior & Organization*, 49, 113-30
- Glenn N and CN Weaver (1998) The changing relationship of marital status to reported happiness, *Journal of Marriage and the Family*, 50(2), 317-324
- Halli SS and Z Zimmer (1991) Common law union as a differentiating factor in the failure of marriage in Canada, 1984, *Social Indicator Research*, 24(4), 329-345
- Helliwell JF (2003) How's life? Combining individual and national variables to explain subjective well-being, *Economic Modelling*, 20(2), 331-60
- Huang W-C. (1996), 'Religion, culture, economic and sociological correlates of suicide rates', *Applied Economics Letters*, 3, 779-82
- Jungeilges J. and G. Kirchgassner (2002), 'Economic welfare, civil liberty, and suicide', *Journal of Socio-economics*, 31, 215-31
- Kamp Dush CM, CL Cohan, PR Amato (2003) The Relationship Between Cohabitation and Marital Quality and Stability: Change Across Cohorts?, *Journal of Marriage and Family*, 65(3), 539-
- Kasser T and RM Ryan (2001) Be careful what you wish for, in P Schmuck and KM Sheldon (eds) *Life Goals and Well-being*, Goettingen (D): Hogrefe und Huber, pp. 116-31
- Kirman A. and M. Teschl (2005) On the emergence of economic identity, *Revue de Philosophie Economique* (forthcoming)
- Klerman GL (1988) The current age of youthful melancholia, *British Journal of Psychiatry*, 152, 4-14.
- Kobak RR and Sceery A (1988) Attachment in late adolescence, *Child Development*, 59(1), 135-146
- Kuklys W and I Robeyns (2004) Sen's capability approach to welfare economics, *CWPE* 0415, February
- Kyprianou M (2005) Mental illness is Europe's unseen killer, European Commission, Press Release [<http://europa.eu.int/rapid/pressReleasesAction.do?reference=IP/05/27&format=HTML&aged=0&language=EN&guiLanguage=en>]
- Lane, R.E. (2000), *The Loss of Happiness in Market Democracies*, New Haven and London: Yale University Press
- Lane, RE (1991) *The Market Experience*, New York: Cambridge University Press
- Lavori PW, Warshaw M, Klerman GL and TI Mueller (1993) Secular trends in lifetime onset of MDD stratified by selected sociodemographic risk factors, *Journal of Psychiatric Research*, 27(1), 95-109

- Lester, D. and B. Yang (1997), *The Economy and Suicide: Economic Perspectives on Suicide*, Commack, N.Y.: Nova Science
- Levi, F., C. La Vecchia and B. Saraceno (2003), Global suicide rates, *European Journal of Public Health*, 13, 97-8
- Loewenstein G (1996) Out of control: visceral influences on behavior, *Organizational Behavior and Human Decision Processes*, 65(3), 272-92
- Maslow AH (1943) *Motivation and Personality*, Harper&Row [2nd ed. 1970]
- Merrick J, I Kandel and G Vardi (2003) Trends in adolescent violence, *International Journal of Adolescent Medicine and Health*, 15(3), 285-287.
- Mikulincer M, PR Shaver, and D Pereg (2003) Attachment theory and affect regulation, *Motivation and Emotion*, 27(2), 77-102
- Nickerson AB and RJ Nagle (2004) The influence of parent and peer attachments on life satisfaction in middle childhood and early adolescence, *Social Indicators Research*, 66, 35-60
- Nickerson C, N Schwartz, E Diener and D Kahneman (2003) Zeroing in on the dark side of the american dream, *Psychological Science*, 14(6), 531-6
- Nussbaum, M. (2000), *Women and Human Development*, Cambridge: Cambridge University Press.
- Nussbaum, M. (2003) Capabilities as fundamental entitlements: Sen and social justice, *Feminist Economics*, 9(2-3), 33-59
- Olfson M, MJ Gameroff, SC Marcus, and PS Jensen (2003) National Trends in the Treatment of Attention Deficit Hyperactivity Disorder, *American Journal of Psychiatry*, 160(6), 1071-1077
- Olfson M, SC Marcus, MM Weissman, PS Jensen and S Peter (2002) National trends in the use of psychotropic medications by children, *Journal of the American Academy of Child and Adolescent Psychiatry*, 41(5), 514-21
- Pritchard C. and A. Butler (2003), 'A comparative study of children and adult homicide rates in the US and the major Western countries 1974-1999', *Journal of Family Violence*, 18(6), 341-50
- Pugno M (2005) The happiness paradox: a formal explanation from psycho-economics, Economics Department, *Discussion Paper*, no.1 [<http://www-econo.economia.unitn.it/new/homeITA.html>]
- Putnam RD (2000) *Bowling Alone*, Simon&Schuster, New York
- Richins, M.L. (1994), 'Special possession and expression of material values', *Journal of Consumer Research*, 21, 522-33
- Rindfleisch, A., J.E. Burroughs and F. Denton (1997), Family structure, materialism, and compulsive consumption', *Journal of Consumer Research*, 23(4), 312-25
- Rogers, SJ and Amato PR (1997) Is marital quality declining? Evidence from two generations. *Social Forces*, 75, 1089-1100
- Rolls ET (2000) Précis of the 'Brain and Emotion', *Behavioral and Brain Sciences*, 23, 177-91
- Rutter M and Smith DJ (eds) (1995) *Psychosocial Disorders in young people: Time trends and their causes*, Wiley, Chichester
- Ryan RM and EL Deci (2001) On happiness and human potentials, *Annual Review of Psychology*, 52(Feb.), 141-166
- Schooler JW, D Ariely and G Loewenstein (2003) The pursuit and assessment of happiness can be self-defeating, in I Brocas and JD Carrillo (eds) *The Psychology of Economic Decisions*, Oxford: Oxford University Press, pp. 41-72
- Sen A (1984) *Resources, Values and Development*, Oxford:Blackwell
- Sen, A. (1985a), *Commodities and Capabilities*. Amsterdam: North Holland.
- Sen, A. (1985b), Goals, commitment, and identity, *Journal of Law, Economics and Organization*, 1(2), 341-55
- Sen, A. (1987) The Tanner lectures: the standard of living, in G Hawthorn (ed.) *The standard of Living*, Cambridge: Cambridge University Press
- Sen, A. (1992), *Inequality Reexamined*, Oxford: Clarendon Press.
- Sen, A. (1999a), *Development as Freedom*, New York: Knopf.
- Sen, A. (1999b), *Reason before Identity*, New Delhi: Oxford University Press
- Shackle GLS (1961) *Decision, Order and Time*, Cambridge: Cambridge University Press
- Siegel DJ (2001) Toward an interpersonal neurobiology of the developing mind, *Infant Mental Health Journal*, 22(1-2) 67-94
- Siegel, D.J. (1999), *The Developing Mind: toward a Neurobiology of Interpersonal Experience*, New York: Guilford
- Stigler GJ and GS Becker (1977) "De Gustibus non est disputandum", *American Economic Review*, 67(2), 76-90

- Tranel D, A Bechara and AR Damasio (2000) Decision making and the somatic marker hypothesis, in MS Gazzaniga (ed.) *New Cognitive Neurosciences*, Cambridge: Mit Press, pp. 1047-61
- Twenge JM (2000) The age of anxiety? The birth cohort change in anxiety and neuroticism, 1952-1993, *Journal of Personality and Social Psychology*, 79(6), 1007-1021
- UNDP (1990-2004), *Human Development Reports*, New York etc.: Oxford University Press.
- Waters E and EM Cummings (2000) A secure base from which to explore close relationships, *Child Development*, Feb.
- Wilson TD (2002) *Strangers to Ourselves: Discovering the Adaptive Unconscious*, Cambridge, MA, US: Belknap Press/Harvard University Press
- Wilson TD and EW Dunn (2004) Self-knowledge, *Annual Review of Psychology*, 55, 493-518
- World Health Organization (2001), *The WHO report 2001. Mental health, New understanding New Hope*
- Zajonc, R.B. (1980), 'Feeling and thinking', *American Psychologist*, Feb., 151-75

Elenco dei papers del Dipartimento di Economia

- 2000.1 *A two-sector model of the effects of wage compression on unemployment and industry distribution of employment*, by Luigi Bonatti
- 2000.2 *From Kuwait to Kosovo: What have we learned? Reflections on globalization and peace*, by Roberto Tamborini
- 2000.3 *Metodo e valutazione in economia. Dall'apriorismo a Friedman*, by Matteo Motterlini
- 2000.4 *Under tertiarisation and unemployment*. by Maurizio Pugno
- 2001.1 *Growth and Monetary Rules in a Model with Competitive Labor Markets*, by Luigi Bonatti.
- 2001.2 *Profit Versus Non-Profit Firms in the Service Sector: an Analysis of the Employment and Welfare Implications*, by Luigi Bonatti, Carlo Borzaga and Luigi Mittone.
- 2001.3 *Statistical Economic Approach to Mixed Stock-Flows Dynamic Models in Macroeconomics*, by Bernardo Maggi and Giuseppe Espa.
- 2001.4 *The monetary transmission mechanism in Italy: The credit channel and a missing ring*, by Riccardo Fiorentini and Roberto Tamborini.
- 2001.5 *Vat evasion: an experimental approach*, by Luigi Mittone
- 2001.6 *Decomposability and Modularity of Economic Interactions*, by Luigi Marengo, Corrado Pasquali and Marco Valente.
- 2001.7 *Unbalanced Growth and Women's Homework*, by Maurizio Pugno
- 2002.1 *The Underground Economy and the Underdevelopment Trap*, by Maria Rosaria Carillo and Maurizio Pugno.
- 2002.2 *Interregional Income Redistribution and Convergence in a Model with Perfect Capital Mobility and Unionized Labor Markets*, by Luigi Bonatti.
- 2002.3 *Firms' bankruptcy and turnover in a macroeconomy*, by Marco Bee, Giuseppe Espa and Roberto Tamborini.
- 2002.4 *One "monetary giant" with many "fiscal dwarfs": the efficiency of macroeconomic stabilization policies in the European Monetary Union*, by Roberto Tamborini.
- 2002.5 *The Boom that never was? Latin American Loans in London 1822-1825*, by Giorgio Fodor.

2002.6 *L'economia senza banditore di Axel Leijonhufvud: le 'forze oscure del tempo e dell'ignoranza' e la complessità del coordinamento*, by Elisabetta De Antoni.

2002.7 *Why is Trade between the European Union and the Transition Economies Vertical?*, by Hubert Gabrisch and Maria Luigia Segnana.

2003.1 *The service paradox and endogenous economic growth*, by Maurizio Pugno.

2003.2 *Mappe di probabilità di sito archeologico: un passo avanti*, di Giuseppe Espa, Roberto Benedetti, Anna De Meo e Salvatore Espa.
(*Probability maps of archaeological site location: one step beyond*, by Giuseppe Espa, Roberto Benedetti, Anna De Meo and Salvatore Espa).

2003.3 *The Long Swings in Economic Understanding*, by Axel Leijonhufvud.

2003.4 *Dinamica strutturale e occupazione nei servizi*, di Giulia Felice.

2003.5 *The Desirable Organizational Structure for Evolutionary Firms in Static Landscapes*, by Nicolás Garrido.

2003.6 *The Financial Markets and Wealth Effects on Consumption An Experimental Analysis*, by Matteo Ploner.

2003.7 *Essays on Computable Economics, Methodology and the Philosophy of Science*, by Kumaraswamy Velupillai.

2003.8 *Economics and the Complexity Vision: Chimerical Partners or Elysian Adventurers?*, by Kumaraswamy Velupillai.

2003.9 *Contratto d'area cooperativo contro il rischio sistemico di produzione in agricoltura*, di Luciano Pilati e Vasco Boatto.

2003.10 *Il contratto della docenza universitaria. Un problema multi-tasking*, di Roberto Tamborini.

2004.1 *Razionalità e motivazioni affettive: nuove idee dalla neurobiologia e psichiatria per la teoria economica?* di Maurizio Pugno.
(*Rationality and affective motivations: new ideas from neurobiology and psychiatry for economic theory?* by Maurizio Pugno.

2004.2 *The economic consequences of Mr. G. W. Bush's foreign policy. Can th US afford it?* by Roberto Tamborini

2004.3 *Fighting Poverty as a Worldwide Goal* by Rubens Ricupero

2004.4 *Commodity Prices and Debt Sustainability* by Christopher L. Gilbert and Alexandra Tabova

2004.5 *A Primer on the Tools and Concepts of Computable Economics* by K. Vela Velupillai

2004.6 *The Unreasonable Ineffectiveness of Mathematics in Economics* by Vela K. Velupillai

2004.7 *Hicksian Visions and Vignettes on (Non-Linear) Trade Cycle Theories* by Vela K. Velupillai

2004.8 *Trade, inequality and pro-poor growth: Two perspectives, one message?* By Gabriella Berloff and Maria Luigia Segnana

2004.9 *Worker involvement in entrepreneurial nonprofit organizations. Toward a new assessment of workers? Perceived satisfaction and fairness* by Carlo Borzaga and Ermanno Tortia.

2004.10 *A Social Contract Account for CSR as Extended Model of Corporate Governance (Part I): Rational Bargaining and Justification* by Lorenzo Sacconi

2004.11 *A Social Contract Account for CSR as Extended Model of Corporate Governance (Part II): Compliance, Reputation and Reciprocity* by Lorenzo Sacconi

2004.12 *A Fuzzy Logic and Default Reasoning Model of Social Norm and Equilibrium Selection in Games under Unforeseen Contingencies* by Lorenzo Sacconi and Stefano Moretti

2004.13 *The Constitution of the Not-For-Profit Organisation: Reciprocal Conformity to Morality* by Gianluca Grimalda and Lorenzo Sacconi

2005.1 *The happiness paradox: a formal explanation from psycho-economics* by Maurizio Pugno

2005.2 *Euro Bonds: in Search of Financial Spillovers* by Stefano Schiavo

2005.3 *On Maximum Likelihood Estimation of Operational Loss Distributions* by Marco Bee

2005.4 *An enclave-led model growth: the structural problem of informality persistence in Latin America* by Mario Cimoli, Annalisa Primi and Maurizio Pugno

2005.5 *A tree-based approach to forming strata in multipurpose business surveys*, Roberto Benedetti, Giuseppe Espa and Giovanni Lafratta.

2005.6 *Price Discovery in the Aluminium Market* by Isabel Figuerola-Ferretti and Christopher L. Gilbert.

2005.7 *How is Futures Trading Affected by the Move to a Computerized Trading System? Lessons from the LIFFE FTSE 100 Contract* by Christopher L. Gilbert and Herbert A. Rijken.

2005.8 *Can We Link Concessional Debt Service to Commodity Prices?* By Christopher L. Gilbert and Alexandra Tabova

2005.9 *On the feasibility and desirability of GDP-indexed concessional lending* by Alexandra Tabova.

2005.10 *Un modello finanziario di breve periodo per il settore statale italiano: l'analisi relativa al contesto pre-unione monetaria* by Bernardo Maggi e Giuseppe Espa.

2005.11 *Why does money matter? A structural analysis of monetary policy, credit and aggregate supply effects in Italy*, Giuliana Passamani and Roberto Tamborini.

2005.12 *Conformity and Reciprocity in the "Exclusion Game": an Experimental Investigation* by Lorenzo Sacconi and Marco Faillo.

2005.13 *The Foundations of Computable General Equilibrium Theory*, by K. Vela Velupillai.

2005.14 *The Impossibility of an Effective Theory of Policy in a Complex Economy*, by K. Vela Velupillai.

2005.15 *Morishima's Nonlinear Model of the Cycle: Simplifications and Generalizations*, by K. Vela Velupillai.

2005.16 *Using and Producing Ideas in Computable Endogenous Growth*, by K. Vela Velupillai.

2005.17 *From Planning to Mature: on the Determinants of Open Source Take Off* by Stefano Comino, Fabio M. Manenti and Maria Laura Parisi.

2005.18 *Capabilities, the self, and well-being: a research in psycho-economics*, by Maurizio Pugno.

PUBBLICAZIONE REGISTRATA PRESSO IL TRIBUNALE DI TRENTO