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# Which ethics will make us individually and socially happier? A cross-culture and cross-development analytical model

Fabio Zagonari

Dipartimento di Scienze Economiche, Università di Bologna  
Facoltà di Economia (sede di Rimini), Università di Bologna  
via Angherà 22, 47900 Rimini (Italy)

Phone: 0039 0541 434135 Fax: 0039 0541 434120 Email: fabio.zagonari@unibo.it

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## Abstract

This paper provides an analytical model representing four polar ethical approaches, by linking them to the main ethics suggested by the philosophical, psychological, and socio-economic literature. Moreover, it develops the analytical model in order to obtain rankings of the 4 polar ethical approaches in terms of happiness and, consequently, to provide insights on which ethical approach should be adopted by each individual, according to his characteristics (income level, in DCs or in LDCs, aspiration level): some dynamics are predicted, if the Golden and the Copper rules are applied. Finally, this paper provides insights on which ethical approach should be adopted by each society, according to its characteristics (DCs or LDCs, social distribution of aspiration levels), by predicting happiness levels in alternative countries, according to the prevailing ethics, and by comparing these predictions with the observed happiness levels, in order to provide an empirical test of the analytical model: some dynamics are predicted, with non-Protestant DCs moving to higher, and Protestant DCs towards lower, happiness levels (conditioned to the per capita income), due to the increasing and decreasing rejection of the Golden and Copper rules, respectively, and with LDCs moving to lower (conditioned to the increasing per capita income) in the short-run and higher happiness levels in the long run, by establishing and entertaining conditions that set clear incentives for moral behaviour, in order to increase and decrease the adoption of the Golden and Copper rules, respectively.

**Keywords:** Ethics, happiness, freedom, rationality, culture, religion, economic.

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## 1. Introduction

There is a huge *philosophical*, *psychological* and *economic* literature aiming at defining the constituents of happiness (for recent examples, Haybron, 2000; Haybron, 2003; Simsek, 2008) and at identifying the moral norms for individuals to achieve it (for recent examples, Degli Antoni, 2009; Konow and Earley, 2008; Martin, 2008; Binswanger, 2006; Kaun, 2005).

The first purpose of this paper is to provide a simple **analytical model** in order to summarise the main features of happiness and the main ethical approaches suggested in the literature, under very general assumptions. Some extensions are highlighted, where actions are characterized by dynamics (for example, actions at  $t+1$  depend on actions at time  $t$ ), happiness is characterized by dynamics (for example, there is stock or psychological well-being and a flow or subjective well-being; again, aspiration levels move up step by step deterministically or change stochastically), where actions of each individual are linked to actions taken by other people (think of the Copper rule, i.e. “Do (or don't do) unto others as they do (or don't do) unto you”), and where individual happiness is affected by actions taken by other people (think of the Golden rule i.e. “Do (or don't do) unto others what you would (or would not) have them do unto you”), and where people may experiment new ethical approaches (for example, the ethical approach at time  $t+1$  is the same as at time  $t$  apart from a casual variable with a specified stochastic distribution). A “by product” of this first purpose will be a ranking of ethical approaches in terms of **individual** happiness as dependent of individual characteristics.

**Next**, there is a huge *psychological*, *social* and *economic* literature aiming at motivating (for recent examples, Pflug, 2008; Lu, 2001) or at assessing (for recent examples, Welsch, 2003; Peirò, 2006; Inglehart et al., 2008; Heylighen and Bernheim, 2000; Haller and Hadler, 2006; Veenhoven, 2005; Hayo, 2007; Lelkes, 2006) the observed differences in happiness contents in different countries or cultures, on the one hand; on the other hand, at justifying (for recent examples, Robertson and Crittenden, 2003; Gossling, 2003; Jensen, 2008) or at measuring (for recent examples, Brammer et al., 2006; Franke and Nadler, 2008, Forsyth et al., 2008; Guiso et al., 2003; Cherry et al., 2003; Beekun et al., 2005; Ahmed et al. 2003; Singhapakdi et al., 2001; Karande et al., 2000; Tavakoli et al., 2003; Vasquez et al. 2001; Volkema & Fleury, 2002; Lu & Gilmour, 2004; Robertson et al. 2002; Zabid and Ho, 2003; Zabid and Ibrahim, 2008; Kracher et al., 2002; Vittel and Patwardhan, 2008; Marta et al, 2001; Blodgood et al., 2008) the observed differences in ethical approaches prevailing in different countries or cultures.

The second purpose of this paper is to apply the **analytical model** to explain the observed differences in happiness in different countries or cultures in terms of the observed different ethical approaches prevailing in different countries or cultures, under very plausible assumptions. Some extensions are highlighted, where actions of each individual are linked to actions taken by other people, and where individual happiness is affected by actions taken by other people. A “by product” of this second purpose will be a ranking of ethical approaches in terms of **social** happiness as dependent of social characteristics.

**Notice** that most bibliographic references will relate to economic issues (rather than to environment, property rights, professional duties or health issues): the economic contexts are more relevant for social interactions between individual actions and happiness, which we would like to stress here, and the ascription of alternative ethical approaches to different countries or cultures, which we would like to highlight here, are more often based on experiments eliciting behaviours in simulated economic contexts.

## 2. The analytical model

The purpose of this section is to obtain mathematical formulas representing the main ethical approaches proposed by the philosophical, psychological, and socio-economic literature.

*Freedom*, as a pre-condition for happiness, has been stressed as an ultimate value (think of idealistic theories) or as an instrumental value (think of materialistic theories) (Chekola, 2007). We will adopt the instrumental definition, by referring to freedom of (i.e. individual choice), to (i.e. access to resources for real choices), and from (i.e. absence of obstacles for individual choices), for its

measurement. In section 4 we will see that empirical research estimates freedom as the social tolerance of out-groups, or as gender equality, ... (Haller and Hadler, 2006).

**Moreover**, *happiness* has been defined as a state of mind or as a mix of state of mind and state of the world. The affective and the hedonic dimensions have been linked to the state of mind, while the cognitive dimension have been associated to the state of the world. Several combinations have been suggested. For example, the subjective well-being theory combine the affective and cognitive dimension; the hedonic view reduces happiness to subjects' balance of pleasure over displeasure; the life-satisfaction view focuses on the cognitive dimension; the affective-state theory identifies happiness with subjects' overall emotional states; the ontological well-being theory develops the subjective well-being by referring to life as a personal goal or project. We will *not* adopt a specific *happiness definition*, while we will assume that the conception of happiness is a folk notion that does not depend on cultural differences, i.e. as a state of mind, happiness is universal. **However**, Haybron (2007) recently highlighted that ethical norms are crucial in *happiness assessment*, i.e. its meaning takes cultural-specific forms. We will assume that cultural differences could drive people to follow a specific ethics. In section 4 we will see that 97% of people interviewed in 52 countries from 1981 to 2007 have specified their level of happiness, suggesting that people understand the question and can readily answer it (Inglehart et al., 2008). **In other words**, it is plausible that people from different cultures have a different concept of happiness, but they succeed in evaluating its level over a common scale (Heylighen and Bernheim, 2000).

**Finally**, *rationality*, as a pre-condition for happiness, has been identified in applying appropriate reason to choose the best possible means to attain one's ends (*instrumental rationality*); to choose (possibly non-selfish) ends and motivations that give genuine happiness, by reflecting on values and ends, by determining what is really good for oneself, by considering the long-term consequences of one's behaviour, and by considering one's sense of morality (*expressive or evaluative rationality*); or these concepts combined (*true rationality*) (Tomer, 2008). We will assume that people pursue happiness by choosing freely in all realms of life, including the choice of the ethical approach, but under individual and social constraints, by measuring as lack of freedom the situation where people do not attain happiness, because of the social impact on the feasible ethical approaches that can be *truly rationally* chosen. **Besides**, the *normative rationality* (i.e. to conform to a moral value or ideal) or the *epistemic rationality* (i.e. to hold beliefs grounded on religious experience and religious emotions) (Mitchell, 2007) will be depicted in section 3.3 as a dynamic extension of the suggested model, although the latter applies to beliefs more than behaviours (Jerolmack and Porpora, 2004), and the former could not explain religious conversions (Barro and Hwang, 2007). In section 4 we will see that empirical research estimates rationality as the access to education and information, the number of scientists and engineers per capita, ... (Welsh, 2003).

For the sake of simplicity, we will refer to four alternative *polar* ethical approaches only. The first couple of approaches (1 and 2) assume that actions are chosen to pursue goals, with goals specified by the individual (approach 2) or derived from external sources (social norms, moral principles, ...) (approach 1). This is the case of consequential behaviour (or teleological theory by Hunt and Vitell, 1986), where actions are assumed to be taken in order to maximize the goal achievements, although non-maximisation attitudes could also be represented as explained below. These two ethics emphasise happiness. The second couple of approaches (I and II) assume that actions are suggested by external sources (philosophical insights, religious principles, ...), with goals specified by the individual (approach II) or derived from external sources (society, religion, ...) (approach I). This is the case of non-consequential behaviour (or ontological theory by Hunt and Vitell, 1986). These two ethics emphasise freedom.

Let us define  $f_j$  as the expected happiness from achieving the goal  $j$ , and  $a_{ij}$  as the action  $i$  linked to the goal  $j$ , with  $a_{ij} \geq 0$  and  $f_j \geq 0$ . Next, let us name  $\lambda_k$  and  $\mu_l$  the Lagrange multipliers. **Therefore**, the following four *polar* cases will be considered:

1.  $\text{Max } (a_{ij}) \sum_j \sum_i f_j a_{ij}$  s.t.  $g_k(a_{1k}, a_{ik}, a_{nk}) \leq 0$  so  $a_{ij}^*$  and  $\lambda_k^*$  depending on  $f_j$
2.  $\text{Max } (a_{ij}, f_j) \sum_j \sum_i f_j a_{ij}$  s.t.  $g_k(a_{1k}, a_{ik}, a_{nk}) \leq 0, h_l(f_1, f_j, f_m) \leq 0$  so  $a_{ij}^{**}, f_j^{**}, \lambda_k^{**}$  and  $\mu_l^{**}$

$F(1) = \sum_k \lambda_k^*$  depending on  $f_j$  is a measure of the *lack of freedom* for (1)

$H(1) = \sum_j \sum_i f_j a_{ij}^*$  is a measure of *happiness* for (1) depending on  $f_j$

$F(2) = \sum_k \lambda_k^{**} + \sum_l \mu_l^{**}$  is a measure of the *lack of freedom* for (2)

$H(2) = \sum_j \sum_i f_j^{**} a_{ij}^{**}$  is a measure of *happiness* for (2)

I. Solve  $(a_{1k}, a_{ik}, a_{nk}) \lambda_k = 0$  for each  $k$  linked to (1) so  $a_{ij}^{\wedge}$  depending on  $f_j$

II. Solve  $(a_{1k}, a_{ik}, a_{nk}, f_l, f_j, f_m) \lambda_k = 0$  and  $\mu_l = 0$  for each  $k$  and  $l$  linked to (2) so  $a_{ij}^{\wedge\wedge}$  and  $f_j^{\wedge\wedge}$

$H(I) = \sum_j \sum_i f_j a_{ij}^{\wedge}$  is a measure of *happiness* for (I)

$H(II) = \sum_j \sum_i f_j^{\wedge\wedge} a_{ij}^{\wedge\wedge}$  is a measure of *happiness* for (II)

**Six** remarks are needed here. **First**, freedom is patently defined as freedom from restrictions, where these refer to any kinds of individual constraints: economic, social, moral, ..., while happiness is deliberately unspecified, because any definition of happiness can fit the suggested framework: psychological happiness or philosophical happiness, happiness as state of mind or as well-being/welfare, happiness as pleasure (short-run vs. long-run) or as life satisfaction, ... **Second**, although some ethical approaches are logically incompatible (for example, 1 and 2, I and II), some others are not logically inconsistent (for example, 1 or 2 and II): indeed, some ethics focus on individual, while others on social norms. **Third**, since actions  $a_{ij}$  are multiplied by happiness from goals  $f_j$ , both process and outcome happiness is depicted: the *process* happiness, by thinking that  $f_j$  is attached to the action itself, not to its consequences; the *outcome* happiness, by thinking that  $f_j$  is attached to the outcome achieved by performing actions linked to it (Konow and Earley, 2008). **Fourth**, goals  $f_j$  could be *intrinsic*, i.e. oriented towards self-acceptance, affiliation and community feeling, or *extrinsic*, i.e. oriented towards some external reward such as financial success, popularity and attractiveness (Sheldon and Lyubomirsky, 2006). **Fifth**, actions of each individual could be linked to happiness achieved by other people (think of individual altruism), i.e.  $f_j$  represents happiness achieved by others (for example, Martin, 2007). **Six**, individual happiness could be affected by happiness achieved by other people (think of social relationships), i.e.  $a_{ij}$  depicts efforts to set up social relations: the effect of social relations on well-being (for example, Degli Antoni, 2008) could be depicted by assuming that actions  $a_{ij}$  aim at establishing social contacts and that  $f_j$  measures the happiness from these social relations.

**Moreover**, Lagrange multipliers measure constraints (i.e. lack of freedom, in case 1 and 2) in terms of the missed achievement of the objective function (i.e. happiness, in case 1 and 2). Thus, we can sum up happiness and freedom measures to obtain the *overall* happiness of these ethical approaches 1 and 2 ( $V(1)$  and  $V(2)$ ), while the *overall* happiness of case I and II ( $V(I)$  and  $V(II)$ ) is given by the happiness measures, since there is no lack of freedom in these approaches, by assumption.

$$V(1) = H(1) - F(1), V(2) = H(2) - F(2), V(I) = H(I), V(II) = H(II).$$

**Three** remarks are needed here. **First**, this framework suggests that individuals perceive unhappiness and restriction as bad things, while happiness and freedom are perceived as good things. However, individuals are assumed to be sometimes *unable to freely choose* the ethics to be followed (and consequently, they will perceive a smaller overall happiness of the chosen ethics, due to an additional lack of freedom, which is not included in the suggested model, but which could be depicted in a meta-model representing the choice of the ethical approach), by stressing that this choice is often driven by, or it is constrained by, prevailing social norms (Haybron, 2007). **Second**, this framework proposes to sum up the consistent measures of happiness and freedom, in accordance to the human development theory: freedom turns out to explain 30% of changes observed on the Subjective Well-Being index (Welzel et al., 2003) and to be the most significant variable in explaining the inter-country happiness differences (Hayo, 2007). **Third**, this framework suggests that actions and/or goals are chosen before ethics. However, it could also be referred to the

opposite circumstance, to depict situations where ethical approaches are chosen once actions are taken and goals are achieved or not achieved, to obtain an *ex-post* life assessment (Haybron, 2007).

**Finally**, having clearly in mind that the four ethical approaches depicted above are polar cases, so that many other ethical approaches could be discussed, some similarities between them and some ethical approaches suggested in **the philosophical literature** are highlighted below.

- Case 1 could depict Mill's concept of hedonism: preferences are given (although they can be influenced by external factors), and the individual aims at maximising pleasure (Ng, 1999; Warke, 2000).
- Case 2 could represent Sen's notions of functioning and capability: people perceive their capabilities, and try to approach it as much as they can, i.e. they choose their goals and they act to achieve them (Giri, 2000; Giovanola, 2005; Ruta et al. 2007, Anand and van Hees, 2006; Anand et al., 2005). **Next**, this case could represent Aristotle's concept of eudemonia or flourishing: people fulfil the highest human potentialities by exercising virtues such as courage, self-restraint, generosity, munificence, magnanimity, sociability, justice, prudence and wisdom (Bragues, 2006).
- Case I could depict stoicism, with individuals accepting events which have happened. **Moreover**, it could be linked to Christian, Jewish, Muslim, Hindu, and Buddhist beliefs: the suggested rules of behaviours come from God through the voice of prophets or from the Truth achieved by individual reasoning, and freedom consists of following them, i.e. the goals are fixed by something external to the individual will or they are the same for each individual or they are not chosen differently by individuals (for recent examples, Romar, 2002; Martin Calkins, 2000; Bloodgood et al., 2008; Conroy and Emerson, 2004; Angelidis and Ibrahim, 2004; Wong, 2008; Longenecker, et al., 2004). **Finally**, this case could depict Nietzsche's fidelity to earth, with individuals being perceived within nature.
- Case II could represent Kant's postulates that practical reason discerns universal and absolute duties (the ethical imperative), i.e. individuals freely determine the goals of their actions. Moral lives lead to partial happiness, postponing full happiness as a gift in a spiritual life after death (Martin, 2008): i.e. the stress is more on ethics than on happiness. **Next**, it could be linked to Schopenhauer's four ethical stages, where individuals temporarily forget constraints from the natural forces with the arts, with pietas they perceive a common status with other people and they try to alleviate the common pain, with the ascetic attitude people reduce pleasure from natural forces, and with suicide, people go against natural forces, i.e. individuals freely determine the goals of their actions. A positive reward from moral behaviour arises from the applause of our conscience (Gossling, 2003): i.e. the stress is more on unhappiness than on ethics.

**Three** remarks are needed here. **First**, material happiness implicitly or explicitly renounced by religions is here represented by the missed happiness to meet social or individual moral constraints. **Second**, the perceived lack of freedom might be temporally mitigated (Schopenhauer) or might not be perceived at all (hypocritical people); similarly, the perception of the happiness renounced might be temporally mitigated (Stoics) or might not be perceived at all (religious people). **Third**, to some extent, Simon's satisfactory approach could be linked to Case 2 also: the individual accepts a subjectively specified gap between the expected and the achieved goal, due for example to costs of acquiring additional information or to costs of performing calculations.

Table 1 summarises the main ethical approaches suggested from the philosophical literature together with those highlighted by **the psychological and socio-economic literature**.



**Table 1. Allocations of the main ethics to the four polar cases.**

	Philosophy	Psychology	Socio-Economics
1	Mill	Relativism (Forsyth, 1980) Teologism (Hunt & Vitell, 1986)	Pre-Conventional (Kohlberg 1971) Performance/achievement orientation Individualism (Hofstede, 1980) Copper rule *
2	Aristotle, Sen	Teologism (Hunt & Vitell, 1986)	Pre-Conventional (Kohlberg 1971) Welfare relationship orientation Individualism (Hofstede, 1980) Copper rule *
I	Non-Protestant Christian, Jewish, Muslim, Buddhist, Hindu, Taoist, Confucian, Stoic, Nietzsche	Community or Divinity (Jensen, 1991) Moral intensity (Jones, 1991) Deontologism (Hunt & Vitell, 1986) Idealism (Forsyth, 1980)	Post-Conventional (Kohlberg 1971) Collectivism (Hofstede, 1980)
II	Kant, Schopenhauer, Protestant Christian	Autonomy (Jensen, 1991) Moral intensity (Jones, 1991) Deontologism (Hunt & Vitell, 1986)	Conventional (Kohlberg, 1971) Individualism (Hofstede, 1980) Golden rule *

\* The Golden and Copper rules will be depicted as extensions.

Six remarks are needed here. **First**, religions are considered here because of their impacts on the cultural characteristics of societies imbued with their moral principles, rather than for people following their commands or believing in their principles. This suggested distinguishing non-Protestant Christians from Protestant Christians: non-Protestant Christians show a lesser attitude toward cooperation, a larger willingness to break legal rules (such as to cheat on taxes, to accept bribes or to avoid a fare on public transport), and a lower level of trust in others (Guiso et al., 2003); they do not share the universalizability criterion that came out of Western rationalist philosophy (Jensen, 2006); and they show a lesser attitude to Corporate Social Responsibility in terms of equality (such as treating all employees and job applicants equally, regardless of gender, race, religion or sexuality) and rights (such as reducing human rights abuses in the world) (Brammer et al., 2007). This could be explained by remembering that Protestants rejected the Catholic sacrament of penance, and a person can obtain pardon for sins committed, provided that he performs certain acts of reparation, while for Catholics, the cost of defection in any contractual relationship remains low since such pardon can *always* be obtained with the intervention of a priest (Blum and Dudley, 2001): **however**, the equilibrium arising in Protestant societies, where individual compliance to rules is formal and social sanctions towards incompliance are crucial, could be unstable (think of immigration) if deviant behaviours expand to a significant proportion of the population and/or if social reprobation is adopted by an insignificant proportion of the population (McClearly, 2007). **Similarly**, the Golden rule is here considered as a universal moral principle implying (not a fully developed system of ethics) an impartial perspective, without abandoning sympathy for the other, to commit to social equity, and to treat other moral persons as ends, not merely as means to an end, in other words it is here used as a short form of the categorical imperative, although it is imperfectly derived from it. This suggested one should avoid linking it to religions: **indeed**, it is a principle of consistency that can be applied to any moral philosophy, not a guide to behaviour, since it does not imply strict duties to others (Burton and Goldsby, 2005); and it is implied by the love command (i.e. you will love your neighbour as yourself), but not vice-versa (Stanglin, 2005). **Second**, *relativism* in Forsyth (1980) means concern for benign outcomes, while *relativism* means scepticism with regard to inviolate moral principles (see Forsyth et al., 2008). **Third**, *pre-conventional*, *conventional* and *post-conventional* in Kohlberg (1971) refer to the following 6 stages, 2 for each of the 6 following levels. In particular, Stage 1: avoid punishment, follow rules only to avoid punishment, recognise only self. Stage 2: do what meets one's own needs and let

others do the same, individual relativism reigns, follow rules only when it is in one's immediate self-interest. Stage 3: be a good person, follow the Golden rule, maintain rules that support good behaviour, keep mutual relationships, show trust, take the point of view of an individual in relation with others. Stage 4: do what contributes to the society, group or institution as a whole, follow the law and fulfil actual duties to which you have agreed, recognise the consequences for society if everyone would do it, take the point of view of the system. Stage 5: do what produces the greatest good for the greatest number, recognise some non-relative values but usually focus on living by rules relative to the group, interest in impartiality and maintaining the social contract. Stage 6: do what is right because it is right, live by freely chosen universal, moral principles of justice and rights that would be chosen by any rational person (see Kacher et al., 2002). **Fourth**, *individualism* in Hofstede (1980) (or performance/achievement orientation) refers to the extent to which the ties between individuals are loose, so that one is expected to look after oneself and one's family; *collectivism* (or welfare relationship orientation) refers to the extent to which people view themselves as a small part of a larger group so that group achievements rather than individual achievements are stressed (see Tavakoli et al., 2003). **Fifth**, the ethic of *autonomy* in Jensen (1991) refers to people as individuals who have needs, desires and preferences, where the self is restricted by concerns with inflicting harm on other individuals, encroaching on their rights, and consideration of their needs, and where the notions of taking responsibility for oneself and virtues such as self-esteem, self-expression and independence are included; the ethic of *community* implies that the moral goal of people as members of social groups such as family, school or nation, is the fulfilment of the role-based duties to others, and the protection and positive functioning of the social group, while virtues such as self-moderation and loyalty towards social groups and their members are addressed; the ethic of *divinity* focuses on people as spiritual and religious entities, where the goal of the self is to become increasingly connected to or part of that which is pure or divine, and where injunctions and lessons are found in sacred texts and virtues such as awe, faithfulness and humility are stressed (see Jensen, 2008). **Sixth**, *moral intensity* in Jones (1991) is assumed to be the starting point of the ethical decision-making process, with the ethical perception and ethical intention that follow (see Karande et al., 2000).

### 3. Comparing ethical approaches in terms of individual happiness

The previous section provided mathematical formulas for four polar ethics, and a summary table linking them to the main ethics suggested by the philosophical, psychological, and socio-economic literature. This section aims at developing the mathematical formulas in order to obtain rankings of the four polar ethical approaches in terms of overall happiness and, consequently, to provide insights on which ethical approach should be adopted by each individual, according to his characteristics (income level, in DCs or in LDCs, aspiration level): some dynamics are predicted if happiness achieved by each person depends on happiness achieved, and actions taken, by other people.

Maslow (1970) distinguishes two types of needs: deficiency needs, such as hunger, thirst, loneliness, or the need for security, which can be satisfied by providing adequate amounts of food, drink, social contact or safety; growth needs, such as learning, mastery and self-actualisation, which can only be satisfied by continuing development. Thus, satisfaction of growth needs implies a continuous increase in the aspirations, while deficiency needs are satisfied at a given saturation level. For the sake of simplicity, let us focus on 2 goals only ( $f_1$  and  $f_2$ ). For example, think of goal 1 as deficiency needs and goal 2 as growth needs. Thus  $f_1$  measure the expected happiness from satisfying deficiency needs, and  $f_2$  the expected happiness from meeting growth needs. **Moreover**, without loss of generality, let us assume that constraints  $g$  and  $h$  are exponential:

$$a_{21} \leq \max a_{21} - a_{11}^a; \quad a_{22} \leq \max a_{22} - a_{12}^b; \quad f_2 \leq \max f_2 - f_1^c$$

with  $a$ ,  $b$ , and  $c > 0$ . **Finally**, for the sake of concreteness, let us assume that:

- People in DCs can refer to several goals simultaneously, with similar relative importance. For our example, this implies that the expected happiness from pursuing or achieving goal  $f_2$  is concave in that from goal  $f_1$  (see also Binswanger, 2006)
- People in LDCs must focus on few goals, with different relative importance. For our example, this implies that the expected happiness from pursuing or achieving goal  $f_2$  is convex in that from goal  $f_1$  (see also Kaun, 2005)

Thus, two main contexts will be discussed. A first context where pursuing goal 1 prevents one from pursuing goal 2 also (section 3.2): we will refer to it as prevailing in LDCs, by having in mind low salaries per hour coupled with individual time constraints, or reduced social mobility (due to a rigid social structure) or limited access to facilities. A second context where pursuing goal 1 does not prevent one from pursuing goal 2 (section 3.1): we will call it DCs.

### 3.1. Developed Countries

The scenario where pursuing of goal 1 reduces the potential pursuing of goal 2 at a decreasing rate can be depicted by a concave  $h$  (i.e.  $c > 1$ ). Figure 1 represents the feasible domain of  $f_2$  and  $f_1$ .

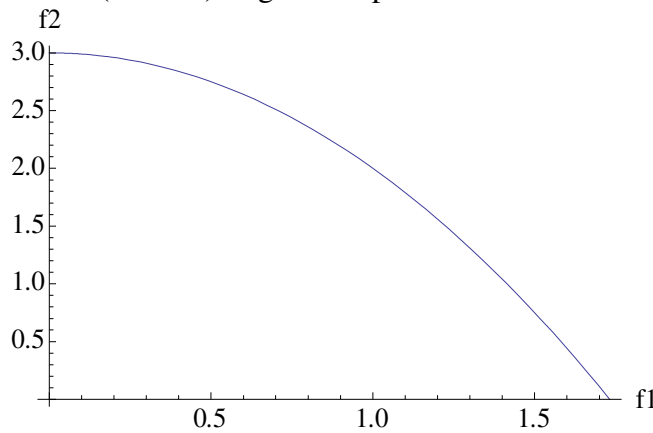


Figure 1. Maximal expected happiness from achieving or pursuing goal 2 ( $f_2$ ) as a function of the expected happiness from goal 1 ( $f_1$ ).

Thus, **analytical results** are presented below:

Case 1.

$$a_{22} = \max a_{22} - (1/b)^{(b/(b-1))} \quad a_{11} = (1/a)^{(1/(a-1))} \quad a_{12} = (1/b)^{(1/(b-1))}$$

$$a_{21} = \{ \max a_{21} - (1/a)^{(a/(a-1))} + (1/a)^{(1/(a-1))} \} - (1/a)^{(1/(a-1))}$$

$$\lambda_1 = f_1 \quad \lambda_2 = f_2$$

Case 2.

$$a_{22} = \max a_{22} - (1/b)^{(b/(b-1))} \quad a_{11} = (1/a)^{(1/(a-1))} \quad a_{12} = (1/b)^{(1/(b-1))}$$

$$\lambda_2 = f_2 = \max f_2 - \{ (1/c)[\max a_{21} - (1/a)^{(a/(a-1))} + (1/a)^{(1/(a-1))}] / [\max a_{22} - (1/b)^{(b/(b-1))} + (1/b)^{(1/(b-1))}] \}^{c/(c-1)}$$

$$\lambda_1 = f_1 = \{ (1/c)[\max a_{21} - (1/a)^{(a/(a-1))} + (1/a)^{(1/(a-1))}] / [\max a_{22} - (1/b)^{(b/(b-1))} + (1/b)^{(1/(b-1))}] \}^{1/(c-1)}$$

$$\mu = \max a_{22} - (1/b)^{(b/(b-1))} + (1/b)^{(1/(b-1))}$$

Case I.

$$a_{11} = (1/a)^{(1/(a-1))} \quad a_{21} = \max a_{21} - (1/a)^{(a/(a-1))} - \epsilon$$

$$a_{12} = (1/b)^{(1/(b-1))} \quad a_{22} = \max a_{22} - (1/b)^{(b/(b-1))} - \epsilon$$

Case II.

$$a_{11} = (1/a)^{(1/(a-1))} \quad a_{21} = \max a_{21} - (1/a)^{(a/(a-1))} - \epsilon$$

$$a_{12} = (1/b)^{(1/(b-1))} \quad a_{22} = \max a_{22} - (1/b)^{(b/(b-1))} - \epsilon$$

$$f_2 = \max f_2 - f_1^c - \epsilon$$

**Notice** that  $\lambda_1 = f_1$  and  $\lambda_2 = f_2$  obtained in Case 1 (where goals are given) with respect to Case 2 (where goals are chosen) confirm that Lagrange multipliers measure the lack of freedom to choose goals.

Let us fix  $a = b = c = 2$ ,  $\max a_{22} = \max a_{21} = 1$ , and  $\max f_2 = 3$  so that the Lagrangian becomes:

$$L = f_1 (a_{11} + a_{21}) + f_2 (a_{12} + a_{22}) - \lambda_1 [a_{21} - (1 - a_{11}^2)] - \lambda_2 [a_{22} - (1 - a_{12}^2)] - \mu [f_2 - (3 - f_1^2)]$$

Thus, **numerical results** for  $\varepsilon = 1/5$  are given by:

Case 1.  $a_{11}=1/2, a_{21}=7/4, a_{12}=1/2, a_{22}=3/4, \lambda_1=f_1, \lambda_2=f_2, V(1)=1/4 (9 f_1+5 f_2)-f_1-f_2$

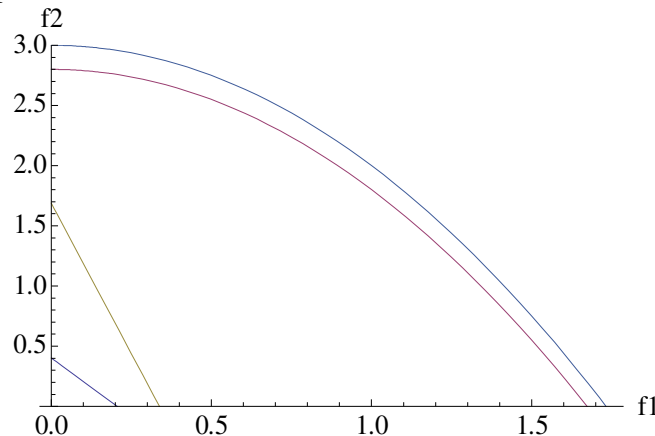
Case 2.  $a_{11}=1/2, a_{21}=7/4, a_{12}=1/2, a_{22}=3/4, \lambda_1=f_1=9/10, \lambda_2=f_2=219/100, \mu=5/4, V(2)=169/400$

Case I. With given  $a_{11} = 1/2, a_{12} = 1/2, V(I)= 1/20(41 f_1+21 f_2)$

Case II. With given  $a_{11} = 1/2, a_{12} = 1/2, V(II)= 1/100 (294+205 f_1-105 f_1^2)$

Comparing these results lead to the following general rankings:  $I > 1, II > 2$ . **In other words**, in DCs, it is better to pursue freedom than happiness: the cost of information acquisition and processing, and the risk of making wrong choices and regretting missed benefits, overcome the potential missed happiness.

**Notice** that the obtained values of  $V(1), V(2), V(I)$  and  $V(II)$  depend on the assumed value of  $\varepsilon$ , while rankings are independent of it.



**Figure 2. Values of  $f_2$  as a function of  $f_1$  arising from all possible comparisons of overall happiness in 1, 2, I and II. Scenario A is below all curves.**

Plotting curves depicting the couples of  $f_1$  and  $f_2$  providing the same overall happiness levels lead to the following specific rankings (scenarios in increasing order) (see Figure 2):

Scenario A (below all curves):  $II > 2 > I > 1$

Scenario B (from A to B, the ethics I gains, the ethics 2 loses):  $II > I > 2 > 1$

Scenario C (from B to C, the ethics 1 gains, the ethics 2 loses):  $II > I > 1 > 2$

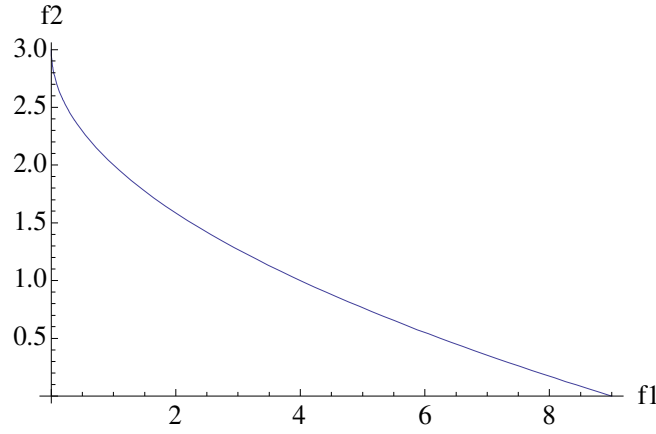
Scenario D (from C to D, the ethics I gains, the ethics II loses):  $I > II > 1 > 2$

Results obtained above can be summarised in the following **normative insights**:

- Individuals with small  $f_j$  (relatively small aspirations) in DCs should firstly adopt the ethical approach suggested by Kant, the Protestant religion or Schopenhauer (although ethics followed by others will affect the former to a greater extent than the latter), and secondly the ethical approach suggested by Aristotle or Sen
- Individuals with large  $f_j$  (relatively large aspirations) in DCs should firstly adopt the ethical approach suggested by Stoics, non-Protestant religion or Nietzsche (although one must sincerely believe in goals suggested by these ethics), and secondly the ethical approach suggested by Mill.

### **3.2. Less Developed Countries**

The scenario where pursuing of goal 1 reduces the potential pursuing of goal 2 at an increasing rate can be depicted by a convex h (i.e.  $c < 1$ ). Figure 3 represents the feasible domain of  $f_2$  and  $f_1$ .



**Figure 3. Maximal expected happiness from achieving or pursuing goal 2 (f2) as a function of the expected happiness from goal 1 (f1).**

Thus, **analytical results** are presented below.

Case 1.

$$a_{12} = (1/b)^{(1/(b-1))} \quad \begin{array}{l} a_{11} = (1/a)^{(1/(a-1))} \\ a_{21} = \max a_{21} - (1/a)^{(a/(a-1))} \\ a_{22} = (1/c) \{ [\max a_{21} - (1/a)^{(a/(a-1))} + (1/a)^{(1/(a-1))}] \max f_2^{((1-c)/c)} \} - (1/b)^{(1/(b-1))} \\ \lambda_1 = f_1 \quad \lambda_2 = f_2 \end{array}$$

Case 2.

$$a_{12} = (1/b)^{(1/(b-1))} \quad \begin{array}{l} a_{11} = (1/a)^{(1/(a-1))} \\ a_{21} = \max a_{21} - (1/a)^{(a/(a-1))} \\ a_{22} = (1/c) \{ [\max a_{21} - (1/a)^{(a/(a-1))} + (1/a)^{(1/(a-1))}] \max f_2^{((1-c)/c)} \} - (1/b)^{(1/(b-1))} \\ \lambda_1 = f_1 = \max f_2^{(1/c)} \quad \lambda_2 = f_2 = 0 \\ \mu = (1/c) \{ [\max a_{21} - (1/a)^{(a/(a-1))} + (1/a)^{(1/(a-1))}] \max f_2^{((1-c)/c)} \} \end{array}$$

Case I.

$$\begin{array}{l} a_{11} = (1/a)^{(1/(a-1))} \\ a_{12} = (1/b)^{(1/(b-1))} \end{array} \quad \begin{array}{l} a_{21} = \max a_{21} - (1/a)^{(a/(a-1))} - \epsilon \\ a_{22} = \max a_{22} - (1/b)^{(b/(b-1))} - \epsilon \end{array}$$

Case II.

$$\begin{array}{l} a_{11} = (1/a)^{(1/(a-1))} \\ a_{12} = (1/b)^{(1/(b-1))} \end{array} \quad \begin{array}{l} a_{21} = \max a_{21} - (1/a)^{(a/(a-1))} - \epsilon \\ a_{22} = \max a_{22} - (1/b)^{(b/(b-1))} - \epsilon \\ f_2 = \max f_2 - f_1^c - \epsilon \end{array}$$

**Notice** again that  $\lambda_1 = f_1$  and  $\lambda_2 = f_2$  obtained in Case 1 (where goals are given) with respect to Case 2 (where goals are chosen) confirm that Lagrange multipliers measure the lack of freedom to choose goals.

Let us fix  $a = b = 2$ ,  $c = 1/2$ ,  $\max a_{22} = \max a_{21} = 1$ , and  $\max f_2 = 3$  so that the Lagrangian becomes:

$$L = f_1 (a_{11} + a_{21}) + f_2 (a_{12} + a_{22}) - \lambda_1 [a_{21} - (1 - a_{11}^2)] - \lambda_2 [a_{22} - (1 - a_{12}^2)] - \mu [f_2 - (3 - f_1^{1/2})]$$

Thus, **numerical results** for  $\epsilon = 1/5$  are given by:

Case 1.  $a_{11} = 1/2$ ,  $a_{21} = 7/4$ ,  $a_{12} = 1/2$ ,  $a_{22} = 13$ ,  $\lambda_1 = f_1$ ,  $\lambda_2 = f_2$ ,  $V(1) = 9/4 (f_1 + 6 f_2) - f_1 - f_2$

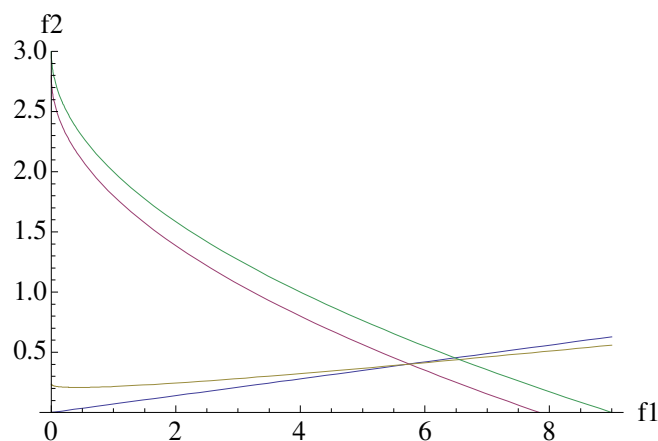
Case 2.  $a_{11} = 1/4$ ,  $a_{21} = 1/4$ ,  $a_{12} = 3/2$ ,  $a_{22} = 13$ ,  $\lambda_1 = f_1 = 9$ ,  $\lambda_2 = f_2 = 0$ ,  $\mu = 27/2$ ,  $V(2) = -9/4$

Case I. With given  $a_{11} = 1/2$ ,  $a_{12} = 1/2$ ,  $V(I) = 1/20(41 f_1 + 21 f_2)$

Case II. With given  $a_{11} = 1/2$ ,  $a_{12} = 1/2$ ,  $V(II) = 1/100 (294 - 105 \sqrt{f_1} + 205 f_1)$

Comparing these results lead to the following general rankings:  $I > 2$ ,  $II > 2$ . **In other words**, in LDCs, it is better to avoid the achievement of your capabilities or the flourish of your potentials: meeting growth needs is too expensive in terms of missing deficiency needs.

**Notice** that numerical results turn out to be consistent with the assumption of a concave and convex relationship between  $f_2$  and  $f_1$  in DCs and LDCs, respectively: indeed, in case 2, if  $f_2$  is concave in  $f_1$ , i.e. in DCs, the total value of lack of freedom amounts to  $217/50$ , while if  $f_2$  is convex in  $f_1$ , i.e. in LDCs, the total value of lack of freedom amounts to  $45/2$ .



**Figure 4. Values of  $f_2$  as a function of  $f_1$  arising from all possible comparisons of overall happiness in 1, 2, I and II. Scenario A is below all curves.**

Plotting curves depicting the couples of  $f_1$  and  $f_2$  providing the same overall happiness levels lead to the following specific rankings (scenarios in clockwise) (see Figure 4):

Scenario A (below all curves):  $II > I > 1 > 2$

Scenario B (from A to B, the ethics 1 gains, the ethics I loses):  $II > 1 > I > 2$

Scenario C (from B to C, the ethics 1 gains, the ethics II loses):  $1 > II > I > 2$

Scenario D (from C to D, the ethics I gains, the ethics II loses) (above all curves):  $1 > I > II > 2$

Scenario E (from D to E, the ethics I gains, the ethics 1 loses):  $I > 1 > II > 2$

Scenario F (from E to F, the ethics II gains, the ethics 1 loses):  $I > II > 1 > 2$

Results obtained above can be summarised in the following **normative insights**:

- the poorest individuals (with relatively small aspirations) in LDCs are advised to adopt the ethics of Kant, the Protestant religion or Schopenhauer (scenario A and B), then the approaches of the Stoics, non-Protestant religions or Nietzsche
- the richest individuals (with relatively large aspirations) in LDCs are advised to adopt the ethics of Mill (scenario C and D), but never the approaches of Aristotle or Sen
- middle income people (with middle aspirations) in LDCs are advised to adopt the ethics of the Stoics, non-Protestant religions or Nietzsche, but never the approaches of Aristotle or Sen

### 3.3. Dynamic extensions

Several extensions of the previous framework could be developed. Under the assumption of **rational** choice of the ethical approach, among the **dynamic** extensions, one could propose:

- actions at  $t+1$  depend on actions at time  $t$ : for example,  $a(t+1) = a(t) + \alpha$  with  $\alpha$  a stochastic variable so that habits are introduced (Simsek, 2008)
- there is stock or psychological well-being and a flow or subjective well-being: for example,  $S(t+1) - S(t) = V(t) + \beta$ , with  $\beta$  a stochastic variable (Konow and Earley, 2008).
- aspiration levels move deterministically up step by step (for example,  $f(t+1) = f(t) + \gamma$  with  $\gamma > 0$ ) or change stochastically due to live events (for example,  $f(t+1) = f(t) + \gamma$  with  $\gamma$  a stochastic variable) (Martin, 2008)
- actions of each individual are linked to actions taken by other people (think of the Copper rule):

$$\text{objCopper} = f_1 * (a_{11} + (1 - a_{11}^a) - \varepsilon) * \text{probII} + \zeta_1 * f_1 * (\eta_{11} a_{11} + \eta_{21} (1 - a_{11}^a) - \varepsilon) * (1 - \text{prII}) + f_2 * (a_{12} + (1 - a_{12}^b) - \varepsilon) * \text{probII} + \zeta_2 * f_2 * (\eta_{12} a_{12} + \eta_{22} (1 - a_{12}^b) - \varepsilon) * (1 - \text{probII})$$

with  $\zeta_j < 1$  depicting the missed happiness due to the non-Pareto optimal outcomes (Non cooperate, Non-cooperate in the Prisoner Dilemma), while  $\eta_{ij} < 1$  depicting the small efforts in actions  $a_{ij}$ ; in other words, happiness from a specific ethical approach could depend on the number of people choosing, or the probability of meeting people choosing the same approach (probII), which in turn can be assessed once a statistical distribution of goals over the population is assumed: this extension

leads us to predict a reduction of happiness from ethics 1 and 2 (see also Blum and Dudley, 2001), while probII, in the numerical examples developed above, are estimated to be 0.0119 (Scenario A: II>2>I>1), 0.0704 (Scenario B: II>I>2>1) and 0.8192 (Scenario C: II>I>1>2) for DCs, and 0.1734 (Scenario A: II>I>1>2) and 0.0536 (Scenario B: II>1>I>2) for LDCs

- individual happiness is affected by actions taken by other people (think of the Golden rule):

$$\text{objGolden} = f_1 * (a_{11} + (1 - a_{11}^a) - \epsilon) * \text{probII} + \zeta_1 * f_1 * (a_{11} + (1 - a_{11}^a) - \epsilon) * (1 - \text{prII}) + f_2 * (a_{12} + (1 - a_{12}^b) - \epsilon) * \text{probII} + \zeta_2 * f_2 * (a_{12} + (1 - a_{12}^b) - \epsilon) * (1 - \text{probII})$$

with  $\zeta_j < 1$  depicting the missed happiness due to the non-Pareto optimal outcomes (Cooperate, Non-cooperate in the Prisoner Dilemma): this extension leads us to predict a reduction of happiness from ethics II (see again Blum and Dudley, 2001).

Reasoning on the Golden and Copper rule extensions leads us to predict the following **individual dynamics**: a reduction of reciprocity (smaller probII) at time t is likely to reduce people willing to apply the Golden rule and to increase people willing to apply the Copper rule at time t+1: in other words, happiness from ethics II, 1 and 2 becomes smaller with respect to the I ethical approach. **Notice** that the *Folk Theorem* would suggest that the ethics II prevails, if people interact several times: however, this is more likely to occur in collectivist societies or LDCs, where the ethical approach I should be followed, than in individualistic societies or DCs, where the ethical approach II should be chosen.

Under the assumption of **non-rational** choice of the ethical approach, one could suggest an evolutionary extension, where people experiment new ethical approaches: for example, the ethical approach chosen at time t+1 is the same as at time t apart from a casual variable with a specified stochastic distribution so that  $A(t+1) = A(t) + \delta$ , with  $\delta$  showing a binomial distribution. Think of *normative and epistemic rationality* in embracing religious behaviours and beliefs.

## 4. Comparing ethical approaches in terms of social happiness

The previous section provided insights on which ethical approach should be adopted by each individual, according to his characteristics (income level, in DCs or in LDCs, aspiration level), by predicting some dynamics if happiness achieved by each person depends on happiness achieved, and actions taken, by other people. This section aims at obtaining insights on which ethical approach should be adopted by each society, according to its characteristics (DCs or LDCs, social distribution of aspiration levels), at predicting overall happiness levels in alternative countries, according to the prevailing ethics, and at comparing these predictions with observed happiness levels, in order to provide an empirical test of the analytical model: some dynamics is predicted, if happiness achieved by each person depends on happiness achieved, and actions taken, by other people.

### 4.1. Ethics suggested by the model

Let us assume that:

- the distribution is uniform over  $f_1$  and  $f_2$  for people in DCs
- the distribution is mainly condensed on large  $f_1$  and small  $f_2$  for people in LDCs

These assumptions, together with results obtained in section 3, lead to the following suggestions:

- DCs should firstly choose the II over the I ethical approach, and secondly the 1 over the 2 ethical approach
- LDCs should firstly choose the I over the II ethical approach, and secondly the 1 over the 2 ethical approach

**Notice** that referring to a fraction of the population living in a country and considering impacts of one's chosen ethics on others allows us to obtain insights on the prevailing Nash equilibrium.

## 4.2. Happiness predicted by the model

Table 2 summarises some recent studies identifying the main ethical approaches characterising some countries, where studies referring to years before 1996 are excluded in order to make a consistent comparison with surveys estimating happiness levels here referred to (see O'Fallon and Butterfield (2005) for further studies estimating the impacts of philosophy and religious values on ethical intent and behaviour).

**Notice** that the choice of ethics is here assumed to be based on moral reasoning. However, Haidt (2001) shows that moral emotions could map onto the three ethics of Autonomy, Community and Divinity. **Moreover**, countries are here segmented according to statistical or econometric comparisons between a small number of countries with respect to cultural features. Indeed, Franke and Nadler (2008) show that cultural dimensions in Hofstede (1980) can explain only 31% of the observed variance of ethical attitudes in the 44 countries sampled, and 50% in the 41 countries sample, where Brazil, Philippines and Japan are excluded as outlying cases; similarly, Forsyth et al. (2008) allocate 29 countries in terms of cultural dimensions by Forsyth (1980), relativism and idealism, which cover only two out of four polar ethics considered here. **Finally**, the choice of ethics is here assumed to be independent from developmental, although dependent on cultural, differences between countries. However, Barro and McCleary (2003) show that lower income people are often more devout.

**Table 2. Allocations of some countries to the four polar cases according to statistical or econometric studies.**

	1	2	I
I		X	
2	X		X
I	Russia > USA (Beekun et al., 2005; Ahmed et al, 2003) South Africa > Germany (Pflug, 2008) Croatia > USA (Tavakoli et al., 2003) Taiwan > USA (Lu, 2001; Cherry et al., 2003) Spain > Mexico (Husted et al., 1996) Egypt > USA (Marta et al, 2003) Ukraine > USA (Kennedy & Lawton, 1996) Taiwan > Australia > USA (Allmon et al., 1997)	X	China > EU (Vittel and Patwardhan, 2008) El Salvador > USA = Canada (Chiasson et al., 1996) Malaysia > USA (Karande et al., 2000) India > USA (Kracher et al, 2002) India = China = Malaysia (Zabid & Ho, 2003; Zabid & Ibrahim, 2008) Philippines > USA (Vasquez et al., 2001) Chile > Australia (Robertson et al., 2002) Mexico > Spain (Husted et al., 1996) Malaysia > New Zealand (Goodwin & Goodwin, 1999) China > Australia (Tsui & Windsor, 2001)
II	USA = Canada > El Salvador (Chiasson et al., 1996) USA > Russia (Beekun et al., 2005; Ahmed et al, 2003) USA > Philippines (Vasquez et al., 2001)	Norway > USA (Falkenberg, 1998) Germany > South Africa (Pflug, 2008) Australia > USA	X



USA > Egypt (Marta et al, 2003) USA > Taiwan (Lu, 2001; Cherry et al., 2003) USA > Ukraina (Kennedy & Lawton, 1996) USA > Norway (Falkenberg, 1998) USA > Brazil (Volkema and Fleury, 2002) USA > Malaysia (Karande et al., 2000) USA > Australia (Singhapakdi et al., 2001) USA > India (Kracher et al, 2002) USA > Croatia (Tavakoli et al., 2003) USA > Ukraine (Kennedy & Lawton, 1996) USA > China (Whitcomb et al., 1998; Lu & Gilmour, 2004; Ahmed et al., 2003)	(Singhapakdi et al., 2001) Australia > Chile (Robertson et al., 2002) New Zealand > USA (Okleshen & Hoyt, 1996) New Zealand > Malaysia (Goodwin & Goodwin, 1999) Australia > China (Tsui & Windsor, 2001) Austria > USA (Davis et al., 1998)	
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X means impossible case. Comparisons refer to business ethics only.

Combining the suggestions achieved in section 4.1 with the ethical approaches actually followed by these countries leads to the conclusion that:

1. Countries that follow the prescribed first ethics are likely to achieve happiness levels above the average, once the per capita income is taken into account: examples are given by USA, Norway, Germany, Austria, New Zealand and Australia in DCs, China, India, Philippines, El Salvador, Chile, Mexico and Malaysia in LDCs
2. Countries that do not follow the prescribed first ethics are likely to achieve happiness levels below the average, once the per capita income is taken into account: examples are given by Ukraine, Russia, Taiwan, Egypt, Croatia and South Africa in LDCs, Spain in DCs
3. Countries that follow the prescribed first ethics but not the second one are likely to achieve smaller happiness levels than those following both the first and second prescribed ethics, once the per capita income is taken into account: examples are given by USA vs. Norway
4. Non-Protestant DCs are likely to achieve happiness levels below the average, once the per capita income is taken into account: think of Japan, Israel, Italy
5. Non-Protestant LDCs are likely to achieve happiness levels above the average, once the per capita income is taken into account: think of Bangladesh, Vietnam, Brazil, Pakistan

### ***4.3. An empirical test of the model***

Comparing predictions presented in section 4.2 with observed happiness data from the literature allows us to test the model. Figure 5 shows the interpolating function of the observed happiness levels in different countries as dependent on the per capita GDP (Inglehart et al., 2008): one can read it for each level of per capita GDP to obtain happiness achieved conditional on per capita income, and one can consider the happiness level above the interpolating function as being above the average level conditional to the per capita income.

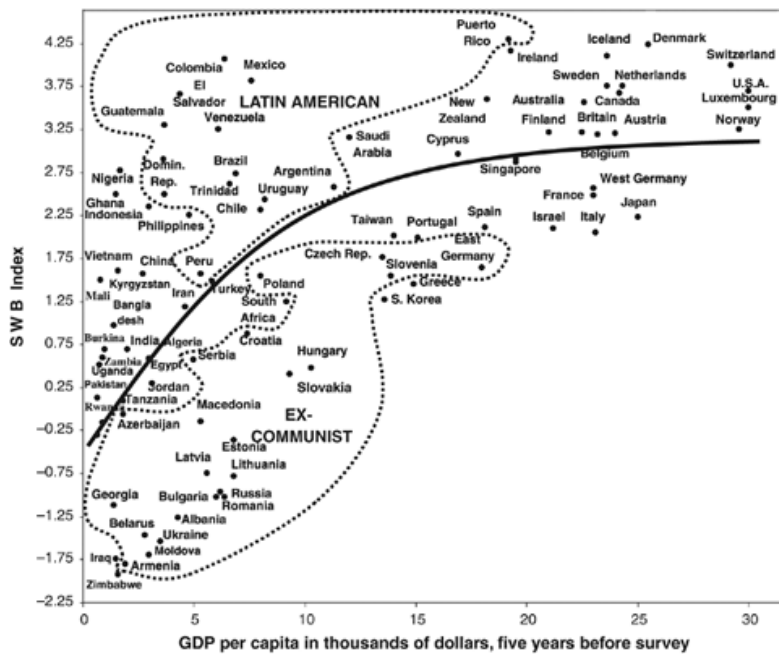


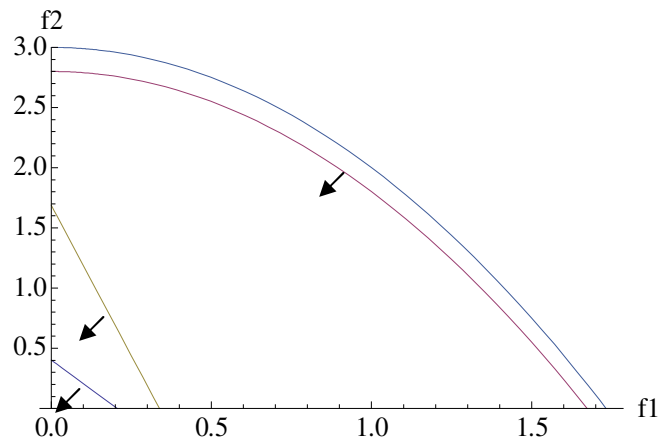
Figure 5. Inglehart et al. (2008) subjective well-being vs. per capita gross domestic product. Well-being index is based on reported life satisfaction and happiness, using mean results from all available surveys conducted 1995–2007 (cubic curve plotted;  $r=0.62$ ). PPP=purchasing power parity estimates.

Thus, all 5 predictions achieved in section 4.2 are confirmed, apart from West Germany, where happiness levels arise from averaging responses by people living in Western and Eastern parts after unification.

Notice that non-Protestant DCs are likely to be trapped in happiness levels below the average, with people being driven to apply the ethics I due to the small proportion of people applying the ethics II: **indeed**, the ethical approach I is individually (although non-socially) *truly rational* in these countries, because people would choose the ethical approach II, without constraints due to behaviours by others, but they are forced to choose the ethical approach I, with a perceived lack of freedom and consequently a lower overall happiness. **Moreover**, Saudi Arabia and Switzerland being significantly above the interpolating curve confirms the crucial impact of freedom of *choice* on happiness rather than *political* freedom (see also Verme, 2009): **indeed**, although they represent a Muslim LDC and a Protestant DC, they are both characterised by a large immigration of people doing low-skill jobs, where Saudi Arabia shows the lowest political and civil rights in the world (see Farid and Lazarus, 2008). **Finally**, assuming *normative or epistemic rationality* in embracing religious behaviours and beliefs might lead to similar predictions about overall happiness in non-Protestant DCs and LDCs: **indeed**, the former will experience an unexpected inconsistency of the chosen ethics with a modern individualistic society, while the latter will observe the expected coherence of the chosen ethics with a community-based society.

#### 4.4. Dynamic insights

Applying the individual dynamic predictions obtained in section 3.3 to Figure 2 leads to Figure 6, where  $f_j$  are still assumed to be uniformly distributed, while curves depicting the  $f_j$  values making ethics II as appealing as other ethical approaches move downward, to represent the decreasing adoption of the Golden rule and the increasing adoption of the Copper rule: indeed, Crittenden et al. (2009) show statistically an overall dynamics towards a cheating culture in the 36 countries analysed, although the tolerance towards cheating behaviour, the belief in cheating and the actual cheating behaviour turn out to depend on the moral philosophy assumed to be prevailing in each country.



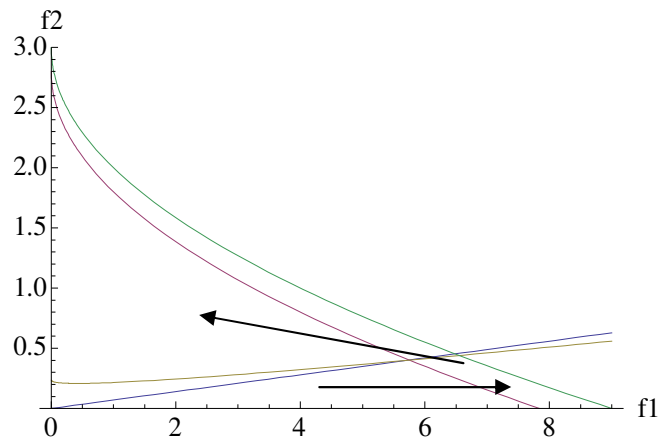
**Figure 6. Dynamics in Non-Protestant DCs: a movement of relative overall happiness from alternative ethics, for a given distribution of ambition levels, so that II become less and less popular.**

Under the assumption that the individual change of ethics is slower than the change in social norms, due for example to immigration, the analysis of Figure 6 leads us to predict the following **social dynamics**:

- Protestant DCs are likely to move to lower happiness levels: in a more cheating society, where everybody cheats because everyone else does, so that the ethics I should be chosen, people still adopting the ethical approach II will be frustrated (here measured as the smaller overall happiness due to the choice of the wrong ethics). This prediction seems to be supported empirically (for example, Inglehart et al. (2008) show a decrease in life satisfaction scores from the earliest to the latest survey in USA, Canada, Australia, Switzerland, Sweden, Finland) and theoretically (see Ott (2007) for a discussion on decreasing happiness in the USA)
- Non-Protestant DCs are likely to move to higher happiness levels: in a more cheating society, where everybody cheats because everyone else does, so that the ethics I should be chosen, people adopting the ethical approach I will be gratified (here measured as the larger overall happiness due to the choice of the right ethics). This prediction seems to be empirically supported (for example, Inglehart et al. (2008) show an increase in life satisfaction scores from the earliest to the latest survey in Italy, Austria, France, Northern Ireland, Japan).

**Notice** that Protestant DCs where immigration is smaller, so that the interaction between people from different cultures is smaller, are likely to show more stable happiness levels: for example, Inglehart et al. (2008) show a constant life satisfaction score from the earliest to the latest survey in Norway, Netherlands, Denmark.

**Next**, applying the individual dynamic predictions obtained in section 3.3 to Figure 4 leads to Figure 7, where curves depicting the  $f_j$  values making ethics as appealing as other ethical approaches are assumed to be the same, while people move towards higher ambitions in terms of both deficiency needs and growth needs, due to an increase in per capita income.



**Figure 7. Dynamics in LDCs: a movement of people's ambition levels, for given relative overall happiness from alternative ethics, so that the ethics 1 becomes more and more popular.**

Under the assumption that the individual change of ethics is slower than the change in per capita income due to economic growth, the analysis of Figure 7 leads us to predict the following **social dynamics**:

- LDCs with an increase in per capita income are likely to move to lower happiness levels in *the short run*: in a more market oriented society, where the ethics 1 or 2 should be chosen, people still adopting the ethical approach I will be frustrated (here measured as the smaller overall happiness due to the choice of the wrong ethics). This prediction seems to be empirically supported (for example, Inglehart et al. (2008) show a decrease in life satisfaction scores from the earliest to the latest survey in India and China).

**Notice** that LDCs could aspire to higher happiness levels in *the long run*: an increase of the proportion of people aiming at growth needs, due to an increase in per capita income, implies a larger proportion of people *rationally* choosing the ethics 1, i.e. a larger proportion of people being sensitive to the formal institutional setting with its likelihood that immoral behaviour is sanctioned, and to the informal social condition with its structures of rules and sanctions (Gossling, 2003). **In other words**, in the process of transition from traditional community-based cultures to modern individualistic societies, LDCs could move towards the Autonomy (Jensen, 2008) or the Conventional (Kohlberg, 1971) ethics provided suitable incentives and punishments are set up, while LDCs will combine Relativism (Foresyth, 1980) and Pre-Conventional (Kohlberg, 1971) ethics with free-market capitalism otherwise: that is, unlike Russia, Croatia, South Africa and Taiwan, the ethical approaches 1,II and 2,II can be favoured in these countries, by avoiding transit through 1,I, to reduce the costs of modernisation.

## 5. Discussion

The main **achievements** of this paper are as follows:

- An *original* analytical model is provided, where overall happiness (including rationality and freedom) is assumed to be measured over a common scale across cultures, but to depend on ethical approaches (including religion and social norms), which depend on cultural differences at country level: as in Robertson and Crittenden (2003), linkages between the macro-level dominant moral philosophy in use in different cultural/economic systems and the micro-level individual behaviour outcomes are stressed
- An *empirical test* of the analytical model is offered (unlike Robertson and Crittenden, 2003), being aware that the complexity and variety of ethics would make it impossible to reach any conclusion on purely theoretical grounds, by introducing two reasonable additional assumptions: deficiency needs more important than growth needs for people in LDCs with respect to people in DCs; and aspiration levels are uniformly distributed between deficiency and growth needs for people in DCs, while condensed on deficiency needs for people in LDCs

- Explanations of *results by some empirical studies* are provided: for example, the observed positive impact of freedom and rationality on happiness for rich, but not for poor countries is consistent with LDCs choosing the best ethics, while non-Protestant DCs do not, and people in LDCs being forced to deficiency needs, while DCs are not (Welsh, 2003); **moreover**, the estimated positive impact of religious involvement on life satisfaction confirms that religious groups show different attitudes towards life difficulties (such as the turmoil of economic transition) (Lelkes, 2007); **finally**, it is shown that different levels of (individual) freedom imply different degrees of happiness, by excluding that causation works the other way (Welsh, 2003)
- Confirmations of *insights by some empirical studies* are offered: for example, we show that communist ideology, here represented as the ethics I, has played a role comparable to that of religion in Eastern European countries, making people willing to sacrifice their lives for the cause of building a better society (Inglehart et al., 2008); **moreover**, when people lack the resources to fulfil their basic needs, the utility of freedom is relatively low, while people living in more affluent societies give higher priority to free choice and self-expression (Inglehart et al., 2008); **finally**, we show that the quality of social relations in the Latin American countries, here represented as the ethics I, could explain these being among the happiest in the world, making people able to endure suffering (Haller and Hadler, 2006).
- Confirmations of *insights by some theoretical studies* are offered: for example, we show that philosophical ethics are indispensable for explaining empirical results concerning human psychology, since human evaluations are involved (Haybron, 2007); **moreover**, we show that the origins of one's desires as well as the critical reflection of, and the possible alteration of, desires are not necessary for happiness (Chekola, 2007); **finally**, by combining empirical research with an analytical model where a broad concept of happiness is applied, we produce suggestions on the manner of living which makes us happier, upon contingencies related to individual and social characteristics (Haybron, 2000).
- Explanations of *missed results by some empirical studies* are provided: for example, the estimated lack of direct link between happiness and freedom highlights that individual freedom more than political freedom (measured as civil rights and liberties) really matters for happiness (Welsh, 2003); **moreover**, the lack of support for Chinese being more relativistic than EU people is likely to be due to the comparison of China with Spain and UK combined, where we stressed that catholic Spain should not be grouped with the non-catholic UK to represent EU people (Vittel and Patwardhan, 2008); **finally**, the estimated lack of influence of institutionalised religiosity or ideological freedom on life satisfaction stresses that individual freedom more than ideological freedom (measured as the social role of churches) really matters for happiness (Lelkes, 2007)

## 6. Conclusion

We feel that the analytical approach adopted here turned out to be quite successful in interpreting the cultural effects on happiness, by stressing individual characteristics (income and aspiration levels) as well as social characteristics (distribution of aspiration levels). However, some *cautions* for results obtained by this paper must be highlighted:

- Responses to the same question ("what is your happiness level, between 0 to 4?") might partially depend on cultural differences: for example, people in the USA would not like to admit they feel unhappy, since success and failure are typically seen as the individual's own responsibility, while people in France like to blame institutions such as unions, the government or multinational firms, and would find it acceptable to complain about their situation (Heylighen and Bernheim, 2000). **However**, this intuition should be extended to all non-Protestant countries.
- Explaining the average happiness level as dependent on the prevailing ethical approach in a country at a given per capita income means assuming that individual differences (such as education, health, occupation or wealth) within a country either combine similarly in different countries (for example, because people compare their situation with their compatriots) or have relatively small importance for individuals (for example, because people influence their situations according to their personal traits and preferences). **Indeed**, Heylighen and Bernheim (2000) show that correlations

between happiness and individual characteristics are subtler than those between happiness and country characteristics, **although** Haller and Hadler (2006) show that individual and social characteristics have a significant impact on happiness, where ethics is not modelled.

- Several societal moderators (for example, language, historical traditions) have been suggested in the literature. **However**, ethics is likely to summarise them well.

- Several social conditions (equality, justice, solidarity, peacefulness, safety and political stability) have been suggested in the literature. **However**, ethics is likely to represent well a common attitude to adapt or cope with them.

The main *developments* for the framework suggested in this paper are as follows:

- It may be worth to explaining theoretically the individual choice, and to measure empirically the social distributions, of aspiration levels

- It may be worth to developing theoretically the deterministic and stochastic models, proposed in this paper as extensions

- It may be worth to testing empirically the direct impact on happiness of cultural differences between countries, by referring to theoretical results obtained in this paper, i.e. to implement a statistical or econometric analysis that fills the gap in the literature, mainly due to the disagreement in segmenting countries according to ethics (for example, quite different allocations were recently obtained by Crittenden et al. (2009), Forsyth et al. (2008) and Franke and Nadler (2008)).

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