



The economics of eudaimonia

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Abstract

Research in the Economics of Happiness has recently paid increasing attention to ‘eudaimonia’, which is a conception of happiness originated in ancient Greek philosophy, and in particular in Aristotle’s philosophy. Since ‘eudaimonia’ is a way of life rather than a circumscribed goal, its understanding requires a dynamic analytical structure. To this end, the paper provides two main contributions. First, in order to facilitate reading by the economists of Aristotle’s work, this is translated in modern economic terms, i.e. eudaimonia is described as an individual activity that transforms inputs into outputs. Second, this description is reformulated, with the help of studies in psychology and anthropology, in a modern ‘economic approach to eudaimonia’, which focuses on human development, i.e. on the development of the skills which are typically human. A number of implications are then discussed: about how some weaknesses of Aristotle’s conception of eudaimonia can be amended (e.g. the objective/subjective reconciliation); about the greater robustness of eudaimonia with respect to hedonism as two alternative pathways to happiness that people can choose; and about the advantages of the policy implications of eudaimonia.

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The Economics of Eudaimonia

1. Introduction

‘Eudaimonia’ is a difficult word, but it is increasingly mentioned by the studies in Economics of Happiness (e.g., Bruni 2008; Clark and Senik 2011; Benjamin et al 2014; Graham and Nikolova 2015; Clark 2016; Pugno 2016). It has often been translated from ancient Greek language with ‘happiness’, but recently, ‘flourishing’ is a preferred translation. This is because – according to Aristotle’s philosophy (Keyes and Annas 2009) – ‘eudaimonia’ refers to living by functioning well, and by realising one’s human potential, while ‘happiness’ rather means pleasurable feeling.

The fact that such Greek word increasingly appears in Economics of Happiness reveals that the focus of the research in this field is shifting from ‘happiness’ to ‘eudaimonia’, while frequently using ‘life satisfaction’ as an intermediate measure (Huta 2016). This shift may be due to the recognition that ‘happiness’ and ‘life satisfaction’ are not only correlated with economic and socio-demographic variables, but also with some subjective variables that characterise the psychology of the individuals, like perceived trust in others, the confidence of being able to influence events, and other variables on personality traits (e.g., Helliwell et al 2018; Verme 2009; O’Connor 2017).¹

Another reason for this shift may be due to the critical observation according to which the Economics of Happiness paves the way to the claim that people’s happiness should replace GDP as policy goal to be maximised, although being an elusive concept, and easy to manipulate by policy makers (e.g., Johns and Ormerod 2007). This claim is not shared by many happiness researchers, however, who rather prefer to take happiness as a useful indicator to monitor the effectiveness of public policies (e.g., Frey and Stutzer 2011). But building a branch of economics by estimating ‘happiness equations’ in order to study the determinants of ‘happiness’ or ‘life satisfaction’ makes the criticism is easy to raise and the answer difficult to argue convincingly. More structure in the theory and in the method to study the matter would thus be helpful, and ‘eudaimonia’ offers a suggestion for this purpose.

This paper proposes a number of contributions to the shift of the economic research towards ‘eudaimonia’. Section 2 provides a re-reading of Aristotle’s conception of eudaimonia by taking a typical perspective of the economists. In fact, special attention will be paid to the structure that links the variables considered by Aristotle. Section 3 highlights some limits of Aristotle’s conception of eudaimonia, and in particular it poses the question of how reconciling the subjective realisation of one’s potential with the objective standard that should be used to evaluate eudaimonia across people. Section 4 provides a reformulation of eudaimonia that adopts a dynamic approach that links stock- and flow-variables, so that human development is described. Properties and advantages of this reformulation will be pointed out, and empirical evidence drawn from different disciplines will be addressed in support. Section 5 contrasts eudaimonia with hedonism as two pathways to happiness that people can choose. Section 6 concludes with brief remarks.

¹ These variables do not even remain fixed over time (Bartolini et al. 2013; Mikucka et al 2017; Cobb-Clark and Schurer 2013; Boyce et al 2013), as the frequent assumption of fixed-effects in individual panel data implies.

2. Aristotle's conception of eudaimonia: a re-reading

Aristotle's conception of eudaimonia has long been investigated and discussed in philosophy, but it has recently attracted interest also in the Economics of Happiness, and, some time before, in the Capability Approach. The conception of eudaimonia is not simple, especially if it should be translated in modern words, and used for modern life. Moreover, Aristotle's main work on this subject, titled *Nicomachean Ethics*, is not a complete treatise, but it was written as scattered lectures notes. It is not a surprise, therefore, if only some issues raised by the original conception of eudaimonia are considered or stressed in the economic literature. For example, Amartya Sen finds interesting, for his Capability Approach, Aristotle's claim that wealth is not the final good for people (Sen 1999). John Helliwell refers to Aristotle in arguing that people's answer to the survey question about life satisfaction depends on many aspects of conceptions of a good life (Helliwell and Aknin 2018). Luigino Bruni finds interesting the role of friendship in Aristotle's conception of eudaimonia in support to his claim that relational goods should be non-instrumental in order to contribute to happiness (Bruni 2008).

In this section, we reformulate Aristotle's *Nicomachean Ethics* so that is can be easily understood by the economists. In particular, the structure that links the various concepts in an input-output process is emphasised, thus highlighting many issues and implications.

Our central argument is that Aristotle's eudaimonia is not only a dynamic process over people's life-cycle, but it is an *endogenous* process, and it can become a collective process. The contrast with the other conception of happiness in the ancient Greek thought, i.e. *hedonism*, thus becomes even starker. In fact, pleasure in hedonism can be obtained in exchange for costly exogenous resources only. This implies competition on resources, and vulnerability to external shocks. We further show that eudaimonia and hedonism are not simply two abstract conceptions of happiness, but – as Aristotle observed – two alternatives that people choose to practice in their daily lives.

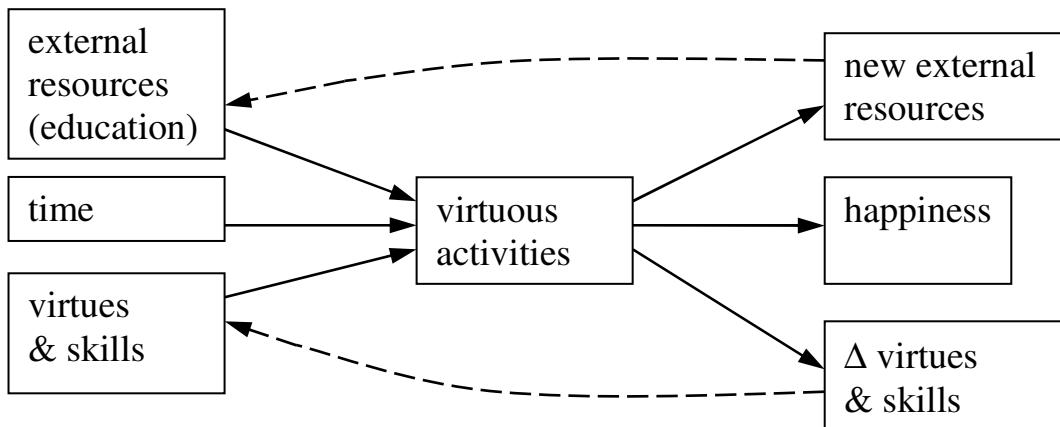
Let us re-read Aristotle's original conception of eudaimonia with the help of the chart represented in Figure 1. The main concepts used as building blocks of eudaimonia are indicated by boxes, which, through the links between them indicated by arrows, can describe how eudaimonia works as a process.

The only box of the chart that receives but not gives arrows is that of 'happiness', i.e. the English translation of eudaimonia, which is – according to Aristotle – the final good of human life. 'Final good' does not only mean that it is not intermediate or instrumental for other ends, but also that it includes all ends valued for their own sake, and that it does not need any other end, i.e. it is both 'complete' and 'self-sufficient'. Eudaimonia thus includes many incommensurable dimensions of human life,² and it does not simply refer to momentary events, but to the entire life of human beings (*NE-R*, I.1 and I.7).³

² This is Aristotle's issue that Helliwell et al (2018) seem to refer to.

³ References to *Nicomachean Ethics* are indicated by *NE*, followed by the Roman number of the book, and then by the number/s of the chapter/s. The extension '-R' or '-C' means that the English words used are taken from the translation of, respectively, William D. Ross or Roger Crips. Sometimes, a 4-digit number indicates the row of the original work.

Figure 1: A representation of Aristotle's conception of Eudaimonia



The box of ‘happiness’ in the chart receives the arrow from the box of ‘virtuous activities’, thus indicating that happiness materialises by realising practical projects when these are “in accordance with the best and most complete [...] virtue” (*NE-R*, I.7). ‘Virtue’ – according to Aristotle – is a “state of character” (*NE-R*, II.5), which should be intended as a ‘disposition’ (*NE-C*, Introduction) that enables the person to accomplish activities in an excellent way. When virtue is “the best and most complete” in performing activities, then the activities become pleasurable (*NE-R*, I.8). In this case, the person finds pleasant to think about his actions, and he is thus self-confident (*NE-C*, IX.4.1166a). Indeed, “the good person should be a self-lover” (*NE-C*, IX.8.1169a).

Since ‘activity’ is a flow, and virtuous activities are pleasurable intermediate ends for the final good, then eudaimonia is not a state, but it takes place over time. And since only the beginning of this dynamics can be controlled, eudaimonia is even difficult to predict (*NE-R*, III.5). Therefore, in economic terms, happiness is not an object that can be easily maximised, and virtuous activities are not costly means for it.

Activities need person’s ‘skills’ (*NE-C*, I.1) to be performed, and virtuous activities thus need both ‘skills and virtues’, as the box in the chart indicates. These skills form an endowment that is distinctive for each person.

In order to use these skills for the virtuous activities, investigation and decision, i.e. evaluation and choice, are necessary, and must be guided by rationality (*NE-R*, I.7 and III.2).⁴ This is the distinctive property of human beings, in contrast to the other animals (*NE-R*, III.1), so that human life is a rational life (*NE-R*, I.7).

Virtuous activities need ‘resources’ like “friends, wealth, and political power”, besides virtues and skills (*NE-C*, I.8). In fact, it is impossible to perform virtuous activities if these resources are not available. But, differently from virtuous activities, such resources are pure instruments for eudaimonia, i.e. they do not bring happiness in themselves (*EN-C*, I.5.1096a). Therefore, “it is enough to have moderate resources” (*EN-C*, X.8.1179a), i.e., resources are not essential above some subsistence threshold. Aristotle goes even further: if someone pursues money-making, he does it “under compulsion” (*NE-R*, I.5), i.e. he is subject to a form of addiction.

⁴ In Aristotle’s words: “the virtues are rational choices or at any rate involve rational choice” (*EN-R*, II.5.1106a).

Eudaimonia is thus theoretically possible in human life, but how can it be actually pursued? Proper virtues and skills are not given by nature (*EN-C*, I.12.1103a), so that both of them must be pursued as intermediate ends. Indeed, – according to Aristotle – virtues present at birth can be developed not only through education, as a particular ‘external resource’ that implies the activity of learning (see the chart), but also through autonomous “personal effort” (*EN-C*, I.9.1099b) and “experience” (*NE-R*, II.1.1103a), i.e. by “exercising” (*NE-R*, II.1103a) the virtues and skills themselves through the activities.⁵ Then, over time (a further input box in the chart), practicing virtues becomes habit, and skills can be similarly developed (*NE-R*, II.1.1103a). Therefore, the ‘increase’ of virtues and skills, indicated by the symbol ‘Δ’ in the chart, is both an outcome of exercising virtuous activities, and the source of the positive feed-back going to the endowment of virtues and skills, which can thus be used as an increased input for the next round.

Since virtuous activities are both pleasurable and able to exert a positive feed-back, an *endogenous dynamics* emerges, in which virtues and skills grow by themselves, if not constrained by inadequate external resources and education. The realisation of individual potential to perform virtuous activities is thus not simply due to the relaxation of external constraints, but also to individual rational choices and overall pursuit of the good.

The person does not develop by living happiness in isolation, because “a human is a social being, and his nature is to live in the company of others [...]. So the happy person does need friends” (*EN-C*, IX.9.1169b), or “personal relationships” – according to an alternative translation (*EN-C*, Glossary, p. 207). Aristotle’s definition of ‘friendship’ is broad, and he distinguishes friendship for the good, for pleasure, and for utility. Complete friendship is found only between virtuous people, who wish goods for the sake of the other. (*EN-R*, VIII.2). In this case, the “friend is another self” (*EN-C*, IX.9.1170b), as the person was completely identified with the friend, so that having many close friends is unlikely (*EN-C*, IX.10.1171a). In the case of friendships for pleasure and for utility, Aristotle observes the presence of instrumentality (*EN-C*, IX.5.1167a), so that friendship becomes an ‘external resource’ (*EN-C*, IX.9.1169b) (see the chart).

Human sociality is even wider – according to Aristotle – “[f]or even if the good is the same for an individual as for a city, that of the city is obviously a greater and more complete thing to obtain and preserve” (*EN-C*, I.2.1094b). Sociality thus means pursuing the good of the community while pursuing personal good at the same time. The most evident example is political activity. According to Aristotle, “political science is concerned most of all with producing citizens [...] who are both good and the sort to perform noble actions” (*EN-C*, I.9.1099b). A more subtle example is the theoretical research of knowledge, i.e. the ‘contemplation of the truth’ (*EN-C*, I.7.1098a). This is a virtuous activity that brings no other end than eudaimonia, and even the most (*EN-C*, I.10.1100b). But the community clearly can benefit from this activity when new knowledge becomes common principles that govern action.

Therefore, another positive loop emerges because of human sociality. In fact, social relationship receives benefit through education and learning common principles, and it gives benefit through teaching, political action and theoretical research, i.e. ‘new

⁵ Crisp notes that ‘activity’ translates the Greek word *energeia*, but this can be also translated with ‘actualization’ (*EN-C*, Glossary, p. 206).

external resources' (see chart). This is again *endogenous dynamics* but in this case *for the community as a whole*. Eudaimonia is not only a process for individuals, but also for the community, and the pursuit of virtuous activities benefits both.

Nevertheless, people can pursue happiness also through a different pathway, usually known as *hedonism*, although the term does not appear in *NE*. People, in fact, can seek pleasure for its own sake, and hence without requiring virtues (*EN-C*, VII.12.1153a). Aristotle proposes a clarifying distinction on this point: "By things *pleasant incidentally*, I mean those that are remedial [...]. Things *pleasant by nature* are those that produce action in a healthy nature" (*EN-C*, VII.14.1154a-b; italics added). In other words, a thing is remedial when it restores the natural healthy state. Although this is an activity, it is not a virtuous activity. In fact, virtuous activities add something new on the basis of the healthy state, like the individual political action. Therefore, restoring the healthy state is a self-exhausting dynamics, whereas eudaimonia can be a never-ending process.

Hedonism thus becomes attractive for people who want to escape from pains (*EN-C*, VII.14.1154a). These people, called "self-indulgent", have such an appetite for pleasant things, that they choose them "at the cost of everything else" (*EN-R*, III.11). This is against eudaimonia (*EN-C*, I.5.1095b), because it hinders the exercise of virtuous activities. People can choose hedonism just because it is naturally attractive (*EN-C*, VI.13.1144b), but then they loose the opportunity to know eudaimonia, and they cannot exercise rationality (*EN-C*, III.1.1110b). They do not develop their virtues and skills, although nature provides such potential to human beings (*EN-R*, II.1).

3. Beyond Aristotle's conception of eudaimonia

Aristotle wrote *Nicomachean Ethics* more than two millennia ago, so that finding interesting suggestions for the modern life in such work is exceptional in itself. Nevertheless, *Nicomachean Ethics* exhibit limits, weaknesses, and ambiguities, according to a number of studies of this text, especially in philosophy. The preceding section has focused on the property that eudaimonia is an endogenous process, while the present section shows that some important aspects of *Nicomachean Ethics* are inconsistent with this type of dynamics. All our analysis about Aristotle, however, does not claim to establish 'what he really said', but it rather attempts to identify useful suggestions to build an 'economic approach to eudaimonia'.

The point of attack may appear a minor one, and in fact it is usually overlooked. The point concerns how Aristotle considers children in relation to eudaimonia. His position is clear from the following quotation:

children live in accordance with appetite [...]. If, then, it is not going to be obedient and subject to its ruler, it will get out of hand. For the desire of an irrational being for what is pleasant is insatiable and indiscriminate, and the activity of desire will strengthen the tendency he is born with. And if appetites are strong and excessive, they actually expel calculation. They should therefore be moderate and few in number, and in no kind of opposition to reason – this is what we mean by 'obedient' and 'disciplined' (*EN-C*, III.12.1119b).

Therefore, children, like animals, are not happy – according to Aristotle – because they cannot exercise virtuous activities. Nevertheless, they can be properly disciplined because they have the potential to develop their virtues (*EN-C*, I.9.1100a).

However, recent research on early human development tells us a different story. Let us report some results of this research in order to give an idea of what children are able to do. Laboratory research with one-year-old children suggests that their ability to acquire knowledge is similar with that of scientists: they formulate a hypothesis, they test it even only by observation, and then they possibly correct it in accordance with facts. They are able to anticipate the solution of simple problems before applying the trial-and-error method, which is typical of the other animals (Gopnik 2009). Studies on the sociality of small children show that they are spontaneously cooperative, and aware that human interaction is governed by social norms. For example, children before the age of two exhibit greater happiness when giving a treat to others than receiving it, even in case of costly giving (Aknin et al. 2012). In another set of comparative experiments, one-year-old children are already able to cooperate by pointing to a desired object, thus directing the experimenter's attention, even if they could take it by themselves. By contrast, chimpanzees point to a desired object only when they cannot take it (van der Goot et al. 2014). Other studies show that three-year-old children are able to recognise property rights (Rossano et al. 2011), and to acknowledge merit to share resources with others, even when sharing is costly for the child (Kanngiesser et al. 2012).

The economists too are recently providing interesting evidence on the development of children. They have found that both cognitive and socio-emotional skills begin to develop early in human life and interact one with the other from then on (Heckman 2008), and that child's emotional health (and not child's intellectual development) is the most powerful predictor of adult life satisfaction (Layard et al. 2014). Child care is obviously important for children's development, but especially better results are obtained if child care is formally structured by following the pedagogical theories where the teacher stimulates children insofar as they realise their skills (Biroli et al. 2017).

To sum up, human development is a continuous process in which children are naturally disposed to properly learn, and they only partially rely on rationality. They thus reveal pleasure while learning, and rationality is not the only guide for them.

Indeed, Aristotle himself attaches two positive roles to pleasure in the pursuit of eudaimonia. First, – as observed by a commentator – “the lack of the appropriate feeling is a *sign* of the agent's not fully virtuous disposition insofar as not taking pleasure in virtuous action may reveal that the agent has not fully realized that virtues are to be sought for their own sake” (Melo 2011: 36). One can thus interpret that feeling pleasure provides some useful information that rational choice can take into account. Second, pleasure can strengthen the choice made, or, as Aristotle explains:

the pleasure proper to an activity enhances it, because those who engage in activity with pleasure show better and more accurate judgement. It is people who enjoy geometry, for example, who become geometers and understand each aspect of it better, and similarly lovers of music, building and so on improve in their own proper sphere by finding enjoyment in it. And the pleasures enhance the activities, and what enhances an activity is proper to it (*EN-C*, X.5.1175a-b).

In this second role, pleasure seems very close to a non-rational motivation, which is difficult to keep completely subordinate to rationality.

The case of children can help to understand another debated issue: If eudaimonia of a person means that s/he develops virtues and skills to the best according to her/his natural potential, like the “shoemaker [who] makes the noblest shoe out of the leather

[s/]he is given” (*EN-C*, I.10.1101a), and if s/he does not obviously lead a life of contemplation that would guarantee her/him the maximum eudaimonia, then which is the standard with which to evaluate *her/his* eudaimonia?

To make clear this issue, let us take the paradoxical example suggested by Daniel Haybron, that is “Genghis Khan, who directed the slaughter of tens of millions. He appears to have done so largely with the blessing of his culture’s moral code. It is not hard to imagine – thus comments the philosopher – that his relatively long life, which appeared to be rather successful on his terms, went very well for him indeed” (Haybron 2007a, ch.11). This is an example of ‘self-fulfilment’, – thus argues Haybron (2008b) – while Aristotle addressed ‘nature-fulfilment’. But which is the standard that enables one to evaluate whether ‘self-fulfilment’ does fit ‘nature-fulfilment’ or not? or, in Aristotle’s example, whether the wise shoemaker really pursues the ‘final good’?

Having discarded pleasure as the standard, since this may be hedonistic, Aristotle would argue that the standard for the evaluation is in continuous refinement by those who live contemplating, and precisely by those who exercise the theoretical study of ethics. This is a discipline that is still actively studied today.⁶ However, both ancient philosophy and recent studies seem far to have achieved a definite conclusion on this matter.

The case of children indicates another route: the study of ontogeny and, as suggested by the comparison of children with the other animals, the phylogeny of human beings (Tomasello 2011; Suddendorf 2013). This route may not bring us to the possibility to evaluate human behaviours in details, as Aristotle did in the discussion of the various virtues (*EN*, III-IX).⁷ But going back to the early development of human beings can help to explain which are their fundamental skills, i.e. those skills that generate and condition the other human skills, and that can provide a resilient well-being. This route can lead research to better understanding some interesting issues, such as the engine of human development, the actual choice made by people between eudaimonia and hedonism, the greater strength of eudaimonia, and which are the implicit suggestions to improve people’s lives.

This route promises to be far-reaching, but the next section will attempt to take just a step forward.

4. An economic approach to eudaimonia

The philosophy of eudaimonia is essentially normative and theoretical, although Aristotle describes various psychological mechanisms of the persons. The Capability Approach is, again, normative and theoretical, although the attempts to apply it to empirical cases are several. Instead, the psychology of eudaimonia, as it emerges from the bulk of recent studies on this matter, is mainly descriptive and empirical (Tiberius and Hall 2010; Melo 2011; Crespo and Mesurado 2015). The Economics of Happiness, which usually refers to ‘life satisfaction’ and ‘happiness as a state of mind’, provides an increasing number of studies on eudaimonia which are, again, descriptive and empirical (e.g., Clark and Senik 2011; Graham and Nikolova 2015; Clark 2016; Bachelet et al

⁶ See Hirata (2016) for an economic discussion on ethics and eudaimonia.

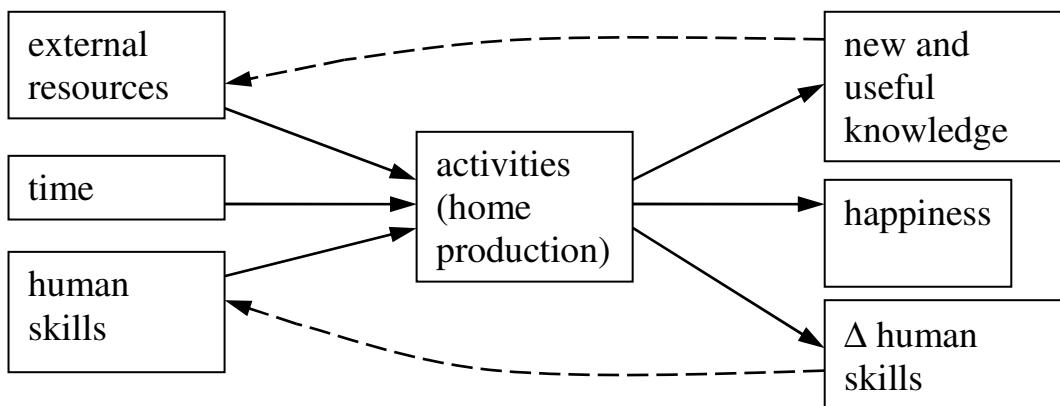
⁷ In fact, we will maintain evaluation at higher generality, and closer to that of the Capability Approach. More precisely, our generality will be less than that in Sen’s Capability Approach, which even abstains to indicate the priorities among the capabilities, but more than that in Martha Nussbaum’s (1999) Capability Approach, which lists many central capabilitites.

2016; Nikolaev 2018). Nevertheless, the psychology of eudaimonia and the Economics of Happiness do not abstain from normative implications, but the former normally addresses their advice to individual persons, as the various self-help books on happiness show, and the latter is rather addressed to the policy maker, although in different ways (Layard 2005; Frey and Stutzer 2011).

This section proposes an approach to eudaimonia which is theoretical but easily applicable to empirical cases, and descriptive, but with straightforward normative implications that may be useful to both individual persons, and the policy maker. The next section extends the approach to the contrast between eudaimonia and hedonism, which are described as two distinct pathways to happiness. The approach is economic in method, because it is based on individual choice and on the individual attempts to correct errors, while taking into account resources constraints. The approach is not focused instead on the different feelings that characterise happiness as the outcome of the two different pathways, which is a typical psychological focus. Indeed, characterising eudaimonia and hedonism for how these are pursued makes the feeling of happiness less important. Happiness can be rather evaluated over some long stretches of time, like in the case of the measure of ‘life satisfaction’. As psychological studies show, life satisfaction is correlated with both eudaimonia and hedonism, being both measured in a variety of ways (e.g. Huta and Waterman 2014; Huta 2016).

Let us characterise eudaimonia as ‘home production’ in Becker’s sense,⁸ i.e. as an activity performed by the individual in which he employs resources to produce what he enjoys. It thus becomes possible to identify ‘the technology of eudaimonia’ which employs some definite inputs, and transforms them into some definite outputs, subject to definite constraints. This technology is represented in the chart of Figure 2, which clearly exhibits a similarity with the chart of Figure 1, representing Aristotle’s conception of eudaimonia.

Figure 2: A modern representation of Eudaimonia



The inputs of the eudaimonic home production are: person’s ‘human skills’, person’s time and external resources, like market goods, skills and time of close others.

⁸ Indeed, Becker (1965) talked about ‘household production’, thus including the case of the ‘production’ of children.

Human skills are mental skills that possibly involve body skills, since our body skills as such are not so special with respect to the skills of other animals. Developmental and comparative psychologists, as well as paleo-anthropologists and economists, provide evidence, from both ontogenetic and phylogenetic perspective, that the fundamental human skills, i.e. the skills that made possible the rise of other typical human skills, are two and interconnected: creativity and sociality. The most elementary ‘creativity’ is the skill to imagine counter-factual scenarios, which may become useful in social life, i.e. it can become knowledge that is useful for actions with others, and for the creation of new knowledge by others (Suddendorf 2013). This is the origin of the human skill to intentionally change humans’ course of life, thus making adaptation capacity more effective. The derived human skill that is most well-known is language, which in fact arises in babies at several months of age, i.e. after exercising their elementary creativity skill (Gopnik et al 1999; Gopnik 2009).

Evidence on the presence of a special ‘sociality’ in little children has been mentioned in the previous section, while the rise of a special sociality in our ancestors can be mentioned here by addressing the economic studies on how early humans become cooperative (Bowles and Gintis 2013). Creativity and sociality, together with language, give rise, at the societal level, to culture, which is the typical product of human species (Tomasello 2011).

The two skills of creativity and sociality can provide a general and demanding standard to evaluate people’s behaviours. They are general because many types of behaviours are both creative and social. But they are also demanding, because many human behaviours imply either little creativity, like the repetitive but pleasurable activities, or little sociality, like the search for personal visibility and power, or even little creativity with apparently high sociality, like the conformism to others’ behaviours.

Exercising creativity and sociality requires person’s time, as second essential input for the home production of eudaimonia. For example, learning, which creates person’s stock of knowledge by exploiting others’ knowledge, requires time because the new information should be integrated with acquired knowledge in order to be useful. The neurobiologists confirm this by observing that effective learning entails internal changes of the human body (Immordino-Yang 2016).

Market goods are useful but not essential inputs, after personal subsistence has been guaranteed. Skills and time of close others are also useful inputs but they may become less important in adulthood.

The outputs of eudaimonia are three: an increase of the fundamental human skills, i.e. creativity and sociality, possible new and useful knowledge and things for the community, and ‘happiness’ over the long run. The increase of the fundamental human skills follows from exercising person’s initial human skills in the eudaimonic activities. Supporting evidence for both cognitive and socio-emotional skills is provided by Heckman (2008) when he addressed the ‘self-productivity’ of skills.

The knowledge and things that the community regards new and useful, or simply interesting for others, is the output of eudaimonia in adults. Social recognition does not necessarily arise only in the cases of scientific discoveries, innovations, and artistic works, which remain the top output, but also in cases of intuitions, and new solutions to old problems.

‘Happiness’ as output of eudaimonia should be evaluated over the long run, because both the increase of the fundamental human skills, and the realisation of new ideas and things takes time. As some psychologists observe, living eudaimonia involves

integrating past, present, and future, while happiness as a state of mind is largely present oriented (Baumeister et al 2013).

Eudaimonia can be thus represented as the transformation of the mentioned inputs into the mentioned outputs, but with a special meaning. By ‘transformation’ we mean *seeking to optimise the matching between person’s human skills, as articulated in specialised skills, and the available activities to her/him*.⁹ To give an idea, let us take the metaphor of the climber of mountains. This person is endowed with climbing skills, which are derived from her/his early passion for mountains. By climbing, s/he expects to realise a challenging undertaking that gives her/him more self-confidence and social recognition, and hence more happiness. S/he has to decide which mountain to climb, and through which way, but also which of her/his specific skills, which goods, and others’ help to use. The climb should be neither too easy for her/his skills, because this would miss the aims of self-confidence and social recognition, nor too difficult, because this would damage her/his happiness.

This metaphor also makes clear a structural aspect of happiness as eudaimonia: that the achievement of the peak, which is the immediate goal, is not the only source of happiness, because also the climbing activity, which deals with the challenge during the enterprise, yields happiness to the climber.¹⁰ This latter source of happiness is intriguing because it is fused with effort, which is usually considered as a cost by the economists. Indeed, if the climber was transported to the peak of a challenging mountain by a helicopter, s/he would have achieved the immediate goal, but s/he would have missed the challenge, thus damaging her/his happiness.

Therefore, optimising the matching between human skills, which are differently articulated in specific skills according to how the initial talent was early cultivated, and the available activities, which exhibit a variety of difficulties, would bring the person to happiness maximisation. However, the person cannot take happiness as an object to directly maximise, because the matching introduces a strong form of uncertainty. In fact, the person cannot know the distribution of probability of success of his undertaking, because, in the case of challenging activities, the undertaking cannot be repeated without changing person’s skills, and hence the premises for further action. Optimising the matching is thus a searching process through activities and their degrees of difficulties, while skills continuously change through experience.

As result, this dynamics becomes *endogenous*, because exercising the eudaimonic activity is both satisfying and effective in increasing human skills. If the person remained heavily dissatisfied, he would choose more rewarding options. If human skills did not increase, the dynamics would require external incentives only. In both cases, the activity would cease to be eudaimonic.

Learning and experience may lead the person to approach, over her/his life-cycle, a time path in which the skills/activity matching is continuously improving, i.e. her/his optimum path. However, external shocks to the budget and time constraints renovate the necessity of seeking the best matching, so that the person’s life is made up of continuous learning.

The similarities of this economic approach to eudaimonia with Aristotle’s conception of eudaimonia are rather evident, if the two charts of Figures 1 and 2 are

⁹ This idea is an elaboration of Scitovsky (1976) and Csikszentmihalyi (1990), and it is developed and formalised in Pugno (2016).

¹⁰ Some psychologists would say that the climber has the intrinsic motivation to climb (Deci and Ryan 2000; Pugno 2008).

compared. Both of them display endogenous dynamics, in which performing proper activities plays a key role, and, by contrast, pleasure and material wealth are not pursued in themselves. In both of them, such proper activities enable the person to lead a happy life (in which pleasure plays some role), and trigger improvements in the community's life. According to Aristotle, activities are proper if performed in accordance with virtues or excellence. In our economic approach to eudaimonia, activities are proper if human skills are 'excellently' matched with their difficulty.

The main differences between Aristotle's conception and our approach lie in the role of rationality, and in the standard to be used to evaluate the "final good of human life". According to Aristotle, what distinguishes human life is rationality, which both governs the choice of activities, and, as 'rational reflection' or 'thoughtful consideration', investigates about the 'final good', possibly in a 'contemplative life'. In our approach, what distinguishes human life is the combined skill of creativity and sociality, which affects preferences with rather limited voluntary decision, and then it affects the rational choice of activities, thus developing inner talent and aptitude from childhood to adulthood.

Such combined skill can also provide the standard to evaluate people's eudaimonia, because creativity and sociality are not only rooted in the nature of human beings, like other skills and needs (see, e.g., Doyal and Gough 1991), but are distinctive and fundamental for the healthy development of the others skills in the human species. In this way, the inner individual endowment provides an objective basis to the subjective state of happiness, which thus takes specific qualities, such as the resilience to adverse shocks.

5. Eudaimonia and hedonism as two pathways to happiness

According to Aristotle, human nature drives people since childhood towards the pursuit of pleasure, unless they are educated to use reason, which is in their natural potential. According to our approach, human nature drives people since childhood towards eudaimonia, unless they are constrained by adverse material and social conditions. Despite this difference, rational choice between pleasure and eudaimonia plays a role in both cases, so that hedonism and eudaimonia can be described as two distinct choice options leading to happiness.

The two pathways, however, are not symmetric, but differ in structure. Whereas the immediate object of pursuit in hedonism is happiness, in the form of pleasure, the immediate object of pursuit in eudaimonia is the activity performed in the excellent way, so that happiness derives as consequence, even including pleasure.

In psychology, the contrast between hedonism and eudaimonia, although variously defined, has been extensively investigated and confirmed from the empirical point of view (Thorsteinsson and Vittersø 2018). Eudaimonia has been often measured by posing questions on 'personal growth', 'purpose in life', 'positive relationships', and 'life meaning', thus capturing aspects that are consistent with our approach. Questions to capture hedonism often include comfort, besides pleasure (Huta 2016; Huta and Ryan 2010). This is a welcome extension, because the term 'comfort' especially calls for consumption of goods and services, and it makes evident that the economic conditions are essential for hedonism at every level of opulence. In this way, consumer theory of economic textbooks can offer a clear interpretation of hedonism.

Differently from eudaimonia, human skills are not so important in hedonism. Mental skills are not important for enjoying pleasure, while some skills are necessary to acquire goods and services for comfort, but these are specific skills that could be not ‘human’. In fact, typical skills of this type are skills for work, which requires more routine behaviours than creativity, and more competition with the other workers than socialisation. In order to enjoy more comfort, more specialised skills for production are required, and more formal education is usually needed. In this case, education may be useful for both eudaimonia and hedonism, depending on its orientation.

Time is an essential input to ‘produce’ and enjoy eudaimonia, but it is important and not always essential to acquire goods and services for hedonism, in which case it is a cost rather than a benefit. Time to enjoy consumption is even irrelevant, according to textbook economics.

Social relationships are also essential in eudaimonia, because they are both essential means and essential ends within the process of development of human skills, and of enjoyment of happiness. By contrast, social relationships are only a means in hedonism to achieve pleasure, and to produce more goods and services through the division of labour.

Therefore, people have to choose between two very different options, in order to achieve happiness. The social and material constraints are primarily important to condition this choice, especially in the first part of people’s lives. If the material constraint is not too binding, and if early education is adequate for the development of human skills, the endogenous dynamics of eudaimonia generates new skills that reinforce the choice for the eudaimonic option. When human skills are thus strengthened, people become more resilient to adverse shocks in both the material and social conditions. By contrast, if the material conditions are deprived, and the social conditions are inadequate, hedonism becomes attractive because immediate pleasure appears as a remedy. In this case, the endogenous dynamics of eudaimonia may be not triggered, and human skills may languish. People remain thus vulnerable to adverse shocks.

The two pathways can be complementary, but eudaimonia strengthens by practicing, and weakens by abstaining, so that the two pathways tend to become substitutable over people’s life-cycle. Some forms of addiction to consumption in the pursuit of hedonism, as suggested by Aristotle himself, can reinforce this decoupling. A strong shock is thus necessary to switch from a pathway to the other.

In order to illustrate the different robustness of happiness achieved through the two pathways, let us consider the link of, respectively, eudaimonia and hedonism, with physical health, or physiological states conducive to health. An increasing number of studies in psychology and epidemiology shows that self-reported measures of eudaimonia have positive effects on physical health, and on recoveries from adverse states, measured with specific morbidities, biomarkers, and longevity. Specific neurobiological correlates for the eudaimonic measures are also found (Ryff 2017). By contrast, hedonic measures of happiness, like positive and negative affects, exhibit a far weaker link with physical health (Ryff et al 2004; Cross et al 2018). Happiness measured with life satisfaction seems to lie in between, because the studies on the link

with physical health give mixed results (Cross et al 2018).¹¹ This contrast between the two pathways seems to confirm that eudaimonia goes deeper into mental stock-and-flow dynamics, which are typically human, while hedonism is focused on body expressions, which can be common to other animals.¹²

6. Concluding remarks

The economic research on people's well-being is shifting the focus from 'happiness', as a pleasant state of mind, to eudaimonia, as realising one's potential by functioning well. In other words, the shift is from studying the determinants of a goal, to studying a structure that produces a dynamics. The new research is thus more ambitious, but also more rewarding, because it makes the analysis more robust and powerful, and the policy implications easier to agree.

This paper has taken a step in this direction. It has shown how a re-reading of Aristotle's work with the lens of the economists can provide the basis to build a modern economic approach to eudaimonia. Specifically, the conception that 'eudaimonia means realising one's potential by functioning well' has been spelled out in modern terms as follows. First, people's happiness is the outcome of activities both when these are underway and when the planned goals are achieved. Second, the activities are chosen rationally, i.e. in the most excellent way, by pursuing the matching of the endowment of people's skills with the activities, and by employing external resources. Third, performing the activities reinforces the skills, refines the ability to choose, and contributes to the resources for others, thus triggering an endogenous dynamics that sustain happiness at both individual and societal level. Fourth, a minimum of social and material resources are necessary to perform the activities, but opulence is unnecessary.

Aristotle's conception of eudaimonia also exhibits some weaknesses. The main one is found in the unconvincing reconciliation between its objective basis on human nature, and its subjective expression in the individual self-realisation. Some philosophers regard this reconciliation as logically untenable, and the application of objective standard to evaluate individual self-realisations as paternalistic (Haybron 2008). By contrast, some psychologists attempt to identify the objective standard in specific psychological constructs that are universally linked to happiness, thus making possible the evaluation of individual eudaimonia (Ryff and Singer 2008; Ryan et al 2008).

The present paper has followed this latter line of research, based on further scientific studies on human development. It proposes to focus on two interconnected very fundamental skills that are specifically human, because they are not detectable in the other animals but are clearly present in little children, i.e. when the influence of the environment is at the minimum. These skills are creativity, meaning the skill to imagine

¹¹ The economists Fleurbaey and Schwandt (2016) also find that individual maximisation of subjective well-being, whether happiness or life satisfaction, turns out to be self-defeating in the long term with respect to more eudaimonic goals.

¹² In fact, while creativity and sociality have been investigated by focusing on the *differences* of humans from the other animals (Suddendorf 2013; Tomasello 2011), the investigation of emotional states, such as stress, rather focuses on the *similarities* of humans with the other animals (Diener et al 2017).

counter-factual scenarios, and sociality, meaning the skill to collaborate for intentional common goals.¹³

This suggestion has enabled us to amend Aristotle's conception of eudaimonia. Firstly, children are no longer excluded from eudaimonia being non-rational, as Aristotle claimed, but are integrated into the human development of adults. Secondly, the development of creativity and sociality, which are linked to personality traits and preferences, cannot be easily predicted in direction and speed, but can heavily affect choices. Therefore, the role of rationality is limited in the long run.

The paper concludes with the contrast between eudaimonia and hedonism. Having reformulated eudaimonia in economic terms, a clear distinction arises in the two pathways to happiness that the individual can choose. Moreover, since eudaimonia tends to self-reinforce, the two pathways tend to be substitutable. This opens the research on the conditions that favour or hinder eudaimonia against hedonism. As Aristotle suggested, hedonism may be very appealing, and modern producers push in this direction by offering increasingly pleasurable consumption goods. Eudaimonia thus emerges as a more robust pathway to happiness because it relies on internal resources, i.e. individual skills, while hedonism is more vulnerable to external shocks because only relying on external resources.

Although the policy implication appears obvious, namely encouraging eudaimonia, the advantage of this policy should be stressed. The direct goal for policy is not people's happiness, but rather people's formation of human skills. Activities, goods, material conditions, social arrangements and organisations should not be evaluated for their effects on happiness, but for their effects on people's human skills. Happiness thus becomes only an indicator to monitor the effectiveness of public policies over the long run. Finally, human skills can be more objectively measured than happiness, and policy for their development less paternalistic than, e.g., imposing taxes on pleasurable goods.

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¹³ The concept of 'human development' adopted by the United Nations Development Programme, e.g. UNDP (1990), is different from ours, as evidenced in Pugno (2019).

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