Chapter 10

Naturalisation of Normative Economics

Marcin Gorazda

Abstract It is almost taken for granted among economists that the ultimate goal of public policy is to provide society with more “welfare”, and the concept of welfare as well as the general strategy how to improve it is roughly the subject of studies of normative economics.

The naturalisation of normative economics is an attempt to analyse the “ultimate goal of public policy” from the perspective of human cultural evolution. The “ultimate goal” is one of the “cultural variants” which may be subject to Darwinian analysis and may or may not be adaptive in given circumstances. The most important problem which is posed here is whether such analysis could be helpful in establishing that “ultimate goal” and thus to contribute to normative economics and resolve the “normative problem” (as it is rephrased in the philosophy of law).

Three fundamental issues which seem to constitute the strong limits of the naturalization of the normative problem are highlighted:

1. Naturalistic ontology does not overcome the “naturalistic fallacy” indicated by Hume and Moore.
2. The epistemological perspectives in the naturalistic accounts are confused. Different normative postulates may be formulated from the individual perspective and from the perspective of the respective group, while the Darwinian analysis seems to privilege the population.
3. The genetic algorithm with endogenous fitness function seems to be non-susceptible to “mathematical close-up”. Even if we know the initial normative order, there are limits to finding a shortcut in order to predict the future value of the fitness function. In other words, the predictability of the future social order is fundamentally restricted.

M. Gorazda (✉)

Copernicus Center for Interdisciplinary Studies, Jagiellonian University, Krakow, Poland

e-mail: marcin.gorazda@gsz.com.pl

10.1 Introduction

Daniel Hausman (Hausman et al. 2017) in his recently published interview gave the following answer to the question about the ultimate goal of public policy:

What is often said, which I think perhaps is justifiable, but not very helpful, is that a central goal of a government should be to promote the general welfare or general wellbeing. The reason I don't think that it is very helpful is that I don't think we have a good grip on what general wellbeing is.

This response perfectly reflects economists' first and spontaneous intuition of what is going on in normative economics. It is about the general wellbeing, and the main problem to be resolved is what it means.

Alfred Pigou, the indisputable father of welfare economics, was of a similar opinion. Although he did not see economics as a normative science, he claimed that it is "knowledge for the healing that knowledge may help to bring" and the most important task for economists is "to make more easy practical measures to promote welfare" (Pigou 1920, 30). He also provided us with the important insight of what welfare could be, looking for its foundations in the states of consciousness and their relations. However since policymakers have no access to the states of consciousness, and can hardly influence them, they need a convenient proxy which is money and economic welfare. The relation between money and welfare is not direct but is mediated through desires and aversions. Money does not measure the satisfaction received from the things it buys, but rather, the strength of our desires for those things (Hausman et al. 2017, 38).

Therefore Philippe Mongine (2002, 145) proposes the following definition of normative economics:

The task of normative economics is to investigate methods and criteria for evaluating the relative desirability of economic states of affairs.

It sounds neutral (especially the phrase "relative desirability") but soon evoking Pigou, he instantly and directly refers to welfare economics, presenting four consecutive stages of its development (new welfare economics, social choice theory, modern welfarism). He also quotes eight basic assumptions of welfare economics:

- I. Normative economics is an exclusive teleological theory which attempts at answering question about social good.
- II. Social good is social welfare.
- III. Social welfare is determined by the data of individual welfare.
- IV. It exploits a particular notion of the social state which is determined by economic variables, primarily quantities of commodities consumed.
- V. Individual welfare can be measured by an index of preference satisfaction.
- VI. The index summarises individual choice behaviour (revealed preference theory).
- VII. The index has standard properties of an ordinal utility function.
- VIII. The index is not comparable from one individual to another (Mongine 2002, 160).

The assumptions are not indisputable, and in the course of the normative economics development some of them were undermined. Nonetheless, they provide us with a general concept of welfare as it is understood by economists. The concept reveals a strongly individualistic approach (with many reservations). The value of the social welfare function is supposed to determine the social good, while the ultimate social good revealed thereby determines the direction of public policy.

The idea that a somewhat ambiguous concept of general welfare should be the central goal of public policy is quite recent. It goes back directly to utilitarian ethics and partially to enlightenment ideology. Partially, because when we study the text of the three oldest constitutions (the American, the French and the Polish), definitely inspired by the European enlightenment, we will indeed find references to wellbeing, but this is not their central goal. In the American constitution, before welfare is mentioned, it reads: “more perfect union, justice, domestic tranquillity and common defence”. In the French Declaration of Rights of Man and Citizen: “natural and imprescriptible rights of man” are put forward and “these rights are liberty, property, security, and resistance to oppression”. And in the Polish constitution, we even find a passage which sounds very counter-welfaristic: “...holding dearer than life, than personal happiness the political existence, external independence and internal liberty of the people ...”. The deeper we go into the human history and further from the European culture, the fewer references we find. Societies have a variety of concepts of their destiny and their ultimate goals. Throughout history and the world, welfarism is probably the least popular, while what seems to dominate are various theological concepts where the ultimate goal is subordinated to certain transcendental values (sacred natural rights, God’s will etc.) or “tribal” concepts where it is defined in terms of a nation, state, tribe or tribal culture. We may reasonably conclude that:

1. Wellbeing understood roughly as described above by Mongine is far from an obvious answer about the ultimate social goal, regardless even of its ambiguity;
2. There might be some “natural” determinants of our concept of the ultimate social goal, and investigating them could be an interesting approach.

This paper attempts to investigate these possible, natural determinants of the concept of the ultimate social goal, primarily on the basis of the naturalistic, evolutionary approach. Assuming a certain mechanism of biological and cultural evolution, it tries to establish whether that mechanism might be instructive in the search for the social goal. In the first two sections, the problem is rephrased in terms of legal philosophy (the so-called “normative problem”), and the naturalistic jurisprudential approach is discussed. In the following section various evolutionary theories are presented, and then used to reconstruct the mechanism of the emergence of a normative order. In the closing sections two types of conclusions derived from the mechanism are drawn: Firstly, that in the light of the evolutionary mechanism, the present concept – the pursuit of wellbeing – may be maladaptive. Secondly, that the normative problem itself may be undecidable.

10.2 The Normative Problem in Naturalised Jurisprudence

Economics is not the only science which asks about the ultimate social goal. Similar question is asked by legal philosophers and the history of this question in this part of humanities is much longer than the history of normative economics. In jurisprudence, the question of the ultimate social goal, or in other words, the question of what law should govern the society, is often called “the normative problem” (Załoski 2014).¹ Since this phrase uses the same adjective as “normative economics”, it will be applied further in the paper.

There are several currents in legal philosophy which have worked out their distinctive solutions to the normative problem. The most prominent among them are various sorts of natural law theories (some of them directly gave rise to the values evoked in the constitutions mentioned above), legal positivism and normativism, and legal realism. Since we will be looking for the “natural determinants”, which roughly means scientific, and has nothing in common with natural law theories, we will focus on the last current. To naturalise the normative problem means to search for a solution within the science which describes human behaviour most accurately and comprehensively. Legal realism which was especially vivid in the USA in the first decades of the twentieth century developed an instrumental approach to law. Law was considered to be exclusively a means to an end.² Early legal realists, under the great influence of Benthamite utilitarianism, either did not notice that the concept of an end is not granted forever, or they thought that it could be established on the basis of scientific, natural studies of the regularities in human behaviour. Thus, they wanted to naturalise it. Both assumptions failed. The instrumental view of law found its disastrous culmination in the twentieth-century totalitarian regimes while the development of social sciences was too poor to draw sound conclusions. But the idea came back unsurprisingly with the progress in normative economics in the form of the Economic Analysis of Law, and with the progress in behavioural sciences in the form of experimental and evolutionary jurisprudence.³ Those trends are the contemporary successors of the American realists, and they have also attempted to solve the normative problem.⁴

Before we elaborate further on the evolutionary approach, which seems to represent the most comprehensive theory of human behaviour and therefore is most promising, one additional remark on normative philosophy is in order. The sentences which are applied in ethics and law are not logical predicates, which means that they cannot be attributed truth value. They express duties and rights. They are the so-called “ought-sentences”, and they require a different kind of logic than

¹The normative problem should not be confused with the problem of normativity, which is also commonly discussed in the theory of law. The latter refers to the justificatory power of rules which makes us follow them and has nothing in common with the ultimate end problem.

²See Dewey (2008, 251) and Tamanaha (2006).

³See Beutel (1957).

⁴More on this in Gorazda (2017a, b).

classical predicate calculus. Whether such logic can be effectively constructed to conduct sound reasoning is an entirely different story. Lawyers are taught that to the certain extent it can, and they habitually perform such reasonings on the basis of a few inferential rules. A possible answer to the normative problem by its nature must also be the ought-sentence. Naturalisation of the normative problem means that its solution is sought in the natural facts (facts established in the natural sciences). From the logical point of view, it requires a special kind of reasoning: from predicates (factual sentences) to ought-sentences, in other words, from facts to duties. It is the so-called Hume/Moore problem as both philosophers agreed that such reasoning is not possible.⁵ There are several proposals on how to solve this presumed impossibility, beginning from its denial,⁶ through the extended kind of logic and inferential rules (Brożek 2013) and finally to the “modest naturalistic programme”. The last one was advocated among others by Quine and is currently supported by Churchland. Briefly, it does not deny the genuineness of the Hume/Moore problem, but it states that even if at least one ought-sentence is irreducible to facts and must be necessarily accepted as a temporary axiom to conduct any sound deontological inferences, there is still enough room to reason on the specific duties. On the other hand, those specific duties are not inferred top-down (i.e. first general ultimate rule and then its derivatives) but, on the contrary, the usual way of constructing the normative order is bottom-up, i.e. first we resolve the specific cases, and then the applied, repetitive pattern of that resolving becomes the upper-level-rule.⁷

10.3 Evolutionary Philosophy of Law

Żałuski specifies a few methods of naturalisation which are based on or at least refer to the Darwinian theory of evolution. Historically, the first to be mentioned is social Darwinism. The term is often used in a pejorative sense, and the concept which lies behind it is attributed (disputably) among others to H. Spencer. If the main ‘goal’ of evolution is ‘the survival of the fittest’ (a phrase coined by Spencer [1864, 444]), the ultimate goal of the order designed by humans should be the same. Otherwise, neither the order nor humans who designed it will survive. Social Darwinism was strongly and commonly criticised, mainly due to the dubious objectives of its supporters. But the most obvious weakness is the necessary pre-assumed and previous knowledge on the features which make someone the fittest. Another proposal listed by Żałuski is “functionalism”. If we could, in accordance with the evolutionary principles, decode the functions of the given psychological or behavioural mechanism, we could also design a normative order compliant to those functions. The similar logic can be reversed. Normative order should not require from humans that

⁵ See Hume (2000), Moore (2004), Brożek (2013), and Hohol (2015).

⁶ Cf. Searle (1964) and Pigden (1991).

⁷ Cf. Quine (1979) and Churchland (1986).

they do what in light of the theory of evolution proves to be impossible or prohibitively costly. Those costs come from our predilections which are hardwired into human nature, which we can decode and thus conclude that any attempt at altering them will most probably fail. We owe this negative reasoning to legal theorist Owen D. Jones (Załoski 2018, 102). A conceptual tool inspired by evolutionary psychology has been worked out on the basis of this concept to assess the comparative effectiveness of legal regulations: the so-called “law of law’s leverage”. The possibility to determine certain ‘function’ of human behavioural traits or predilections opens the room for the determination of human nature in general or the direction of human evolution. Both can also be instructive for public policy and may give rise to “evolutionary ethics”. Such reasoning led one of the most famous contemporary legal philosophers, H.L.A. Hart to propose the minimum content of natural law which is based on the assumption that certain rules are necessary for the realization of the ‘minimum purpose of survival which men have in associating with each other’ (1994, 193). Hart reconstructed certain features which may undermine our survival and then set against them rules, which, when obeyed, may neutralise those features. He listed five such features and their respective counteracting rules (Hart 1994, 195–196)⁸:

1. Human vulnerability to bodily attack, which is counteracted by the normative restriction of violence.
2. Human approximate equality in ‘physical strength, agility, and intellectual capacities’, so that in longer term nobody could effectively subordinate other members of the tribe, which entails rules constituting a ‘system of mutual forbearance and compromise’.
3. Human limited altruism makes rules of mutual forbearance necessary and possible.
4. Limited resources for humans – are counteracted by ‘some minimal form of the institution of property (though not necessarily individual property), and the distinctive kind of rule which requires respect for it’.
5. Human weakness of will and limited understanding of its long-term interest, which is counteracted by the system of sanctions which applies when certain rules are not observed.

But the most comprehensive, evolutionary theory of law we owe to Załoski (2009). In his account, knowledge of our biological and cultural evolution serves the determination of the most important features of human nature. Nature decoded thereby is compared to the concept of nature described in the most popular philosophical-political theories. As those theories usually include some factual assumptions (e.g. on the deemed human nature) and some normative judgments (e.g. on the most demanded content of social order) which are usually compliant with one another, the most accurate normative judgements are those made by the theory that is most consistent with the evolutionarily shaped human nature.

⁸ Cit. after Załoski (2018, 63).

It is indeed true, that various philosophical-political theories imply a certain system of values which are promoted within such a theory. It is also true that we can learn a lot about our nature (defined after Załuski as the dominant moral motive and the way of conduct) by studying human evolution and prevailing daily practices. What may raise doubts is whether nature defined in this way exists and if it is stable enough to let us derive any conclusive views as to how would it look like in the foreseeable future, and if it is possible to derive any normative implications from such knowledge of that nature. Załuski claims that both questions should be answered positively. In reference to the former, there are accounts, rejected by the author, e.g., the so-called standard model of social science which claims that no such thing as stable human nature exists. Humans are more accurately modelled, as born *tabula rasa*, which is later shaped during an agent's path of life under environmental and cultural impact. This account, however, contradicts our evolutionary knowledge as well as contemporary empirical studies which broadly confirm that humans indeed reveal very repeatable patterns of behaviour. In Załuski's terms, they are narrowly altruistic (kin and reciprocal altruism is commonly observed) and imperfectly prudent. If we agree on the existence of human nature, to combine this notion with normative judgments, theoretically there are three stances possible. The weak version agrees that the correct recognition of human nature is necessary for an effective introduction of any social policy, but it gives up searching for any ultimate goals of the law. The weaker and more general version also agrees that the ultimate goal cannot be derived from human nature, but its recognition has an impact on social practices. The strongest version (supported by the author) goes furthest and claims that stable human nature determines the goals of the law by the philosophical-political theory consistent with it and supported by it. Such a theory usually has two components which should be compatible with one another. These are the concept of human nature and the set of value judgements. If the concept of human nature embedded in the theory coincides with the knowledge constructed on the basis of the evolutionary approach and empirical studies, we have strong reasons to believe that the embedded value judgments are also sound. In the conclusions, Załuski notes that the narrowly altruistic and imperfectly prudent human nature can hardly be compliant with communism, anarchism, conservatism, and libertarianism but does not contradict liberalism and (to a lesser degree) socialism.

Do we really have reasons to assume that human nature does resemble the one pictured above by Załuski? Although his remarks are supported by some empirical studies, especially those investigating the contemporary patterns of human behaviour, there are also significant grounds to question them. Those patterns are not stable enough, and they seem to evolve even in the historical period. This observation was raised by several authors studying the evolution of human culture and its impact on our behavioural patterns (Richerson and Boyd 2005). Particularly interesting are the studies on the declining propensity towards violence in societies which coincide with the studies on cooperation in larger societies. This somehow counterintuitive and surprising conclusion was among others expounded by social and evolutionary psychologist, Steven Pinker (2011). Pinker's starting point is that our neurobiological mechanisms make us far from being gentle or friendly towards

each other. On the contrary, our “hardware” is rather programmed to various forms of violence. Paradoxically, even those cooperative dispositions, which are recognised by Załuski as features supporting collaboration in society and the creation of legal order, may be responsible for ideological subordination and violent intergroup rivalry. Kin and reciprocal altruism do strengthen social ties but within ideological groups, thus making them more inclined to aggression towards other groups.⁹ Pinker also notes that we are equipped with some mechanisms (both biological and social) which let us tame our natural tendency towards aggression. These are empathy (bound with our narrow altruism), self-control, moral sense (in Załuski’s terms: personal and moral autonomy) and intelligence. It is worth noting that some of these features may be responsible both for aggression and its curbing as it is in the case of the above-mentioned cooperative dispositions fuelled by empathy, or moral sense which may steer our behaviour to “justified” but violent revenge. Given such a complex picture of several counteractive mechanisms, the real question is not about the stable features of human nature but rather why the latter, responsible for curbing violence, has prevailed since the fact that they prevail is broadly confirmed by thorough and numerous empirical studies. After analysing some candidates for the explanation and rejecting the implausible ones (like genotype evolution in recent years), he proposes five causes, all of them of cultural character. In the first place, he puts Leviathan, i.e. the organised state and its institutions. This state’s priority strongly resembles the account of Hobbes, rejected by Załuski. The second factor is the development of commerce which forces merchants to take the position of their customers if they want to cut any deal with them and thus it strengthens cooperative behaviour. In giving primacy to commerce, Pinker is not alone. He subscribes himself to the Austrian school of economics and its successors. Many of the contemporary studies on human evolution which aim at explaining our dominance over other humanoids also point to human propensity to exchange goods, even among very distant tribes. The third factor is feminisation which curbs the harmful impact of testosterone and male rivalry. The fourth is the extending circle of sympathy. In order to break through the narrow, family or tribal empathy, we need to frequently meet strangers in peaceful circumstances, talk to them and get more familiar with their perspective and emotions. This process accelerated with the growing geographical and social mobility, and with widening literacy and the custom of reading books and stories coming from various parts of the world and cultures. This is directly connected to the last factor, “the escalator of reason.” Although analytical, cognitive systems are used for many forms of violence, in the end, the reason is more likely to tame it. Reason means more self-control and higher intelligence, both interdependent. Since psychologists have started to measure intelligence, they noticed the so-called Flynn effect – an observed increase of IQ in each generation. This strengthens the pacifying impact of reason. More intelligent people are inclined

⁹This evolutionary ambivalence of human nature has also been noted by Załuski in his later works. See Załuski (2018).

to offer collaboration instead of instrumental violence; they are more liberal, agreeable for group decision-making and constructive, gentle discourse.

Pinker's particular theses have been criticised by many academics from a different perspective. However, at least two of them seem to be somewhat untouched: the complex picture of human nature, rather biologically predisposed to violence than to friendly co-operation; and the changing patterns of human behaviours over the centuries. Both theses undermine Załuski's optimistic view. Clearly, it is the other way around. The moral and legal order is not a simple extension of our biological predispositions but rather helps us to curb them. And our nature observed statistically in repeatable patterns of behaviour is an effect of a subtle game between several counteractive biological mechanisms and social environment while both factors act interdependently. The same picture is drawn by several, evolutionary oriented cultural anthropologists like Richerson, Boyd and Henrich. They discovered, among others, the particular mechanism of co-evolution of genes and culture which was responsible for shaping the human social instinct, which further gave rise to large, modern cooperative societies. Through the so-called "moralistic punishment" this evolutionary dance may gradually eliminate non-cooperative agents and thus modify our, statistically defined human nature. In the end, it seems that Załuski's concept does not provide us with a plausible solution to the normative problem.

10.4 Neglected Cultural Evolution and the Emergence of the Normative Order

Załuski's attempt to construct a unified philosophy of law based on our evolutionary shaped propensities is not the only one. If we initially agree that the normative order, within which the normative problem is posed and answered is *per se* an evolutionary phenomenon, which is somehow shaped by an agent's propensities, but even more by the influence of the prevailing culture, it still seems promising to track down the mechanism of its emergence. The comprehensive knowledge of this past mechanism may give us a hint about the future normative problem solution. Several theories were proposed to that effect. The most prominent were offered by Hayek, Quine and nowadays by Churchland, Boyd and Richerson. There are some differences among them but what they have in common is the bottom-up approach, spontaneity of the behavioural patterns emergence (driven by random forces like cultural mutation and cultural drift¹⁰), group selection mechanism (especially in Hayekian theory¹¹) and thus the strong influence of culture and evolutionary pressure in the form of natural and sexual selection. In contemporary social sciences, the most comprehensive picture is drawn by Richerson and Boyd (2005) and in the philosophy of law by Brożek (2016), who widely exploits Tomasello's (1999) account. The

¹⁰ Richerson and Boyd (2005, loc. 977).

¹¹ Hayek (1983).

common element in those accounts is an emphasis placed on culture, as the main normative-order-creating factor and the use of mathematical modelling which strengthens the presented arguments. Culture is understood as:

...information capable of affecting individuals' behaviour that they acquire from other members of their species through teaching, imitation and other forms of social transmission. (Richerson and Boyd 2005, loc.105)

Culture includes instructions or imperatives, which are cultural variants transmittable between agents, societies and generations. Those variants are subject to three categories of cultural evolutionary forces.

1. Random forces, which are on the agent's level, cultural mutations, and on the group level, a cultural drift.
2. Decision making forces, which by their nature are more consciously chosen by an agent, and consist of the guided variation (emulation) and biased transmission (cultural variants imitated from others due to their deemed effectiveness).
3. Natural selection, which is based on an unbiased transmission (cultural variants imitated naturally from parents and close relatives) and changes in the composition of a population, due to sexual selection and elimination of unfit agents.

Culture in general is a powerful evolutionary adaptation and cultural variants and genes co-evolve. However it may be, and sometimes indeed is maladaptive. Cultural evolution and the spread of cultural variants within a population can be tracked down and modelled by the Darwinian analysis, which means the extensive use of genetic algorithm and agent-based modelling.

A genetic algorithm was initially developed in informatics and mathematics to improve problem-solving tools. It resembles an algorithm which steers biological evolution and it assumes that if evolution is so good at solving an adaptation problem, similar instructions to solve less sophisticated technological problems should be used. However, besides solving problems, the genetic algorithms disclosed one more side-effect. It enhanced our understanding of the actual evolutionary process by creating an opportunity to simulate them and observe results depending on different values of variables applied.

How does a genetic algorithm work then? Like its evolutionary model, it makes use of similar terminology, namely population, chromosome, mutation, crossing over and offspring, and consists of several consecutive steps (Mitchell 1999, 308).

1. We start with a randomly generated population of n *l-bit* chromosomes (candidate solution to a problem), then
2. Calculate the fitness $f(x)$ of each chromosome x in the population.
3. Repeat the following steps until n offspring have been created:
 - (a) Select a pair of parent chromosomes – probability of selection being an increasing function of fitness.
 - (b) Cross over the pair at a randomly chosen point to form two offspring.
 - (c) Mutate the two offspring at each locus with probability p_m and place the resulting chromosomes in the population.

- (d) Replace the current population with the new one.
- (e) Go to step a.

In the search for an ultimate goal, the second step seems to be most interesting. It assumes that in each task we have a predetermined fitness function which enables us to calculate the results which we intend to achieve and which we value as the most desirable. The functioning of the algorithm and the direction in which chromosomes evolve are subordinated to the value of the fitness function. If by analogy, we apply the same mechanism to human evolution, the search for an ultimate goal turns into a search for a proper fitness function and its optimum value. However, is it possible to predetermine it in a natural environment? In the simplified model above, the function is exogenous. In models imitating natural evolution, it must be endogenous, and it evolves depending on the initially embedded genome, the changing environment, and an increase in the population, and the last element is crucial. The more numerous are the carriers of a particular chromosome; the more likely this chromosome is to spread within the population. And *vice versa*, the more likely the chromosome is to contribute to the expansion of the population, the more likely it is to survive, spread, and represent the searched value of the fitness function. The changing environment complicates the whole story. The optimum value should remain optimum both in short and in the longer term. So, the sought chromosome is required not only to be stable but also flexible enough so that in the long term, the survival of the population is not threatened. If we anchor our reasoning in the fact that they were cultural changes which shaped our behavioural patterns to form a full-blooded legal order rather than our genome and, that it is a population as a whole which may determine the value of a fitness function rather than a particular agent's predispositions, it will lead us to the concept of cultural evolution through group selection.

The Hayekian theory was one of the first accounts based on the group selection mechanism, also referred to by Zaluski. According to Hayek, controversial group selection is responsible for cultural evolution. Certain traits/patterns of behaviour could have evolved because they increased the fitness of the group, even if they decreased the fitness of an agent. The group is more fit if its chances of survival rise in a confrontation with other groups. However, there is no unique, distinguishable carrier of a cultural trait (memes). Traits can spread within the group (and be transmitted to other groups) in two ways. The first is an imitation. It makes cultural evolution Lamarckian by its nature, and not Darwinian. The second is sexual selection – the desired traits are more often chosen by sexual partners, which makes them more likely to be spread within the population. This would work if we accepted the concept of genetic group selection so that certain genetically encoded traits, which are not adaptive for an agent but adaptive for the whole group, may nevertheless spread in the way described above and dominate other traits. Excluding the very exceptional example of human lactose tolerance, no other case of genetic group selection has been recorded so far. That is why the account is controversial.¹²

¹² See for example Price (2011).

However, it is commonly accepted that learned skills may indeed be under evolutionary pressure connected with the group selection mechanism.¹³ If so, the account is not complete. Darwinian evolution, which is the only one admitted as a scientific theory, does not allow the skills learned by phenotype over its lifetime to be passed on to the next generation. How is it possible then?

The first person to suggest a plausible answer was James Mark Baldwin, who in 1896 published a paper on the possible passing on of specific learned skills to the next generation. It is not the particular skills that are passed on but rather the cognitive flexibility of an agent (the trait which is genetically determined), which enhanced strongly an agent's ability to learn those skills during its lifetime. Those who are more gifted and learn quicker, live longer and are more likely to have more offspring, which explains the rapid spread of this cognitive ability in the population. Those abilities according to Brożek (2016) (and Tomasello, whose works he refers to) are imitation and emulation. Imitation means an elementary form of copying the behaviour of others, according to the rule "do what I do" without reflecting on the purpose of conduct. Emulation is more like the process of learning. It cannot be reduced to imitating other agents, but it requires awareness of the ultimate end of the process. I learn not to know but to achieve a certain, predetermined, ultimate goal. It means that with the use of my intelligence, I do not restrict myself to imitate others, but I am consciously able to decline in some points from the observed patterns and steer my behaviour towards the previously identified goal. The significant contribution of Tomasello is that he found out that whereas imitation is broadly observed among mammals, especially primates, emulation is specific for humans. But imitation also has some specifically human peculiarities. Although primates can imitate others like humans, it seems that their propensity to imitate is significantly weaker. As Brożek puts it, "(...) their tendency to imitate is limited in comparison to human eagerness to copy others. We do indeed 'out-ape' the apes, but not because they have no skill for aping – they lack the tendency" (Brożek 2016, 670). From this point on, Brożek's account significantly supplements the Baldwin effect. Referring to one of the simulation models of Boyd and Richerson, he claims that these two uniquely human features are the foundation for any, even very primitive, form of culture, a part of which is a normative order. "It transpires that in such a setting there exists 'the evolutionary equilibrium amount of imitation', from which both learning-prone and imitation-prone individuals benefit, so that the population as a whole has a higher average fitness than a population consisting solely of learners, or a population in which there are only "pure" learners and imitators. They further observe that "imitation may increase the average fitness of learners by allowing learned improvements to accumulate from one generation to the next" (Brożek 2016, 705). Most importantly, imitation is a culture-creating mechanism – it enables the transmission of behavioural patterns from generation to generation, thus allowing the accumulation of knowledge, smooth adaptation of existing cultural tools, the recombination

¹³ See Richerson et al. (2016), where authors presented the set of arguments for cultural group selection being an essential mechanism in human evolution contributing among others to emergence and development of cooperation among humans.

of means and ends, as well as the emergence of fine-grained ways of conduct (Brożek 2016, 740). The essential element in this picture that should be added is that both learned skills inheritance paths (i.e., imitation and emulation) do not act evenly within the population. Some of the agents are more likely to be imitated or to be learned from. First and foremost, they are parents and close relatives.¹⁴ Secondly, the outstanding individuals perceived as successful according to the commonly accepted standards¹⁵ and, thirdly, others, while our propensity to imitate them declines with the increasing cultural distance, language being one of its most important indicators.¹⁶ The author further draws before the reader the possible path from imitation and emulation through the emergence of rudimentary rules and their consecutive transformation into fully-grained abstract rules, expressed in a language; complex, modal and endowed with the justificatory power. From the subject issue of this paper, it is worth noting that the searched ultimate goal, the solution for the normative problem is always embedded in the abstract rules and thus, in the extended social order. To ponder over humans' desired destination, we need a language, modality and justification. Rudimentary rules do not need any predetermined ultimate end, or at least an agent does not need to be aware of it.

As we have some plausible hypothesis on the learned skills transmission mechanism, we may go back to the Baldwin effect and its possible simulation in models based on a genetic algorithm. Evolutionary Reinforcement Learning (ERL) model designed by Ackley and Littman (1992) is a simple one, but it includes all the essential components of cultural evolution. Agents in the model move through a two-dimensional space. As in the natural environment, they forage food, may encounter a predator and hide from it. They dispose of a certain amount of energy, which is consumed and partially recovered during their lifetime. Exhaustion of energy means an agent's termination. Their key equipment is two neuronal networks: one is responsible for the evaluation of the given state, whether it is good or harmful for an agent (evaluation network), and the other one is responsible for the undertaken action (action network). The first network may be interpreted as a surrogate of simple normative judgment. The architecture of the network is identical for each agent, but it differs in weights. As a consequence, they value their states differently. The genetically encoded chromosome determines the evaluation network and thus is subject to the consecutive steps of the genetic algorithm (mutation, cross-over, multiplication, selection, and replacement) and invariant during the lifetime. In contrast, the action network is subject to a learning process and thus could be modified during the lifetime. An agent learns to act in ways that lead to "better" states. "Better" means the initially inborn evaluation, then modified according to the survival rate.

¹⁴This effect is very well recognised and confirmed by several experimental studies. It is referred to by Longman (2004). See also Palmer and Steadman (1997). In Poland, research was among others conducted by Brzozowski (1988), Wołoskiuk (2010) and Elżanowska (2012).

¹⁵See Henrich (2004), Henrich and Boyd (1998), Henrich and Gil-White (2001).

¹⁶Boyd calls this unbiased and biased transmission and they both, together with natural selection, constitute the three model factors responsible for spread and prevalence of cultural traits. Richerson and Boyd (2005, loc. 935).

What is most important, no exogenous fitness function is given for evaluating the genome. Fitness is endogenous; it emerges from many actions and interactions (and evolves). It means that no ultimate end is given from the outside. The measured parameter is the time of survival of the given population before it becomes extinct. It depends on the following initial settings: evolution plus learning (ERL), evolution alone (E), learning alone (L), (so that the evolutionary mechanisms of mutation, cross-over, multiplication, selection, and replacement are excluded), fixed weights chosen randomly (F) and random walk through the matrix, (i.e., ignoring the information from the environment) (B). The extension of the population and its survival time gives us some basic information on which setting is the most effective one and what combination of the value judgements (evaluation network) and learnt skills (action network) is the most adaptive and stable, and thus whether we may draw any conclusions on the possible ultimate goal, the ultimate system of value judgements for the initial population. After several iterations, Ackley and Littman were able to summarise their results. ERL did much better than evolution alone (E) and slightly better than learning alone (L). Fixed weights worked worst, even worse than random walk (B). “It is easier to generate a good evaluation function than a good action function” (Richerson and Boyd 2005, loc. 427). It is easier to specify useful goals (encoded in the evaluation network) than useful ways of accomplishing them or, in other words, the evolutionary mechanism works well at choosing the best value judgments but cannot cope effectively with selecting the appropriate means to accomplish these values. Working out an effective *modus operandi* requires the engagement of a learning process. The second part of the simulation additionally supported this interpretation. Both scientists decided to search for the so-called functionally constrained parts of a chromosome. The underlying concept is that in nature those parts of the genome which are subject to the least changes through generations are supposed to be the most functionally constrained ones, which means that they are most likely to be strongly adaptive. To check which parts could those be in the model, they extended the lifespan of the population to almost 9 million generations. It occurred that genes responsible for encoding the evaluation network reveals a low level of variation during the first 600,000 generations until the chromosome reaches the optimum pattern for the action network. Then this setting becomes more functionally constrained, loosening the constraints on the evaluation network. So it seems to be more important for shaping the proper ability for an agent’s current state evaluation in the early stages of the population’s evolution, which is necessary to strengthen the learning ability. Stable goals are crucial for survival. However, later on, when proper modes of action begin to be genetically encoded, value judgments play a less critical role.

If this simulation correctly imitates the milestones of natural biological and cultural human evolution, we may suspect that patterns of our behaviours are more important for our survival than value judgments including judgments on ultimate end, assuming the early stages of our evolution are behind us. It somehow coincides with the observation that the very foundational principles of human behaviours indeed remain invariant throughout the very distant cultures while the system of abstract rules (moral and legal), often involving deeper value judgments,

presupposed ultimate human goals and its justification, differs significantly even within the same cultures and geographical areas.

Let us now consider the following conclusions which may be derived from the preceding passages. I have summed them up below being fully aware that they are intuitions or plausible guesses rather than a proven thesis. However, if they were correct, we might draw up the following picture:

1. Human nature, defined as a dominated moral motive and typical way of conduct, is hardly definable independently of time and place. Contrary to Lock and Żaluski, it seems to be relatively unstable and variable throughout generations, and its underlying biological mechanism inclines us rather towards violence and aggression than to co-operation (which unfortunately supports the dismal picture drawn up by Hobbes).
2. The evolutionary mechanism has no fitness function. The spread of particular traits within the population is subordinated to its expansion and the strength of imitation and emulation or biased and unbiased transmission. In case of behavioural patterns transmitted through imitation and emulation, the expansion of the particular population (symbolically marked groups¹⁷) seems to be a stronger factor as we are more inclined to imitate our close relatives (unbiased transmission), and the spread of group-beneficial beliefs is twice as quick within the group as from one group to another (Richerson and Boyd 2005, loc. 2865).
3. Rudimentary rules and abstract rules may correspond to the action network and evaluation network in the Ackley and Littman model. The former is crucial for survival, the latter is less functionally constrained, at least after the adaptive patterns of behaviour are preserved enough.
4. Both create social orders at different levels. Abstract rules with their justificatory power include value judgments, and among them the desired postulates regarding ultimate goals.
5. Both social orders of different levels may interact with one another. Rudimentary rules give rise to abstract rules, but it goes the other way around, too. An extended order (system of abstract rules) may act in our way of conduct (rudimentary rules), thus causing, for example, the observed decline of violence.

The outlined picture gives us a relatively comprehensive (although necessarily simplified) image of the possible evolutionary origin of human normative order. It provides us also with suppositions for where to look for the ultimate end value judgments and the main factors shaping them. At the first stage, they must be genetically encoded and functionally constrained, but in the pace of a species' further development, they become less constrained, and their impact on our behaviour weakens, being reduced to interactions on the social order levels. In other words, we may have very different ideas on what is and what is not good for us, or where we should head (namely, very different value judgements), but the essential patterns of our behaviour remain relatively unchanged. It does not exclude possible changes, even

¹⁷ See Richerson and Boyd (2005, loc. 2865).

commonly spread, but as they are caused mainly by the system of abstract rules and corresponding extended order, their causal power is more vague and subtle, yet it may also create certain observable trends such as the decline in violence.

10.5 The Pursuit of Wellbeing May Be Maladaptive

There are two significant consequences of the models presented above. Firstly, the value judgement and especially the determination of the ultimate end may be of less relevance to the evolutionary success of human species than we might have thought. What counts are our behavioural patterns, which at a certain stage of the species' development are weakly dependent on value judgements. The significant part of them may be of no relevance to our behavioural patterns. They may play a role of necessary chromosome mutations, while most of them have no significant impact on the phenotype or, even if they have, they may be maladaptive, and they may terminate. Secondly, the solution to the normative problem is not reducible to the search for the proper fitness function. In other words, evolution (both biological and cultural) is directionless. Any sort of 'social Darwinism', 'functionalism', 'evolutionary ethics' or 'minimum content of law' is bound to fail, especially if it is primarily dictated by the survival and wellbeing of an individual agent. The spread of behavioural patterns seems to be more strongly subordinated to the expansion of the population. Patterns which are more likely to contribute to that expansion are more probable to spread. If at the end some of them reveal any causal power, the "survival rate" is stronger among those contributing to the population's increase than those that contribute to the agent's wellbeing. This is one of the most important discoveries in evolutionary biology and the unexpected consequence of the population's thinking. Early evolutionary biologists thought that it was the survival and fitness of an individual that counts the most, but further research reveals that selection favours traits that increase the reproductive success of individuals and not their fitness. The same refers to cultural evolution and the emergence and diffusion of a particular normative order.

Biased transmission depends on what is going on in the brains of imitators, but in most forms of natural selection, the fitness of different genes depends on their effect on survival and reproduction independent of human desires, choices and preferences. (Richerson and Boyd 2005, loc.1106)

This slightly counter-intuitive effect of evolution may, for example, explain the surprising spread of Christianity in the Roman Empire, despite the tough and puritan ethic which clashed with Roman promiscuity (Załuski 2012). It may also occur that subordination of women, which is still the case in some Islamic states, will have a higher survival rate only if it implies higher birth rates (which is plausible), despite strongly negative ethical connotations. It may at the end occur that the pursuit of wellbeing or individual happiness, which has been commonly preached recently, is counter expansive (maladaptive) if the pursuit of wellbeing or happiness merely

means pursuit of comfort and avoidance of unpleasant and disturbing circumstances like childcare. This is precisely the kind of explanation offered by Richerson and Boyd of the surprisingly low fertility rate in western civilisation. However, for them, the reason does not lie primarily in the pursuit of comfort but rather in the maladaptive patterns (or as they name it, cultural variants). Biologists know that evolution is not a perfect process which always leads the species to maximise their fitness, but on the contrary, it is full of errors and maladaptive traits. A genetic algorithm is not able to eliminate those traits, especially when the same trait carries both adaptive and maladaptive functions. The often-invoked example is the peacock's tail. Its size is at the same time a visible sign of strength and health of its carrier, which makes it an attractive mate, and an obstacle when it comes to escaping predators, which puts its carrier at risk of premature termination. However, sexual selection seems to be a stronger factor so far, as males with a bigger tail have more offspring before they fall prey to the predator. Boyd and Richerson constructed a similar argument in reference to the so-called prestige bias. In principle, culture and specifically biased transmission of the cultural variants is very adaptive, as it helps us to work out and sustain the skills which are crucial for our survival, and it does it in a much shorter term than genes evolution would have done it otherwise. As it has already been demonstrated in the model mentioned above, a certain level of imitation of other people, especially our parents and prestigious members of society, is required to sustain the culture and to spread the cultural variants which contributed to the success of the prestigious ones. On the other hand, those who are commonly perceived as prestigious in a modern western culture very often reveals the "selfish cultural variant". It is quite obvious when we consider who the people are whom we perceive as successful. At least from the beginning of the industrial revolution, they are rich merchants and entrepreneurs, highly paid professionals, popular artists and scientists. To reach their social position they needed to sacrifice much of their time and resources for education and professional training. Those who follow them, but are not equally talented or endowed, need to sacrifice even more. High status also needs to be socially marked. In modern societies, those markers are often expensive toys and hobbies. On the other hand, childcare is costly and extremely time-consuming. Prestige bias forces drive us away from those costs. It is especially true for women. The deepest fall in the fertility rate is strongly correlated with their access to education.¹⁸ The "runaway" cultural evolution is thus accelerated by the universal education and development of mass-media which "suddenly exposed people to much more non-parental culture influence than had been experienced in more traditional societies".¹⁹ It is worth noting that this non-parental culture is at the same time the culture promoting individual wellbeing, understood as preference satisfaction and the pursuit of individual happiness, which happens to be the necessary components of rapidly spreading "selfish cultural variant", apparently maladaptive.

¹⁸ See Richerson and Boyd (2005, loc. 2467) and Newson and Richerson (2009).

¹⁹ Richerson and Boyd (2005, loc. 2365).

10.6 Concluding Remarks: Threefold Undecidability of the Normative Problem

Does it mean that humans will become extinct? Does it mean that the concept of wellbeing is nothing but a dangerous maladaptation which at a certain stage of our cultural evolution brought us some individual comfort but in the longer term may drive us to extinction? The truth is that no one knows. But we cannot exclude such a hypothesis. It seems that the normative problem is undecidable regarding the naturalistic approach for at least three independent reasons.

1. Naturalistic ontology does not overcome the “naturalistic fallacy” indicated by Hume and Moore. Even if we adopt the modest naturalistic programme and consequently assume certain indisputable norms as axioms (like the discussed concept of wellbeing), we instantly encounter three unsolvable problems:
 - (a) According to the modest naturalistic programme, axioms are not created in the value-judgement vacuum and do not reflect our, indisputable human or divine intuition. They are constructed bottom-up, by numerous, previously resolved normative problems, solutions of which were subsequently evolutionarily tested. Axioms are generalisations reflecting our multigenerational knowledge and seem to be a more useful tool for solving daily normative problems than somehow privileged, higher-level rules.
 - (b) The causal power of those axioms is doubtful. As Litman and Ackley’s model shows, the higher-level value judgements, which are crucial at the early stages of species’ evolution as they determine the behavioural patterns, soon after those patterns are genetically encoded, become less functionally constrained. At least some of them may serve as useful rationalisations of our behaviour, without having any real impact on them.
 - (c) If some of those axioms reveal some causal power, the development of the social order according to them and according to the principles determined by the genetic algorithm may occur to be evolutionarily counterproductive, as Boyd and Richerson’s model on fertility rate decline shows.
2. The epistemological perspectives in the naturalistic account are confused. Different normative postulates can be formulated from the individual’s perspective and the perspective of the referential group. What seems to benefit an agent, needs not to be beneficial for the population, and the other way around, what is beneficial for the population, needs not to benefit an agent. As the endogenous fitness function seems to privilege the population, traits which are beneficial exclusively for agents and do not contribute to the genetical success may be condemned to extinction. The concept of wellbeing may represent such a trait.
3. The genetic algorithm with an endogenous fitness function seems not to be susceptible to “mathematical close-up”. Even if we know the initial normative order, there are limits to finding a shortcut in order to predict the future value of the fitness function. In other words, the predictability of the future social order is

fundamentally restricted. Models based on the genetic algorithm are by their nature very complicated, but at the same time, they are an enormous simplification of the actual environment and forces acting behind it. They help us to understand certain mechanisms and trends but will not reveal to us the future state of society and especially the future evolutionary solution to the normative problem.

The third point is especially the direct reason for the undecidability of the normative problem, the reason why we cannot determine if the concept of wellbeing is an example of the maladaptive trait condemned to extinction. There are many scenarios possible. Extinction is one of them. Richerson and Boyd point to particular orthodox groups like Methodists and Amish in the USA, who have been able to cut themselves off from the access to the modern mass-media and thus weaken the biased transmission and cultivate their traditional family and religious values, which implies high fertility rate. Wellbeing, especially one that is understood in monetary terms, is definitely not their ultimate end. They are slowly growing in numbers. On the other side of the social structure, we have the growing model of lonely parenting. The fertility rate among those who apply this model is not very high but at least close to the natural replacement rate. It may be that a certain equilibrium between the counter-acting processes like the spread of selfish cultural variant, fertility rate and natural selection will be reached in the longer term. Finally, there is the problem of “estimating the strength of various effects on the trajectory of evolution”.²⁰ There seem to be natural and robust reasons to reject moral Darwinism. As the fitness function does not exist, and the interdependence between the different social orders is multi-causal, any possible value of adaptiveness is untractable.

Taking into account the above-outlined picture of the possible origin of the normative social order and the remarks on its potential consequences, it seems that in our search of the ultimate end, we are within a vicious circle with no way out. It appears that we are condemned to accept the fact that the ultimate end problem is undecidable, at least within the evolutionary knowledge.

Not everything is lost, however. At least, following the “modest naturalistic program” we may form a couple of reasonable postulates:

1. In social sciences (including normative economics) “nothing makes sense except in the light of evolution”. Darwinian analysis and populational thinking should be an integral part of those sciences. Commonsensical truths, which are taken for granted are nothing more than cultural variants which may and should be analysed in terms of their adaptiveness (welfare, happiness, success, pleasure and like).
2. Predictability of the possible consequences followed by the adoption of certain cultural variants is limited but not entirely excluded. Big data collection and agent-based models combined with the Darwinian analysis may help draw possible scenarios and be informative for societies and policymakers.

²⁰ Richerson and Boyd (2005, loc. 3486).

3. If moral axioms have a weaker impact on our behavioural patterns (which can be the subject of possible, future empirical studies), than we have suspected, their relaxation may not constitute a real danger for social cohesion. And if they play a role of necessary cultural mutations, wherefrom both adaptive and maladaptive patterns may emerge, which will be naturally tested and observed, their diversity may be desirable, but only from the particular point of view, namely the survival and further expansion of the human population. This could be interpreted as an argument for a liberal and open society and value pluralism, as it used to be promoted by K.R. Popper (2013) and I. Berlin (2002).

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