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2016

This article can be cited as: David Howden and Joakim Kämpe. 2016. "Time Preference and the Process of Civilization." *International Journal of Social Economics* 43(4): 382-99.

It is available for download at: http://www.emeraldinsight.com/doi/pdfplus/10.1108/IJSE-04-2014-0067

# Time Preference and the Process of Civilization[1]

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**Abstract**: We begin with an admittedly simplistic statement: "civilization" is best represented by the increased availability of utility providing goods and services. In other words, civilization is synonymous with economic development. This paper concerns three questions. First, how does civilization develop? Second, what is time preference and how does it affect the development of civilization, or what we may call the "process of civilization." Third, what factors affect time preference, and how do changes in time preference affect this civilizing process? Through these three questions, we provide the theoretical *why* civilization developed, instead of the more common historical *how* civilization actually developed.

JEL Codes: O12; O19

[1] Acknowledgements to be added…

# Time Preference and the Process of Civilization

## 1 Introduction

How civilization developed is a common question with many ambiguous, location-dependent, or time-dependent theories. McNeill (1963) stressed the importance of communication networks, especially via sea, in expanding the trade relationships ("foreign stimuli") that fostered the process of civilization. In his pioneering work in Figurational Sociology, Elias (1969-82) attributed the historical developments of civilization to alterations to the then-prevailing social attitudes. As thresholds for shame and repugnance were altered, whether endogenously through more interconnected social relations or exogenously through an increasingly centralized state presence, attitudes towards what are now regarded as anti-social norms (e.g., regarding violence, sexual behavior, table manners, speech, etc.) were altered to usher in an increasingly civilized society. Proponents of the world-systems analysis approach to civilization see the macro-development of the world as a result of increasing division of labor, dividing the world broadly into core and periphery countries and allowing the core countries to focus on high-skilled and intensive productive enterprises (Wallerstein 1974-2011).

In a similar vein, Collingwood (1942: esp. part III) relates the development of civilization to the forming of stronger communities by way of a shared collective experience (p. 283). More to the point, as any conception of "civilization" must involve some ideal state, it is a process of the mind dependent on the social norms defining the construct. Indeed, even if such an ideal state involves notions of humans being able to satiate all the material "needs" they desire from the natural world, the state of civility will still be a mental construct as such "needs" are themselves not nature-given but results of the

mind (p. 294). Ultimately all betterments to civilization must stem from a combination of two (or three) factors: the process through which individuals in the community resort less to force with each other (i.e., form a stronger collective), the process through which the community harnesses its ability to obtain the necessaries and luxuries it demands from the natural world (i.e., satiates its needs, however defined, better), and finally, the process of accepting outsiders of the community as insiders entitled to the same aforementioned civilities (i.e., opening up the resultant civility to those unexposed to it).

Economic science treats the question of how civilization develops in more material terms than the two aforementioned approaches. New Institutional Economics takes the view that instead of being merely periphery to economic development, the quality of institutions – economic, political, judicial, etc. – is central to explaining divergent growth rates in various civilizations (North 1981, 1990). Although answering "how" civilization developed is important, it masks the initial civilizing spark in place of some proximate results. [2]

One novel approach to the question of "why civilization developed" looks to the concept of "time preference" – the ability to renunciate present want satisfaction in lieu of a greater amount of future want satisfaction. We augment this sparse literature on the influence of time preference on development in two ways.

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[2] Most theories as to *how* civilization developed are relatively recent contributions. The historical emphasis was on explaining how some civilizations stagnated and entered periods of decivilization. Khaldun (1377) focused on barbarian invasions; Gibbon (1776-89) attributed the decline and fall of the Roman Empire to internal decay, artificially supported by exploitive conquests; Spengler (1922) similarly focused on mature civilizations naturally turning to imperialistic plutocracies unable to sustain their overreaching ventures; Toynbee (1934-61) viewed the cultural "elite" that initially civilized a society as being responsible for its downfall when they became a parasitic "elite." More recently Diamond (2005) has suggested that civilizations decay due to environmental damage caused by overexpansion, climate change making the civilization unsuitable for its new natural world, an overdependence on long-distance trade to sustain the domestic populations increased demands, increasing levels of violence (e.g., war), and erroneous responses that try to rectify these aforementioned problems.

First, we outline how time preference gives rise to the "process of civilization." This process is broadly defined as the accumulation of productive goods giving rise to a general increase in productivity that allows for either: 1) increased leisure time to maintain the same quality and quantity of life, or 2) an increased quality and quantity of life from the same amount of labor. These results are important as theories of civilization define it implicitly in terms of greater amount of want-satisfying goods or a greater amount of leisure time to contemplate concerns in life beyond the superficial physical world ("self-actualization" to borrow Maslow´s (1943) term). Increased productivity encourages both.

Second, we enumerate the factors that affect time preference rates – both for the individual and for society at large. Economic, juridical and moral institutions all function to decrease our time preference schedules, thus allowing for advancements in the process of civilization. We also show that these institutions can negatively affect our time preference by increasing it, and thus retard this same process of civilization.

Finally, as a consequence of the theoretical foundation that time preference provides for the process of civilization, we are in a position to answer the question of *how* civilization develops. While one defining characteristic of the civilized society over its uncivilized counterpart is the availability of labor-saving devices that increase our productivity and thus, our quality and quantity of life, we see that this development can only be made through continual investment. In turn, this investment in the more developed future depends on savings in the present, which are in turn only possible through a lowering of one's time preference. The institutional factors discussed enable us to provide the micro-foundations to answer the common question of *how* it is that society civilizes itself.

## 2 The Process of Civilization

What properly constitutes a "civilization" is as contested as the process by which it comes about. Traditional views on what is, exactly, a civilization have rested on the vague notion of advanced cultures in contrast to primitive ones (Wright 2004). In more concrete renditions, "advanced cultures" are given attributes such as a separation or domination over the natural world (Fernandez Armesto 2001), domestication of humans or other organisms (Wright 2004), higher or more complex levels of communication (Llobera 2003: 136-37), or an increased ability to live under ever more highly populated conditions, i.e., increased urbanization, as in Haviland *et al* (2008: 250). Alternatively, one may look at more material factors such as an increased specialization through the division of labor (Wright 2004; Haviland *et al*. 2008), large-scale architectural achievements (Llobera 2003), or an ability to pursue geographically expansive ventures, e.g., long-distance travel or trade (Wright 2004).

What all these diverse viewpoints share in common is a reliance, whether explicit or implicit, on material advancements in the amount of want-satisfying goods available. As economic progress occurs so too does "civilization" by way of the increased means available to achieve physical satisfaction or through an increase in leisure time to consider more altruistic or intangible desires.[3] Thus, we accept and start our analysis with the notion

[3] One could claim that a decrease in the pursuit of physical satisfaction (such as monks or pilgrims renunciating the comforts of life) would ameliorate the former condition and allow one to devote full attention to the latter. We downplay this possibility because it occurs in only a seemingly small portion of the population, and also that it is clear that these individuals are unable to renunciate all their physical needs (Hülsmann 2002: 80-81).

of "civilization" as increased material living standards through the mundane process of economic development.[4]

In order to understand how civilization develops, it is instructive to start with the isolated and simple case of a man, Robinson Crusoe, stranded on a deserted island without any tools at his disposal except his bare hands.[5]

To survive and maintain his life, Crusoe must find a means of sustenance in the wild, e.g., berries. Assume he spends 10 hours a day picking berries, which brings him just enough food to survive. Being alone on the island with no ready tools at his disposal, it is all but impossible for him to improve his situation beyond this most primitive stage and he has to live, so to speak, from hand to mouth. Lacking an exogenous influence, he will likely be stuck forever at a subsistence level.

Suppose that after some time on the island he stumbles upon a more abundant field of berries, and now only needs to spend 9 hours a day to meet his survival needs. He now has two choices. Either he can still spend 10 hours a day picking berries, and consume the greater amount of berries, or he can forego the extra consumption and dedicate the extra hour to producing something else, e.g., a stick, that he thinks will further increase the amount of berries he can pick, or, which is the same, reduce the amount of time he has to

[4] One could levy the charge, as one referee did, that we herein claim dominance of the causal thesis that the concept of civilization is the foundation of economic activity, and not vice versa (as would be the case in, e.g., Hobbes' *Leviathan* (1651). As will be shown later, the emergence of both the concepts of civilization (at least, our preferred definition of it) *and* economic activity can be explained by a singular causal factor – time preference, and the ability to forego immediate gratification in the expectation of a greater satisfaction in the future.

[5] Although popularized by Böhm-Bawerk (1959), "Crusoe economics" has been a staple in explaining complex social situations since at least the French philosopher Frédéric Bastiat (1850).

spend picking berries. The restriction on consumption is called *saving* and the creation of the stick, which is a capital good, is called *investment*.[6]

If Crusoe is correct in his expectations, he will be able to pick the necessary amount of berries in a shorter amount of time after the production of the stick (after investing). This will leave more time for other productive purposes and open up new possibilities to improve his living standards further. Alternatively, Crusoe could spend the newly freed time pursuing non-productive but no less satisfying activities, such as appreciating the sunset, bird watching or reading *Treasure Island*. Whether Crusoe spends his time on increasing his productivity to free more time in the future, or to enjoy his time in the present, makes no difference. In both cases he has a greater amount of options available to him from which he can select which will provide the most satisfaction and thus directly or indirectly increase his standard of living. This increase in living standards is what we refer to herein as civilization, and "saving and the resulting accumulation of capital goods are at the beginning of every attempt to improve the material conditions of man; they are the foundation of human civilization" (Mises 1998: 260).

## 3 Time Preference the Process of Civilization

One important factor was omitted from the previous discussion: time. When Crusoe foregoes consumption, he is really foregoing consumption *in the present* in order to be able to consume more *in the future*. In more modern financial terms, we say that when someone

[6] Rothbard (2007: 48) gives a good overview of this process. Strigl (2000: 9, 13,16, and *passim*) analogously refers to a saved supply of berries as the "subsistence fund" – savings that allow for sustenance while investment projects are being completed and a focus can re-shift back to providing consumption goods.

saves in the present, they are really "saving up for something" in the future (Garrison 2001: 40, 62).

There is a further restriction on how much investment can be undertaken in the present. Not only are savings requisite, but with the recognition of mortality Crusoe must realize that time is finite, and must be dealt with just like other scarce means. It is preferable to have a need satisfied sooner rather than later. This relation between satisfaction in the present versus the future is called *time preference*.

Those with very low time preference have very long time horizons, i.e., they don't mind foregoing consumption in the present for even a very small increase in future satisfaction. A typical example of this is the miser, always saving and never spending. However it should be clear that not even in this extreme case is the miser's time preference zero. We know this to be the case, since if it was not so, he would always accumulate and never consume or enjoy. He would not consume today, but he would not consume tomorrow either, and since he at least needs to eat and drink in order to survive his time preference rate will always stay above zero (Mises 1998: 481).

It is time preference that determines an individual's consumption-investment ratio. The lower the rate of time preference, the more will be saved and invested, which in turn will lead to more advanced production processes with a higher degree of productivity. In turn, production and the availability of goods in the present will increase, and, *ceteris paribus*, the marginal utility of present goods will decrease relative to that of future goods (Hoppe 2001: 6). More resources will be saved and invested than in past periods, thus increasing future income. This will result in an even further potential decrease in time

preference. We can call this self-reinforcing spiral "the process of civilization" (Hoppe 2001: 7, 10-12, 74-75, and *passim*).

Before creating the stick, Crusoe managed to pick just enough berries in 9 hours every day to keep him alive, leaving 1 hour every day to pick more berries or invest in a capital good that would increase his future income (measured in berries). He chose to invest in the making of the stick.

When deciding whether he should "invest" in the stick he faced other possibilities. The water around the island was full of fish which would provide a better source of food, but Crusoe can only take advantage of this opportunity with the aid of a net. Crusoe estimates that the creation of the net would take a total of 20 hours of work, whereas searching and locating the proper stick only took 5 hours. In order for Crusoe to create the net, which would provide a more highly valued source of food, he would have to forego a full 20 days of berry consumption, whereas the creation of the stick meant only foregoing 5 days of consumption. That Crusoe produced the stick signifies that Crusoe deemed the 20 hour cost of the net as too high.

Now assume that the creation of the stick allowed Crusoe to pick the same amount of berries that previously took him 9 hours in only 5 hours. He now has 5 hours every day to spend at activities other than berry picking. Assuming that he has to spend one hour every day to keep his stick in an intact condition, the other 4 hours could be spent creating the fish net, which given these new circumstances would now only take 5 days in total.[7] What was previously viewed as being too costly may now become affordable. The good

[7] This time required keeping his stick intact is analogous to depreciation. Crusoe's stick depreciation is thus one hour of work per day, or one stick every 24 days.

that was previously deemed to lie too far in the future and entailed too high a sacrifice is now deemed to be both affordable and desirable. It has moved closer to Crusoe in time, or which is the same thing, his time horizon has been lengthened, and his time preference has been lowered.[8]

## 4 Factors Affecting Time Preference

The process of civilization is a self-reinforcing spiral, whereby saving and investment lead to an increased future income, which in turn lead to a decrease in time preference and an increase in saving and investment. Hence, over time there is an inverse relationship between the real level of income and the rate of social time preference.

### *4.1 Personal factors*

The first factor to affect an individual's time preference is his purely subjective and individual valuations: his preferences. A worrier constantly concerned with the future can be said to have a low time preference. The hedonist living in the moment can be said to have a very high time preference.

### *4.2 Biological factors*

As time is scarce owing to the finite nature of human life, an individual's time preference differs from another's depending on how scarce their remaining life is. Children typically have extremely high rates of time preference, as illustrated by their generally low ability to delay present consumption for a much greater future amount (Mischel's marshmallow

[8] An historical example of this is the steam engine, which actually dates back to the first century AD, however at that time the level of savings needed to build it was too high. It wasn't until many hundred years later when enough capital had been accumulated that the making of the steam engine became possible.

experiments at Stanford perhaps exemplify this phenomenon).[9] This arises for four reasons. First, children have a longer life expectancy than adults (both because of their young age, and the fact that life expectancies have been generally increasing over time).[10] As a result, the same amount of real-time waiting comprises a smaller percentage of a child's life than an adult's (Gruber *et al*.: 54; Ukraintseva 2001). Second, a child´s income is strictly limited relative to an adult's, thus constraining the process of civilization that lowers time preference, as discussed in section 3. Third, children perceive time to pass more quickly, making the cost of waiting a given amount of real time seem higher than for an adult experiencing a slower passage of time. This arises from a perception of time's passage quickening when it involves greater knowledge perception (Macar *et al*. 1994; Block and Zakay 1997; Block *et al*.: 1998), and also when a task is not repetitive or tedious as with the routinization created by age and experience (Watt 1991). Finally, children and especially young children are not cognizant of death as the end of their time.[11]

As a child develops into an adult these four factors change and the individual's rate of time preference continually diminishes. Entering old age may start to change this trend again, as the elderly revert to a form of infancy in several key ways. First, their income may decline. As the end of life approaches, there is increased uncertainty that if one delays consumption today they will be alive to enjoy the fruits of the wait. The end of time for an

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[9] Follow-up studies to Mischel's original experiment found a correlation between children who were able to delay gratification as children undergoing the marshmallow test and general success (as determined by competence assessments and SAT scores) later in life (Mischel *et al*. 1972; Shoda *et al*. 1990).

[10] Increasing life expectancies also allow for more distant goals to be added to an individual's value scale, thus reducing his time preference. It is not the physical lengthening of time that creates this effect, however, but the individual's perception of this occurrence (Hoppe 2001: 7).

[11] Three- to five-year old children regard death as a temporary state, and only accidental to a person's life. After five years of age, children gradually gain knowledge that death is "final, inevitable, and personal" (Grollman 1967: 98, 101). As time preference can only arise if time itself is finite, the perception of an infinite amount of time negates the ability of one to prefer events later to sooner.

individual's friends may reinforce the idea of finite life and increase their propensity to consume today (a reversal of the invincibility of youth).

This effect may be suspended, or counteracted by an individual realizing that his economic life extends beyond his physical life. This may arise from the fact of procreation that gives an individual offspring whose lives he may wish to consider as he plans his own consumption patterns (Hoppe 2011: 4-5), or from an individual using a charity or trust to extend his present income into the future beyond his physical life.

*4.3 Environmental or external factors*

Environmental or external factors can be classified in two ways. The first are those "events in an actors' physical environment whose outcome he can neither directly nor indirectly control" (Hoppe: 2001: 3). Since they are out of the actors' control they only affect his time preference insofar as they are expected, and they can be divided into *positive* and *negative* events.

Positive events, such as manna falling from heaven, will, to the extent they are expected, temporarily raise the time preference rate and stimulate consumption, until after the event has passed and the time preference rate will fall and savings will increase. Negative events, such as a flood, again to the extent they are expected, will have the opposite effect: temporarily lowering the time preference rate before the event, with increased savings as a result of attempting to protect oneself from the event. After the event has passed, the rate of time preference rate will rise, and savings will decrease.

The second factor is the general conditions which an individual finds himself. These general conditions can also be divided in two.

The first is the relative certainty of the environment that surrounds the actor. In a stable and more certain environment the future is more easily planned for, and thus the time preference rate will tend to be lower. This arises because it is easier to assess the tradeoff between curtailing consumption today and the expected satisfaction an individual will receive from the increased level of future consumption. The more uncertain the surrounding environment is, the higher the time preference would tend to be.

The second is the relative scarcity in the surrounding environment. In environments of abundance, where "nature provides", there is little need to save at all. Life in these areas, *ceteris paribus*, would be one of high time preference, and a resultant existence of living from hand to mouth. Only to the extent that there exists a relative scarcity of goods and time is saving necessitated. It is also clear that at any given time there exists a definite limit to this. For saving to be encouraged it must first be possible. In environments of such immense scarcity that all saving is impossible, high time preferences and a life lived "from hand to mouth" will be encouraged, or indeed necessitated, just like in the case of the environment of abundance, although this life of immense scarcity would be one of an arguably less pleasant nature.[12]

[12] The level of scarcity necessary to prohibit the initial stages of the process of civilization may be sufficiently low as to be a non-binding constraint in most of the modern world. Acemoglu *et al*. (2001) and Easterly and Levine (2003) find that endowments of climate, germs and crops do not affect development directly, but only indirectly through the available institutions. In other words, bad luck with endowments does not retard or stop growth, but may if institutions to deal with them are poorly developed.

*4.4 Institutional factors*

Time preference is closely related to the concepts of certainty and uncertainty. While perceived increases in uncertainty also increase an individual's time preference, alert entrepreneurship within effective institutions can combat this affect (Huerta de Soto 2010: 22).

We can divide institutions into two groups: social and anti-social. What is common to all social institutions is that they have spontaneously and peacefully evolved, with the intention of decreasing perceived future uncertainty,[13] making social cooperation easier, and creating the accompanying result of lowering time preference. Social institutions keep their position and continued existence based mainly on merit: those that lose their stature as beneficial institutions are replaced by better functioning ones.[14]

Not all institutions obtain and retain their position by merit alone, and this is the common denominator of all anti-social institutions; they retain their position by force or violence. Instead of being means to combat uncertainty to aid civilization, anti-social institutions become ends in themselves (Shaffer 2009: 10-11). They become harmful to social cooperation and development, and as a result raise time preference as this is reflected in real income levels.

[13] Shaffer (2009) discusses the evolution of social institutions as attempts to reduce the analogous concept of entropy.
[14] Evolved social institutions also include evolutionary legal systems, as discussed below (sec. 4.4.2).

### *4.4.1 Economic institutions*

The institution of money, being arguably the most important and foremost social institution, evolved spontaneously and voluntarily as that good which best served as a medium of exchange (Menger 1892). As barter involves high transaction costs, an evolution occurred whereby few and eventually one good was selected to exchange against all other goods. As exchange was simplified in the money economy, investment and production increased, along with the resultant levels of real income. As production increased, the purchasing power of money also increased, thus reducing the reservation demand for it. Analogous to this occurrence is a decrease in an individual's effective rate of time preference (Hoppe 2006: 79).

The evolution of the money economy enabled other institutions to develop, such as the banking system. This further decreased time preference rates, as banking facilitated saving and investing, which served to foster increased real income levels. Banking also served to make the institution of money more certain, as it increased the security and availability of an individual's cash savings (Bagus and Howden forthcoming).

Popular sentiment regards money as the root of all evil. Yet money *qua* money is neither good nor bad – it is only a means to enable trade and facilitate savings. The common practice of controlling the supply of money while obliging its use through legal tender laws (effectively changing it from a social to anti-social institution) does have ethical implications—mostly negative—through wealth redistributions and the propagation of economic cycles (Hülsmann 2008; Bagus *et al*. 2011). Less visible is the discouragement

of savings that inflationary policies cause, which analogously can be represented as an increase in time preference.

Once it is understood that inflation reduces the purchasing power of money systematically, we see that it is quite similar to the problem of saving in a barter economy. Goods selected as money have definite properties – they are easily divisible, universally (or at least widely) valued, portable, uniform, durable and scarce. Perhaps most important, the good cannot spoil quickly as this negates the usefulness of using it as an indirect exchange medium. In an inflationary economy, money that is saved will, as time passes, become more and more "spoiled", just like goods in a barter economy, because it will become increasingly less useful in exchange.[15] As an inflated money loses its value, people will increasingly spend it in order to obtain something "real" (Mises 1998: 562); consumption is encouraged and saving penalized. A constant and ongoing inflation will thus have the effect of reducing both present income and future income, and will raise time preference rates and shift time preference scales upwards. Inflation counteracts the beneficial characteristics of money that made a lower time preference rate possible.

### *4.4.2 Juridical institutions*

Juridical institutions have evolved spontaneously with the purpose of avoiding the incidence of conflict, or when a conflict nonetheless has occurred, to reduce and efficiently solve its resolution. This is most apparent perhaps in the Anglo-Saxon common law tradition, which sees law as a fluid progression. It is also true that the civil law which grew

[15] Note that, paradoxically perhaps, some anti-social institutions may increase our certainty and thus reduce our time preference. Legal tender laws that oblige the use of a currency in a given area also reduce competitive forces that might diminish inflationary pressures (Hülsmann 2008: 145-58). The increased inflationary pressures created by legal tender laws will counteract against the decreased uncertainty that a given money unit will be accepted in a future exchange, thus leaving ambiguous the total affect on an individual's (or society's) rate of time preference.

from Ancient Rome evolved within narrowly defined constructs of justice and fairness (Leoni 1961, Hayek 1973).[16] Law is a fundamental institution in managing uncertainty as it resolves conflicts and increases certainty in the scope of the results of our actions towards others, as well as those of others on us.[17]

One such law-based institution is private property which is necessitated by the scarcity of goods (Hoppe 2010: 18), and which likely evolved among our ancient forefathers when the increase in the size of population was not met by a proportional increase of wealth (Hoppe 2012). When our ancient forefathers were unable to solve problems of overpopulation by breaking off from the main group, the institutions of private property evolved as a peaceful and voluntary way of solving the conflicts that would arise regarding scarce resources.

Private property, for example, solves this conflict by answering the question, "Who owns what, when and why?" Knowing that the fruits of your labor are yours and will not be expropriated lowers time preference (Mulligan 2007). This happens from a combination of effects. First, claims to property in the future are strengthened and an individual can save today with confidence that he can consume this forgone consumption later. Second, empirical evidence suggests strong institutions protecting private property affect our willingness to labor in the present, thus increasing present real income (La Porta *et al*.

[16] Huerta de Soto goes on to further point out that "juridical institutions, and in general all social institutions (language, money, the market, etc.), arise from evolutionary processes in which a vast number of people individually contribute throughout history their own small bit of practical information and entrepreneurial creativity and thus spontaneously give rise, in accordance with Menger's well-known theory, to institutions which are without a doubt the product of the interaction between many people, though these institutions have not been consciously designed nor organized by any person. [...] Thus the paradoxical truth that those institutions (linguistic, economic, legal, and moral) which are most important and essential to the life of man in society could not be deliberately created by man himself, since he lacks the necessary intellectual capacity." Compare with (*ibid*.: 40-41).

[17] As laws and norms exist to reduce conflict, any norm that generates conflict rather than helping to avoid it is contrary to the very purpose of the law. "It is a dysfunctional norm or a perversion" (Hoppe 2011).

1998, 1999). If we consider the opposite case—that of a highly unstable juridical framework, or one that generates conflict rather than solves it—we realize the tendency this creates to raise time preference. The future becomes less certain to plan for (thus compromising our ability to estimate the value of future consumption), and an individual lacks reassurance that any savings today will translate into an exercisable claim to future consumption.[18]

A voluntary institution that has evolved for the purpose of solving conflict yet fails to achieve its goal and even incites conflict would, *ceteris paribus*, be abandoned and better, i.e., more efficiently or functional, institutions would emerge. Yet conditions change when we remove the voluntariness and peacefulness, and add a violent, and thus anti-social, element to the equation. This violence can be divided in two ways: acts that are intermittent and illegitimate (e.g., crime) and, more importantly, acts that are institutionalized and legitimized (e.g., declared wars).

Crime has the distinguishing mark of being seen as illegitimate in the eyes of not only the victim but also the rest of society, and thus to defend oneself against the criminal is considered a right, as is the right to punish and extract compensation from the offender (Hoppe 2001: 11). Crime reduces an individual's present amount of goods and raises his time preference. Yet, just as in the case of natural disasters, if the risk of crime can be perceived people can act accordingly and allocate their resources to the protection and

[18] Indeed much economic development in less-developed countries takes place in the underground economy, since property rights are poorly enforced in the formal economy (de Soto 2000). In countries where property rights are only vaguely defined or poorly enforced entrepreneurs have difficulty securing credit to expand their business, or even to sell it to the appropriate buyer. As a result, development is low and a large amount of capital (estimated by de Soto (2000: 32) to amount to more than $10 trillion worldwide) remains "dead" in a state of inefficient underutilization.

prevention from crime (e.g., they can build walls, fences, install alarms, arm themselves, buy insurance, etc.).[19]

These protections imply a reduction in present goods, and a higher time preference will follow.[20] However, since crimes are considered to be illegitimate, and since defending oneself against them is permitted, they will only have a temporary and unsystematic effect. While people will save and invest less because of a reduced real income, their tastes or specific time preference scales will not change as a result. Thus, after what is deemed to be sufficient protection against crime has been provided for, the process of civilization resumes.

As the state is the territorial monopolist on ultimate decision making (Hoppe 1989: 182-83)—whether de jure or de facto—it is the only institution that can partake in "legitimized" crime. This occurs most frequently in cases of war where rights are suspended or actions are permitted that are otherwise illegitimate. It is also apparent in simpler cases, e.g., taxes enforced by the threat of fines or imprisonment (Schumpeter 1942: 198), the threat of eminent domain, or by enacting what Hayek (1973) refers to as legislation as distinct from naturally evolved or agreed upon laws.

As a result of this the state affects time preferences in a distinctly different way than crime. Since they are created and not evolved actions, they can be highly uncertain and subject to change. Uncertainty about future tax rates can depress investment activity today, a situation we can refer to as "regime uncertainty" (Higgs 1997). Since there is no direct

[19] Note that in order to protect oneself from these crimes, they must be non-serially correlated, and hence insurable events. Legitimized aggressions, as in the case of state-sponsored crimes (e.g., genocide, war, etc.), sever this link. Unable to protect oneself from the possibility of being aggressed against, time preference rates increase in the present to compensate against a potentially less-secure future

[20] At the very least, they divert resources from investment that would increase production in subsequent years.

protection against these activities as in the case of crime,[21] individuals will tend to adjust their expectations of future returns accordingly. The very act of legislation increases the degree of uncertainty, since what is wrong today might not be wrong tomorrow (Smith 1988). This less stable environment of a shifting legal framework will thus have the same impact on an individual's time preference as, e.g., an increase in natural disasters or an increase in criminal behavior. The future is rendered relatively more uncertain, and thus the individual's time preference scale will increase.[22]

Thus we can conclude that the state not only changes the amount of present income (through taxation), which leads to a higher time preference rate, but also changes the amount of future income to be expected, reinforcing this increase. As it also creates a less certain environment by enacting legislation, it furthermore leads to a higher *time preference scale.* Three reinforcing effects thus serve to raise the rate of time preference through legitimized state interventions, and thus have a distinctly de-civilizing effect on society.[23]

### *4.4.3 Moral institutions*

While environmental factors are highly important in reducing the uncertainty of man's environment, it is clear that the behavior of other men is a constant source of uncertainty as well. Moral institutions have evolved in order to deal with the uncertainty of people's

[21] By definition you are not allowed to defend yourself against "legitimized" aggressions.
[22] Hayek (1960: 143) further distinguishes between those relatively certain state activities and those that are uncertain. Taxation is relatively certain, at least in the sense that rates are known in advance in most instances and payment is at the same frequency. Conscription of all men between ages 18-21, although not avoidable, if continually enforced would allow for some degree of planning to mitigate its effects.
[23] This process of de-civilization is a self-reinforcing spiral just like the previous process of civilization. As present incomes are reduced, time preference rates are raised, leading to further reductions in savings.

behaviors. Chief among these, though by no means the only forms of moral institutions, are religion, the family unit, and behavioral norms.

In the tragedy of the commons, individuals are unwilling to delay resource use to promote sustainability because of the opportunity cost of doing so. Overutilization imperils those scarce common resources that cannot be protected for technological reasons (e.g., air, oceans) or legal reasons (e.g., public lands). While the modern way of solving the tragedy has moved to regulation, traditionally it was social norms and customs that altered and guided people's behavior and use of these resources (Ostrom 1990, 2005; Cox *et al*. 2010). Rules were established to limit use or to reimburse those negatively affected, and in such a way eliminated the overutilization in place of a longer-term orientation that promoted sustainability (Blomquist et al.1994; Ostrom 1999: 510).

Institutions may also take a religious form, meant to instill a certain predictability in the way people act, as well as trying to extend the time horizon of the individual beyond his own death.

The Christian concept of life after death had the effect that the time horizon an individual considers is lengthened beyond his physical life. Even during the first millennium, Christianity's focus on the impending end of the world functioned to keep time preferences centered more closely on the present than would otherwise have been the case. With the changing attitudes among Church leaders and laypersons that the ultimate end of all earthly things was not impending, a shift out in time horizons occurred with the result that time preferences gradually began decreasing (Mises 1998: 527).

The institution of marriage and family can also be said to have a stabilizing and certainty-making element to it that tends to reduce time preference and encourage savings. Earlier we pointed to the fact that man's time preference was conditioned by his physical life, but also that given the biological fact of procreation he could extend his time horizon. This is mainly done through the institution of the family (Smith 1988: 25). As Joseph Schumpeter notes

> the capitalist order entrusts the long-run interests of society to the upper strata of the bourgeoisie. The bourgeoisie work primarily in order to invest, and it was not *so much a standard of consumption as a standard of accumulation* that the bourgeoisie struggled for and tried to defend against governments that took the short-run view. *With the decline of the driving power supplied by the family motive, the businessman's time-horizon shrinks, roughly, to the life expectation*. (1942: 60-61, emphases added)

The family makes it possible for time preferences to extend beyond death, and from this we would expect that a society of stable family morals would affect the social time preference by lowering it.

Closely related to family morals are sexual morals. Sigmund Freud argued that the basis of civilized behavior is dependent upon limitations being placed upon sexual behavior (Smith 1988: 31), and as Pitirim Sorokin (1972: 107 and 130) points out: "Any notable achievement requires long training, persistent labour, and concentration … The result is that little time and energy can be spent in pursuit of sexual thrills."

Since moral institutions have evolved in order to reduce uncertainty and to lower time preferences, thus benefitting the process of civilization, we would expect to see a rise in social time preference to occur were these institutions to be counteracted or completely broken down.

## 5 Effects of changes in time preference

The behavior of individuals is uniquely related to their time horizons. Individuals oriented to the long term and having lower time preference, will adapt their behavior in the present in order to gain a potential benefit in the future. Even if potential benefits could be had in the short run, in the long run it pays off to be peaceful, honest, polite and well-mannered since people will trust you more and show you the same behavior in return. In short, these civilized behaviors create bonds and trust, and thus make possible potentially stronger friendships and relationships. All these behaviors are also to some extent self-reinforcing: politeness, honesty, trust, etc. beget politeness, honesty, trust, etc.

Personal health is also closely related to time preference, for many of the same reasons. More long-term thinking means reducing some potential present “thrills” in order to have more of a future, which is to say a longer life, and as we have seen, a longer life expectancy is related to lower time preference. Eating well, exercising, little or no drug use and so on are conducive to long-term health and tend to be related to people with lower time preferences.

On the other hand, individuals that have relatively short time horizons and think more in the short term tend to be more distrustful and untrustworthy, impolite, unpleasant,

and bad-mannered as the fear of a feedback mechanism coming back to punish you for your deceitful and impolite behavior in the future is not taken into account. Less attention is paid to the potential long-term effects of this behavior. This behavior is self-reinforcing as well, with the result that closer and stronger friendships and relationships are made relatively more difficult. Those who lament the increasing "coldness" of society fail to take into account the real reasons for this.[24] Owing to shorter time horizons and less concern about the future they also tend to partake in riskier and more self-destructive behavior such as smoking, excessive drinking, drug use, tattoos, and extreme sports.

Where the social time preference rate is high, and time horizons are accordingly short, spending and consumption are encouraged, not thrift. The social and economic order of consumerism is commonly identified and decried in today's developed world, yet the reason why is misunderstood. That people seem to lavishly spend money on consumerist products is not a result of aggressive advertising or planned obsolescence.[25] These are instead *the inevitable result* of the very sickness that lies behind seemingly senseless spending; inflation, and the resultant higher time preference rates. As people's time preference rates are raised, planning becomes increasingly short sighted, and as a result of this they demand less durable goods. The lamented consumption society is a result of high time preference rates and the process of de-civilization, both set in motion by inflation.[26]

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[24] More recent studies finding e.g., declining empathy among young adults, have pointed to social isolation in an increasingly digital world as the culprit (Konrath *et al*. 2011; Perry and Szalavitz 2011). While this rationale may explain the more recent reported shift to less empathic youth, it does not explain similar attitudes prevalent in past societies or even in less technologically advanced modern societies.

[25] Kirkpatrick (1997: chap. 3) confronts the idea that advertising is a coercive force unduly affecting consumers' behavior. Reisman (1998: 214-16) argues that planned obsolescence is not inevitable but rather the result of competitive move to offer improved goods faster than a competitor.

[26] This effect may be most pronounced among society's younger generation, as they tend not to realize that inflation is happening for lack of perspective on how far prices have diverged from their historical values. Mises (1942: 105), writing about the Weimer German hyperinflation of 1922-23, noted that a result of the

When the future becomes more and more uncertain the present obtains an ever higher value relative to the future. Instead of saving and planning for the future, wild and irresponsible speculation and gambling are encouraged. Again we see that the common consensus about the negative effects regarding the "gambling" and "wild speculation" occurring e.g., on Wall Street, seem to have pinpointed the symptoms of a disease, yet it has failed to diagnose the patient correctly. Again the problem lies in higher time preferences as a result of inflation.

We can also see effects of time preference in art and culture. Leaving aside considerations as to what constitutes good art or culture, it needs to be pointed out that without leisure time, no art, or in general no culture, can develop beyond a very primitive stage. Leisure time is of course a result of a higher productivity and a higher standard of living, which must be the result of a low social time preference rate. Thus, in societies with lower social time preference more time can be spent in cultural activities, and where the social time preference rate is higher, comparatively less time can be dedicated to these activities.

Finally, while higher time preferences by no means are equivalent with crime, neither are low time preferences equivalent with the non-existence of crime. Rather the crimes as such change in nature. As can be expected, crimes related to high time preferences are crimes with a short time horizon, that require little or no planning; in short, petty crimes, crimes of passion, robberies etc. Crimes related to low time preferences

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inflation was to "shock the foundations of [the] country's social structure" and that the youth came to "learn to live in the present and scorn those who try to teach them 'old-fashioned' morality and thrift." Bagus and Howden (2011: 70-71) given an applied example via the recent Icelandic example of an inflationary boom and the effects this had on the general mentality towards savings and delayed gratification, especially amongst the youth.

instead are those with longer time horizons, more intricacies, which need relatively more planning.

## 6 Conclusion

The beginning of this paper provided a theoretical foundation to explain how civilizations *can and must* develop. The key concept in the development of civilization is savings, which makes investment and production possible. The amount of savings and investment is determined by time preference, where lower time preferences result in an increasing amount of savings and production, which in turn lowers time preferences further. This self-reinforcing spiral of increasing civilization and increasingly higher standards of living is called the "process of civilization".

Personal, biological, environmental and institutional factors were shown to affect people's time preference rates. We saw that the concept of time preference was closely related to certainty and uncertainty. Social institutions (economic, juridical and moral) evolved in order to deal with the ineradicable uncertainty that man faces in his everyday life, and they have a civilizing and time preference reducing effect on society. Anti-social institutions, on the other hand, tend to have the opposite effect.

Lastly, we looked at various effects that changes in time preferences would have. Societies with lower time preference would be expected to be more wealthy and civilized, with more cultural activity, and a lower degree of crime in general and aggressive crime in particular. Societies with higher time preference would be expected to be less wealthy and civilized, and have a higher degree of crime in general and of aggressive crime in

particular. Due to their less wealthy nature they would also have less leisure time and as a consequence of this, less time to spend on cultural development.

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