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## The Theory of Life History and Criminal Behavior

**Abstract:** The aim of this article is to show the phenomenon of violent crime from the perspective of the life-history theory, which is an approach drawn from evolutionary biology, more and more often employed in the area of psychology. In recent years, there has been increasing interest in the explanations of criminality, which are linked with ecology and evolutionary psychology. This is a review article which draws attention to the possibilities of analyzing the phenomenon of crime in the context of the life-history theory.

**Key words:** life history theory; life history strategies; environmental harshness and unpredictability; criminality.

### Introduction

The life-history theory is a relatively new approach in social sciences, based on the findings of natural sciences. It fits into the idea of consilience of knowledge, and due to this, it can be considered an interesting research perspective in criminology, which is an interdisciplinary science. The article is a review of publications fitting into this perspective; it is also an attempt to integrate the selected theoretical proposals contained in them.

Such an approach combines research paradigms of psychology, ecology and evolutionary biology in order to explain the phenomenon of crime. Criminal behavior in this approach is recognized in the context adopted by life strategies. Here, we refer to the process of manifesting individual features that are correlated with one another, which raise the level of adjustment of an individual in the broad context of ecology.

According to the presented concept, the majority of offenders accept the so-called “fast” life strategy, which manifests itself in frequent risk-taking, low self-control, lack of respect for social norms and rules as well as a promiscuity and low level of parental investment.

## The theory of life history – an outline of issues

Formulated on the basis of evolutionary biology, the life-history theory explains the impact of ecological cues of resource richness and the level of survival probabilities on the behavior of organisms (Caudell, Quinlan 2012). The essence of this approach is to analyze the differences in life strategies of species and individuals under selection pressure, created by environmental conditions. In evolutionary biology these differences include, among others, growth rate, method of reproduction, age of sexual maturity, average number of offspring, level of parental investment, rate of aging and average lifespan (Pianka, 1970).

The cause of variation of life strategies is seeking to optimize the allocation of energy and resources for competitive purposes due to environmental conditions. These goals, in particular, include: physical development, maintaining good physical condition and reproduction. A limited amount of energy and resources enforces constraints in achieving these goals. Therefore, in some species, selection favored such proportions of allocation that in certain environmental conditions raised the chances of survival and reproduction (Kruger et al. 2015). The proportions of allocations, imposed by energy restrictions, take the form of a kind of trade-offs faced by all sexually reproducing organisms today. These trade-offs include: balancing the proportions of resources and energy allocated to physical effort and reproductive effort, trade-off with regard to using resources in an effort of mating and parental effort, investing in current or future reproduction and selection between small parental investment and numerous offspring and significant investment in relatively few offspring (Kruger et al. 2015 source: Roff 1992; Stearns 1992). When making this kind of trade-offs, organisms allocate their resources in the most beneficial way for survival and reproduction due to factors such as: gender, stage of life, environmental characteristics and the situational context. For example, in the case of a trade-off between reproductive effort and parental effort, the males usually have potentially higher benefits of engaging in intra-sexual rivalry, than spending this energy to care for the offspring, because usually females take care of the young (Hill, Chow 2002).

In the context of these trade-offs, great importance is attributed to external factors (Quinlan 2010). It is believed that the severity and unpredictability of the environment are factors that have the greatest impact on evolution and development of life strategies. Environmental severity is measured by the rate at which external factors cause loss of efficiency and death of individuals in the popula-

tion. In contrast, environmental unpredictability is seen in terms of the rate at which the level of environmental severity changes over time and space (Ellis et al. 2009). There is a general regularity, according to which the optimal strategy in harsh and precarious conditions is reproduction as early as possible; this is due to the fact that, regardless of investment in growth and keeping the body in good condition, the individual may not live to see future reproduction (Mittal and Griskevicius 2014). Therefore, there is a division into two basic strategies, located on the continuum: fast – defined as r-strategy, and slow – defined as K-strategy. Fast strategies are characterized by bringing into the world a large number of offspring with simultaneous minimal parental investments, as a result of which few new-born individuals live to see the reproductive age (McArthur, Wilson 1967; Pianka 1970; Wilson 1975). Fast strategies are typical of species living in fragile ecosystems, with long periods of bad weather or food deficits. In contrast, slow strategies, found in stable ecosystems, rely on the development of a more energy-expensive phenotype, having fewer offspring, greater parental investment and hence a higher survival of young and longer lifespan (McArthur, Wilson 1967, Pianka 1970; Wilson 1975).

Life-history strategies are specific for species adapted to the conditions of ancient environments, shaped in response to repeated selection pressure. There is also an intra-species variation of life-history strategies, which is a manifestation of adapting to the variability of environmental conditions within the ecosystem inhabited by the representatives of a given species (Rushton 1985).

## **Application of the life-history theory to explain deviant behavior**

The human is no exception when it comes to taking life strategies and the associated variation (Rushton 1985). Certain individuals differ between themselves in terms of age of puberty and sexual initiation, tendencies to promiscuity and infidelity, desire to have children, their number, level of parental investment in offspring possessed, and many other features (Griskevicius et al. 2011). According to Rushton (1985), individuals whose strategies are similar to K, mature and live longer, have a relatively lower sexual desire and a higher level of intelligence and conformism.

The result of the first attempts to explain human behavior from the evolutionary-ecological perspective was the appearance of the article by Draper and Harpending (1982), which described the impact a father's absence on the reproductive strategies of young girls. Girls deprived of paternal care initiated sexual intercourse earlier, had more sexual partners, more children and a less stable living situation than their peers growing up in more stable environments (Draper, Harpending 1982). In 1991, it was found (Belsky et al. 1991) that an unstable

family environment is conducive to earlier sexual maturation of girls. The relationship between early-onset of menstruation and signals of environmental severity, such as the early divorce of parents, was demonstrated by Quinlan (2003) in a study conducted on a sample of 10,847 women. As noted by Sapolsky (1998), it is not ruled out that girls entering puberty early were daughters of women who also began menstruating at a relatively early age.

There is a possibility that the characteristics making up the fast life strategies are a manifestation of the action of genes selected in adverse environments. For example, results of a study covering 185 countries, showed a relationship between the numerical superiority of women over men in the age group from 0 to 14 years old and teenage girls becoming pregnant, which may be understood as a kind of adaptation to the environment characterized by a deficiency in men (Barber, 2000). It is worth noting that one of the assumptions of the life-history theory states that at the inter-species and intra-species level, any adaptive changes within the life strategies are the result of interactions between genetic variation and phenotypic plasticity in response to environmental conditions (Ellis et al. 2009).

In the classical theory of life history, a lot of space is devoted to the variation of sexual behavior. However, in the context of the discussion of deviant behavior it is of paramount importance that the behavior and characteristics indicating the adoption of a specific reproductive strategy are closely linked with many other singular features, as part of the fast or slow life strategy. In other words, the selection of certain options determines the optimality of choosing subsequent ones (Ellis et al. 2009; Wiebe 2012). According to the assumptions of psychologists and evolutionary biologists, people who adopt fast strategies not only mature at a faster pace, start their sex life early and have more sexual partners than individuals who adopt slower strategies, but they are also more likely to take risky behavior, including impulse behavior. Besides, in their actions they usually take a perspective focused on the “here and now”, more likely to ignore social rules and norms, and they are less likely to postpone rewards than those taking slower strategies.

The individuals who are characterized by the slow life strategy get married relatively later, they are generally monogamous and more discriminating in relation to potential sexual partners, in their actions they are often guided by future benefits (e.g. they wait with starting a family until they complete their studies and find a job) and usually manifest conformism (Figueredo et al. 2006; Schlomer, Cleveland 2014).

In the context of gene expression, the environment plays an important part. It is worth pointing out that, like in the case of other animals, the life-history strategies adopted amongst humans are significantly affected by external factors causing a loss of efficiency and death (Ellis et al. 2009). According to evolutionary logic, if the future is uncertain, risk-taking in order to achieve immediate rewards is the best strategy. In contrast, the predictability and stability of the environment,

due to a long life expectancy, encourages individuals to invest in the future (Daly, Wilson 2001).

In humans, evaluation of the actual level of stability and predictability of the environment is subjective. The same environmental conditions, from the point of view of two different people, may appear as a more or less severe or controllable. The theory of life history assumes that this evaluation largely stems from beliefs about the stability of the environment as a result of experience acquired during early socialization. For example, the results of the experiment by Griskevicius et al. (2013) testify to the fact that the state of economic uncertainty induced in individuals brought up in poor environments impulsive behavior aimed at obtaining immediate gratification. At the same time it has been shown that people who grow up in wealthy circles showed a tendency to postpone rewards and engage in behavior with low levels of impulsiveness. The influence of the degree of severity of the environment in childhood to adopting specific life-history strategies in adulthood has already previously been shown. Griskevicius et al. (2011) found that the willingness to take financial risks and the inability of deferring gratification corresponds to a subjective sense of danger, which is determined by the socio-economic status of childhood. This result supports the legitimacy of the assumption that antisocial behavior is associated with beliefs about the world that were shaped in childhood, as a reaction to living conditions.

Similar conclusions are drawn through the results of the modified *marshmallow test* by Kidd, Palmeri and Aslin (2012). In this experiment, before giving children sweets, art classes were conducted. One group worked with a researcher, who kept his promise of bringing the previously announced crayons and stickers; the other with a researcher, who did not keep the promise. As it turned out, the children from the first group waited much longer for another marshmallow than the children from the other group. According to the authors of the experiment, it is not the level of self-control of children that determines the ability of defer gratification in their adult lives, but the beliefs about the stability of the environment acquired during early socialization. The degree of predictability of the environment determines the profitability of deferring rewards.

The results cited above demonstrate the role of environmental factors. Other researchers believe that in the context of the skill to defer gratification, self-control is also important. According to Mittal and Griskevicius (2014), the level of self-control is an important factor behind the adopted life strategy. There is no doubt, however, that it does not depend solely on the genotype.

As Wiebe noted (2012), research in the field of behavioral genetics point to a high degree of inheriting self-control and the tendency to behavioral problems. The data collected in the *National Longitudinal Study of Adolescent Health* on mono- and dizygotic twins (Beaver et al. 2008) indicates the inheritance of low self-control, ranging from 52 to 64%. The impact of a specific environment explains respectively from 34 to 47% of the variance of low self-control.

The key for gene-environment interactions seems to be the first five years of life, characterized by the highest rate of developmental sensitivity towards experiencing environmental unpredictability (Simpson et al. 2012). This state of affairs is consistent with the regularity that between the fourth and fifth year of age, most children engage intensively in social interactions. This is due to the fact that in most hunter-gatherer communities, the average spacing between births is three years (Marlowe 2005, source: Sheskin et al. 2014). In the evolutionary past, a new child coming into the world meant that part of the resources provided thus far to the older child was redirected to caring and satisfying the needs of the youngest family member. This probably resulted in a tendency to enter into more intensive social relations by the older child in order to obtain goods that were until now available unconditionally (Sheskin et al. 2014).

As already mentioned, in the context of factors determining the adoption of fast life strategies, a key role is played by the subjective belief of the individual about the environmental threats from the outside (Griskevicius et al. 2011). These factors include, among others: low socio-economic status, a sense of threat of becoming a victim of violence or an accident, growing up in a family or neighborhood characterized by a high rate of early mortality, experiencing severe upbringing practices in childhood (Ellis et al. 2009) or alcoholism of a parent (Hill, Chow 2002).

Permanent stress of exposure to these factors early in life of the individual has a strong and lasting impact on its development, resulting in long-term changes in the scope of cognitive functions, emotions and behavior (Giudice 2014). Mittal and Griskevicius (2014) showed that in conditions of experimentally induced uncertainty, respondents who grew up in environments that were poor in resources demonstrated a lower level of control, higher impulsiveness and weaker perseverance in performing difficult tasks than those who had a higher socio-economic status in childhood.

It was also shown (Shackman, Pollak 2014) that children who are victims of physical violence exhibit a much higher sensitivity to threatening environmental cues than children who did not experience abuse in their lives. No differences were observed between the two groups in terms of sensitivity to non-threatening stimuli. The psychological mechanisms that predispose to adopt a fast or slow life strategy are somewhat dormant in a conducive environment, to activate in the conditions of a harsh and unpredictable environment (Griskevicius et al. 2011; Griskevicius et al. 2013).

It is worth noting that the severity and unpredictability of the environment are not identical with each other, and each of these factors may cause different effects (Ellis et al. 2009). This was confirmed by the results of recent studies, according to which a high level of environmental unpredictability (but not severity) during early childhood, was a significant predictor of an adult individual having the features indicating the adoption of the fast life strategy. The unpredictability

of the environment during the first five years of life, compared with a severe but stable environment, was associated with a greater number of sexual partners, earlier sexual initiation and higher rates of engaging in aggressive and criminal behavior in respondents aged 23 years old (Simpson et al. 2012). This association appears to be understandable, bearing in mind the fact in accordance with which in the same harsh environmental conditions, the benefits of taking risks perceived by individuals depend, among others, on beliefs, whether they come from outside or not. As is apparent from the above-cited studies, such beliefs are formed at a very early stage of development.

## **Crime in terms of the life-history theory**

Adolescence and early adulthood is a period of life in which a significant portion of resources held by an individual is allocated to establish heterosexual relationship (Reis et al. 1993). The fact that most people join up in couples, start a family and begin an independent life, makes this a time of potentially the highest costs and benefits of engaging in sexual rivalry (Hill, Chow 2002). This pattern applies especially to men due to the much greater than in the case of women reproductive diversification opportunities (Buss 2008). The period of increased reproductive effort in males involves a phenomenon called “young man syndrome”. It consists in the fact that with entering the stage of puberty in boys, the risk of becoming a victim of murder gradually increases and reaches its peak around the age of 25, to then take a downward trend. The threat of murder similar to both sexes occurs no earlier than at 77 years of age (Buss 2008). What’s more, young age is associated with the highest level of criminal activity in men. Generally, there is a pattern according to which the populations of both victims and perpetrators of crime are in almost all cultures dominated by young, unemployed men who are not involved in partnerships (Wilson, Daly 1985).

The connection between sexual rivalry and violent criminal acts, repeatedly emphasized by evolutionary psychologists, can be explained on the basis of the life-history theory. Therefore, criminal activities undertaken by young men can be interpreted as taking a risk of loss of life due to an increased reproduction chances (Hill, Chow 2002). Antisocial behavior, in order to achieve immediate benefits in terms of raising their status and gaining sexual access to a greater number of women, can fulfill the adaptive function in the case of men who, due to their low social position, have almost nothing to lose (Wilson, Daly 1985; Daly, Wilson 2001). After engaging in a partnership, the costs of risky behavior begin to grow and achieve a particularly high level when offspring comes into the world (Hill, Chow 2002). In other words, in most cases the result of the balance of costs and benefits of antisocial behavior is related to the current situation on the matrimonial market.

Of course, although in adolescence and early adulthood increased mating effort is shared by most people, sexual rivalry does not lead all young men to crime. Some people manifest a tendency to take criminal behavior during the most acute sexual rivalry, while others do not disclose such tendencies in general. Terrie E. Moffitt (1993) developed a well-known developmental taxonomy of criminal behavior on the basis of criminology. According to her, there are two basic types of offenders: those whose antisocial activities are limited to the period of adolescence, so the age of *early onset delinquents*, and those who commit crimes also in other periods of life – *life-course persistent offenders*.

In the context of the discussion of the etiology of crime, the model of developmental taxonomy can be regarded as a starting point for clarifications formulated on the basis of the life-history theory. Such a perspective was adopted by Boutwell, Barnes, Deaton and Beaver (2013) in a study, in which one of the objectives was to verify the typology presented by Moffitt (1993) in light of the assumptions of the life-history theory. By examining people in terms of their adopted sexual strategies, they proved that individuals, who were prone to crime throughout their whole life, were characterized by higher levels of sexual activity, as well as more partners than respondents who engage in antisocial behavior only in adolescence and people who in general do not manifest criminal tendencies.

Given that both durable conformism and a variously manifested tendency to break the law are the result of genetic and environmental interactions, it is highly likely that the persistent tendency throughout life towards criminal behavior and a tendency to break the law only at the age associated with the highest level of sexual rivalry, are strategies that have evolved separately, to maximize the chances of survival and reproduction in different socio-ecological conditions (Boutwell et al. 2013). It seems the due to the antisocial character of actions, both strategies should be located at points of the continuum of life history that are far from the end determining the K-strategy.

After analyzing nearly five hundred study results, Ellis (1988) showed that there are universal relationships between crime and almost all the characteristic features for the fast life strategy. His analysis demonstrated that the characteristics that are most predisposing to encroaching a criminal path are, among others: male sex, age range from 12 to 30 years old, origin from a broken family, experience of trauma in childhood, relatively fast pace of puberty, early age of sexual initiation, promiscuity, making small investment in offspring and the expectation that life will not last long. Similarly, in studying the correlations between life history, crime, intelligence, attitudes towards sex and certain physiological features, Bogaert and Rushton (1989) found a positive correlation between adopting a fast strategy and crime and sexual permissiveness.

Issues related to sexuality are important aspects of life strategies. Attitudes and sexual behavior, as well as the rate of maturation, attitudes towards risk-taking and antisocial behavior, are among the attributes of fast or slow life strategy,



and as it is known, the selection of biological and psychosocial characteristics is never accidental. They form a set of adaptations that evolved in response to the challenges of specific ecological niches (Brumbach et al. 2009). The existence of the link of sexual and criminal behavior in one life strategy is supported, among others, by the study results of Stouthamer-Loeber and Wei (1998) concerning correlations between early fatherhood and crime. The researchers found that men who had produced offspring before turning nineteen years old (12.3% of respondents) were distinguished by more than a double frequency of committing serious criminal acts than other respondents. In addition, their propensity to commit crimes was not weakened after they became fathers, which is particularly interesting in the context of the explanations offered by the theory of life history. In the framework of a later, longitudinal study, conducted among young men in Finland (Lehti et al. 2012) it was demonstrated, however, that fatherhood at a young age is associated with two groups of independent factors, relating to the periods of childhood and adolescence. The group of factors related to childhood encompassed behavioral problems of the child, low level of education of the mother and the fact of being begotten by a juvenile father. In contrast, multiple conflicts with the law turned out to be risk factors in adolescence.

In another study conducted on a group of adolescents, the relationship between mating effort and the different categories of antisocial acts was verified. For both sexes, the level of occurrence of undesirable behavior increased along with the intensity of effort put into acquiring potential sexual partners (Charles, Egan 2005). Similarly, Nedlec and Beaver (2012) in longitudinal studies confirmed the dependence between antisocial behavior and increased sexual activity and having multiple sexual partners.

The life-history theory also emphasizes the importance of the adopted life strategy for the male tendency to use coercion in sexual contact. For example, Gladden, Sisco and Figueredo (2008) showed that three distinct models indicate the existence of sexual strategies based on coercion (theory of life history, theory of competitive disadvantage, theory of sexual coercion as a side effect). According to the researchers, the tendency to sexual coercion may be a set of antisocial tactics that are part of the fast life strategy. Moreover, the existence of a group of correlated features was also established, which significantly reduce the likelihood of committing sexual coercion. This set is described as a protective factor, which includes: slow life-history strategy, matrimonial value of the individual, low mating effort, long-term sexual strategy and low levels of psychopathy, Machiavellianism and aggression (Gladden et al. 2008).

Environmental conditions affect individuals by creating the ground for expressing certain traits and behaviors that are genetically conditioned. Currently, specific alleles are known which are responsible for variability in sexual behavior, reluctance to get married, have children and making low investment in offspring (Eisenberg et al. 2007), which is conducive to the occurrence of antisocial behav-

ior. A more direct connection of genes with crime has been described by Minkov and Bond (2015), who presented study results on polymorphism of the AR androgen receptor gene, polymorphism of the DRD4 dopamine receptor gene and polymorphism of the 5-HTTLPR serotonin transporter gene. These polymorphisms are associated with variability in the approach to risk and adopted temporal orientation. It has been shown that adopting a fast life strategy correlates with short-term temporal orientation. Persons with such genetic endowment tend to take risky and impulsive behavior, use violence and engage in short-term sexual relationships, while these tendencies are revealed most in high economic inequality (Minkov, Bond 2015).

## Summary and conclusions

The concept of life-history is an approach, according to which criminal behavior is the product of environmental interactions of risk factors with genetic predispositions, understood not as rigid instructions stored in DNA, but in terms of genetic potential, highly sensitive to the circumstances and environmental cues. The interaction of genetic and socio-ecological influences results in the development of a set of beliefs about the world, which manifest themselves in the form of attributes and behaviors indicating the adoption of a specific life strategy, increasing the chances of survival and reproduction in a particular environment. The adoption of fast life strategies by criminals has to do with their beliefs about the unpredictability and severity of the surrounding world, having its source in the lessons learned in childhood, and with the perception of their own life situation as unfavorable and being outside the scope of influence of the individual.

It should be remembered that using a specific life strategy by an individual (slow or fast) is determined – in addition to the factors described above – also through an assessment of their phenotypic characteristics. In evolutionary terms, the importance of the so-called intermediate inheritance is emphasized (Tooby, Cosmides 1990). It consists in the fact that random environmental factors lead to trigger one of the many alternative strategies of action, which are implemented by inheritable cognitive mechanisms. Based on the assessment of own characteristics, representing information for the mental mechanism, an appropriate mode of action is determined for an individual in a given environment. For example, an individual who claims to be stronger and more physically fit than others, while less intelligent and less conscientious in action, can adopt a strategy of achieving goals by means of physical violence. The presence of a specific combination of characteristics that are rare in a population, for instance those that increase the likelihood of adopting a fast and antisocial life strategy, is often explained in the evolutionary mainstream within the framework of the so-called frequency selection theory. If the population is dominated by altruistic individuals with

characteristics that increase the likelihood of pro-social behavior, it increases the profitability of antisocial behaviors and the likelihood of reproductive success of selfish individuals is increased. This is because the population in which there are many pro-social altruists is a great environmental niche for antisocial egoists who can exploit their weaknesses. The dynamics of frequency selection, due to the tendency to pro-social behavior, is explained well by the theory of games and computer simulations of co-evolution in a population of the altruistic strategy (i.e. the pigeon strategy) and egoistic strategy (i.e. the hawk strategy) (cf. Buss 2008; Mealey 1995). On the basis of this approach, Linda Mealey formulated the concept of the evolution of sociopathy (1995). The author believes that in every community about 1% of women and 3–4% of men are sociopaths, because this is the optimal ratio in relation to pro-social individuals, which provides profitability of using the hawk strategy, which can be regarded as the essence of anti-social personality disorder. Mealey believes that in unstable environmental (social) conditions, sociopathic behavior may begin to be manifested by an even greater proportion of subjects in the population – those, whose innate qualities make it possible both to adapt to the social requirements in stable environments as well as the execution of antisocial actions in unstable environments.

We are convinced that the life-history theory fits into the evolutionary logic of frequency selection and intermediate inheritance. The life strategy, including the competitive one, which is treated as a variant of the fast strategy on the basis of the life-history theory, is the result of the assessment of environmental conditions (especially in early childhood) in terms of their severity and unpredictability, as well as the assessment of own predisposition to succeed in these conditions. Due to the fact that in humans the environmental conditions are largely determined by cultural conditions, it is necessary to analyze the factors that trigger specific life strategies in terms of the cultural aspect, and integration of the theory of biologically oriented crime with those culturally oriented. One of the phenomena, which in this context are gaining a better, complementary explanation, is the young man's syndrome.

Taking risky behavior by men begins in the period in which in hunter-gatherer cultures, young people determined their social identity and started families. It can be assumed that the estimation of their abilities in the context of environmental conditions (including cultural) enters into its culminating phase in which alternative strategies of action are tested, so that one of them is perpetuated – the optimal, due to increasing the joint adjustment of the individual having specific characteristics in an environment of specific properties. It seems that risky tests of rivalry strategies (they are mostly fast strategies), adopted as a potential alternative to the dominant group of cooperative strategies (they are mostly slow strategies) are conducive to genetically determined transitional, developmental dysfunctions in the functioning of nervous centers responsible for risk assessment, occurring in young men (Florek, Piotrowski 2013).

From an evolutionary perspective, one can also explain the formation of sub-cultures, which are aimed at changing the cultural niche in a direction that is compatible with the individual characteristics of individuals (Piotrowski, Florek 2013). So, it can be believed that part of the life strategy is taking actions aimed at changing the cultural environment towards one that will be more compatible to the predispositions of the individual and which allows it to achieve important biological goals. Therefore, relations between life strategies, the environment and the characteristics of the individual are multidirectional in nature, and their analysis seems to be a prerequisite for understanding the complexity of criminal behavior.

Offenders are characterized by a general preference for risk, low ability to defer gratification, external locus of control and non-restrictive socio-sexual orientation (Raine 2013). It is also assumed that, in connection with their characteristics, they have relatively small opportunities to achieve a stable family situation within long-term, monogamous relationships. They generally have a tendency to promiscuity, which amplifies the intensity of the fast life strategy (Kruger et al. 2015).

It is worth mentioning that various aspects of psychosocial characteristics of criminals, which are indicated by the life-history theory, are of course also present in classical criminological theories. For example, according to Katz (1988) and Gottfredson and Hirschi (1990), the essential features of common criminals are: hedonism, lack of self-control, focus on the present, impulsiveness, inability to plan and defer rewards. Sampson and Laub (1993) point to the negative role of the unpredictability of the environment in which a child is brought up, emphasizing that the low level of parental supervision, inconsistent educational methods, strict discipline and a weak bond of the parents with children are factors directly related to crime in adulthood. In a recently published study, Travis C. Pratt suggests that it may be cognitively promising to combine perspectives which create theories of self-control and theory of the life path. According to Pratt (2016), the level of self-control affects making key choices, coping with difficulties and sensitivity to manifestations of social control at every point of the individual's life path.

In contrast, the research of Zimbardo and Boyd (1999, 2009) shows that present hedonistic orientation is a predictor of deviant behavior, including criminal. One of the characteristic features of criminal thinking is, according to Walters (1990, 2005, 2006), *power orientation*, which characterizes mainly those people adopting a fast life strategy. Many studies (among others, Wilson and Daly 1997; Anderson 1999; Topalli, Wright 2004) show that juvenile and young offenders expect that they will die young, so they do not plan the future.

The theory of life history outlined above indicates a deep, evolutionary substrate of crime. Biological conditions are certainly an important aspect of the genesis of crime. Knowledge about taking a fast life strategy in unpredictable and harsh environmental conditions can also be used for designing prevention and rehabilitation measures. As emphasized by Brezina, Tekin and Topalli (2008), crime prevention programs should include the role of a stable, safe environment in the

course of socialization and place emphasis on the development of an internal locus of control and optimistic attitude towards life. It seems important also to include in the practice of social rehabilitation the process of cognitive restructuring (Opora 2009; Mudrecka 2015). Identifying and correcting cognitive distortions, as well as training alternative forms of behavior can be a counterweight to the cumulative risk factors, which work especially on juvenile offenders.

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