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Modifications of the Prison Environment – Postulates Inspired by Evolutionary Psychology

Abstract

The conditions of imprisonment in Polish prisons make it difficult to achieve the goals of penitentiary social rehabilitation. Adaptation to prison conditions, which occurs especially as a result of long-term stay in a closed-type prison, results in disadaptation to the conditions in freedom and usually leads to degradation of the prisoner's personality. An important reason for this is the unnaturalness of a environment. It is almost totally incompatible with human nature due to its radical difference from the environment in which the human mind evolved. In the article, the authors present an initial evolutionary oriented diagnosis of environmental factors responsible for low effectiveness of penitentiary social rehabilitation. The article contains also suggestions of modifications that may increase the level of its effectiveness.

Keywords: prison, imprisonment, evolutionary psychology, environment, change

Introduction

Article 67 of the Polish Executive Penal Code states that “Performing a penalty of imprisonment is aimed at arousing the will of the convict to cooperate in shaping his socially desirable attitudes, in particular the sense of responsibility and the need to comply with the legal order and thus refrain from returning to crime”. However, the conditions of execution of this sentence, at least those prevailing in Polish prisons, make the implementation of this postulate difficult. This is due, among other things, to their severity.

In prison, an inmate experiences deprivation of basic needs in the physiological, emotional, cognitive, social, aesthetic and spiritual dimensions (Piotrowski, Florek, 2015).

1. The Prisoner's Situation and Penitentiary Social Rehabilitation

It is impossible to list all the restrictions that the prisoner is subject to. However, it is enough to mention a few of them to realize that he/she is in an unbearable situation; especially in a closed-type institution. In Poland, he is usually kept in a overcrowded cell for 23 hours a day. He is allowed to walk for an hour, but the place designated for this is usually surrounded by a high wall, and there is often a chain-

link fence over the heads of inmates. If a prisoner does not work outside the prison, he/she sometimes spends several years only in buildings, without the possibility of contact with the natural environment. This leads to the deepening state of sensory and aesthetic deprivation. The prisoner stays almost constantly with fellow inmates, who often pose a threat to him. Contacts with family and relatives are reduced to two visits a month (Executive Penal Code [hereinafter: EPC], Article 90, paragraph 6). In this situation, he is almost completely deprived of privacy. A few zlotys (just over a one euro) a day are spent on his food. All aspects of its functioning are strictly regulated and its behavior is constantly monitored. Pursuant to Article 73a, paragraph 2 of the EPC: "Monitoring, ensuring the possibility of observing the behavior of the convict, may be used in particular in residential cells with a section intended for sanitary and hygienic purposes, in baths, in rooms designated for visits, in places of employment of inmates, in communication routes, on walking plazas, as well as for observation of the penitentiary facility outside the buildings, including the line of the external fence". Paragraph 2 of this article also states that "The monitored image or sound may be recorded by means of appropriate devices".

Significantly stricter conditions of serving a sentence apply to the so-called dangerous prisoners, i.e. those who pose a serious social threat or a serious threat to the security of the prison (Article 88 § 3 point 4 of the EPC). The cells in which such inmates serve their sentence, usually single ones, are specially secured. Behavior of inmates is constantly monitored, leaving the cells is limited to the necessary needs and takes place under the enhanced supervision of the Prison Service officers, and each exit and return to the cell is subject to personal control of the convict. This situation poses serious challenges to the penitentiary rehabilitation process of prisoners, as noted, *inter alia*, by the European Committee for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment (CPT). The 2013 CPT report indicated that at-risk inmates should be provided with constructive activities outside their cells in order to increase their level of physical activity and improve the quality of social contacts (cf. Januszkiewicz, 2016, pp. 111–113).

As Lopez and Maiello-Reidy (2017, p. 1) aptly noted, „It is not feasible to expect individuals to become healthy in an unhealthy environment". The essence of the problem, however, is not just about the severity of the conditions. It consists primarily in the fact that adaptation to them means usually development of attitudes that make difficult the return to normal functioning in society after serving a sentence. This phenomenon is referred to as erroneous adaptation. Its manifestations include: apathy, submissiveness, aggressive behavior of various kinds, identity disorders, entry into the prison subculture and particularly dangerous learned helplessness (Poklek, 2018). If these symptoms take an extreme form, one speaks of prisonization, which manifests i.e. by reluctance to leave prison (Machel, 1994: see: Poklek, 2018). What's more, prisoners often suffer from personality disorders, neuroticism, experiencing also other mental disorders (Kędzierski, 2001). Staying in prison only worsens the health of prisoners, both physical and mental (Hellard et al., 2004, Altamura et al., 2015, Arroyave et al., 2017). Prisoners who spend a long time in prison develop what is known as carceral personality, whose symptom is the fear of freedom (Kędzierski,

2017). In conclusion, it can be said that adaptation to prison conditions, which occurs as a result of long-term stay in a closed-type prison, is tantamount to disadaptation to the conditions of freedom and usually with further degradation of the prisoner's personality.

An important reason for this is the unnaturalness of the prison environment in a completely literal sense, i.e. its almost utter maladjustment to human nature due to its radical difference from the environment in which the human mind evolved. The unnaturalness of prison is vivid from the point of view of evolutionary psychology, which we have adopted in this paper for the analysis of the situation of an inmate in a closed-type institution. The purpose of this analysis will be to identify the barriers standing in the way of its social rehabilitation and to present proposals for modifying the prison as an institution in the evolutionary perspective. The approach to human nature offered by evolutionary psychology offers hope for a better understanding of the prisoner's situation. It can help to rule out incorrect anthropological premises that are probably the source of problems with the effectiveness of social rehabilitation. A measure of these problems is a high level of recidivism; not only in Poland, but also in all countries where it is studied. Bracketing the complicated methodological issues involved in estimating level of recidivism, data from different countries suggest between 20% and 60% rates of reconviction within two years after release from prison, depending on the country (Fazel and Wolf, 2015).

2. The Prison Environment from an Evolutionary Perspective

Evolutionary psychology is a relatively new branch of psychology (Buss, 2001), which has been developing dynamically for about forty years. The time of its development results in concepts that refer to more and more numerous aspects of human mental functioning and are increasingly used to solve practical problems (Roberts, 2012). Evolutionary psychologists commonly adopt a modular concept of the human mind and its cognitive understanding as a natural representational and computational system (Pinker, 2005). In a slightly different, more metaphorical way, they consider the human brain to be a biological computer that has specialized programs to solve problems that have constantly occurred in the environment of the evolution of the mind. Evolutionary psychologists like to use the even more metaphorical description of the human brain/mind as a Swiss army knife, which is designed to deal with very specific life situations. This understanding of the mind's brain is in opposition to its conception as a non-specialized system, which is sometimes referred to as a general problem solver (GPS). GPS is a system that has no built-in operating programs, is extremely flexible and capable of learning almost anything.

This is an understanding of the mind that stems from the behaviorist tradition that dominated psychology in the 20th century, and which as cognitive scientists and evolutionary psychologists argue is fundamentally wrong (Buss, 2001, Pinker, 2005). It turns out that the mind has some clear preferences for learning content and ways of doing things. Perhaps the best example is the phenomenon of primed

conditioning, the discovery of which has complicated the situation of the behaviorist paradigm. It proves that the speed with which animals and humans acquire conditioned responses depends on what conditioned stimulus they are dealing with. Among other things, they learn to react with fear to dangerous animals, such as snakes, much faster than on artifacts such as electric devices. Broadly speaking, the second half of the 20th century was a time when the theory of mind as a GPS associated with the so-called Standard Model of Social Sciences (SMSS), proposing the thesis of the almost unlimited plasticity of human minds, began to crumble, and it can be said that it has now gone down in history (Pinker, 2005).

However, its widespread acceptance had many tragic consequences. It is enough to mention that the thesis about the plasticity of the human mind confirmed the communists in the belief that the idea of a classless society and the elimination of private property could be implemented. Attempts to implement it in various countries of the world resulted in millions of deaths, often committed in a cruel way. SMSS almost completely ignored the importance of genetic factors, and thus denied the existence of innate action programs built into the human brain/mind that limit the range of possible responses and hinder the acquisition of new ones. Especially those involving adaptation to an environment that does not resemble the one in which the evolution of the species *Homo sapiens* took place. Unfortunately, social rehabilitation methods were developed on the erroneous assumptions of the SMSS, including methods of penitentiary social rehabilitation.

The belief that effective punishment should be severe is one of the assumptions of behaviorism. Moreover, there is not much to criticize about it, except that the manner in which the punishment is carried out and its social and environmental context are also important. Extinguishing undesirable behavior by means of punishment applies only to the context in which it was performed. Behaviorists were to some extent aware of the existence of this regularity, but this did not translate into appropriate conclusions regarding penitentiary social rehabilitation. Particularly harmful, however, was the belief that the human brain does not have strong preferences regarding the environment and is able to easily adapt to conditions that differ radically from those in which human ancestors lived. In evolutionary psychology, in opposition to this thesis, the so-called savannah hypothesis is accepted. It is based on the assumption that the evolutionary success of *Homo sapiens* was related to the change of habitat from forest areas to savannah. This change led, among other things, to the verticalization of the body, freeing the hands, and thus enabled the use and production of tools. They were used, among others, for hunting, which enabled obtaining high-quality food in large quantities. The benefits of hunting have created the selective pressure that promoted cooperative behavior of hunters. Everything seems to indicate that life on the savannah resulted in the development of human competences, especially the ability to think and cooperate, which were necessary for hunting and tool making (Tomasello, 1989).

Evolutionary psychologists (Buss, 2001; Pinker, 2005) associate the savannah hypothesis with a preference for a savanna-like environment. It turns out that it is manifested by all people, regardless of the environment in which they were brought

up (Buss, 2001). The savanna is rich in plants that can be a source of food and whose presence signals the abundance of water necessary for survival. Vegetation attracts animals whose meat provided people living in the savannah with all the amino acids necessary for proper functioning of their bodies.

This hypothesis is complemented by Jay Appleton's (1975) prospect-refuge theory. According to it, people prefer environments in which they can observe the surroundings from hiding. This allows to detect potential resources while avoiding becoming prey to predators or other humans. It is worth noting that the savannah usually meets the criteria indicated by Appleton, i.e. it provides the opportunity to observe the terrain and see objects from a long distance, thanks to which one can hide or take up hunting activities before being noticed. For this reason, people prefer places where the trees grow with low-lying branches that can serve as a vantage point or shelter from some predators, and the grass isn't too tall so it doesn't make it hard to see opportunities and threats.

Ignoring the importance of biological factors, including neurobiological ones, is also the legacy of behaviorism and the SMSS founded on it. Nowadays, there is no doubt that recidivists with dissocial personality convicted of crimes against life and health have specific brain deficits. They are found i.a. in the ventromedial prefrontal cortex, dorsolateral prefrontal cortex, orbitofrontal cortex, and amygdala (Canavero, 2014). It is also known that so called Young Male Syndrome has neurobiological background (Wilson, Daly, 1985; Florek, 2015; Florek, Piotrowski, 2017), manifested by the fact that young men are more likely than any other group to be victims and perpetrators of homicide. Young Male Syndrome results from the later maturation in males of the brain regions responsible for undertaking risky behavior and anticipating the consequences of actions. This phenomenon has so far been considered mysterious by leading criminologists (Florek, 2015; Florek, Piotrowski, 2017), but for evolutionary psychologists it is clear that it is the consequence of strong competition between young men aimed in phylogeny at gaining resources and position in social group to attract partners and have numerous offspring. In this way, the genes responsible for this particular manner of brain functioning during adolescence, which from a moral and legal perspective is pathological, became popular in the male population.

3. Modifications of the Environment of Penitentiary Institutions

Prisoners have no contact with nature, which has many destructive consequences in terms of their problems in prison and with respecting the law after leaving it. Firstly, the absence of natural stimuli leads to a syndrome described by Richard Louv (2005) as nature deficit disorder. Among its symptoms, Louv lists attention deficit disorder, anxiety and depression. The results of studies conducted on the prison population show that these types of problems are more often found in prisoners than in the general population (Young et al., 2018, 2018a).

Introducing nature-related stimuli is relatively simple and does not have to be expensive. Appropriate colors can be used (Šefčić, Jandrić Nišević and Meić, 2022), also taking into account the places of their occurrence in the natural environment. According to this logic, the floors and lower parts of the walls should be painted in shades of green, the upper parts in blue and sometimes yellow. An even better option seems to be educating artists before they decorate the prison. Many penitentiary units have already implemented such projects, and their effects have been positively received by inmates (Piotrowski and Florek, 2015; Florek and Piotrowski, 2022). As part of the international project Arts of Freedom coordinated by the Croatian Association of Fine Artists, a book was published that i.a. specifies how such projects should be implemented in prisons (Šefčić, Jandrić Nišević, 2022). The idea of introducing stimuli related to nature can also be implemented by placing photos, photo wallpapers and screens depicting natural landscapes in the prison space (Florek and Piotrowski, 2022). Virtual reality (VR) can also be used for this purpose. VR glasses can take prisoners to “the bosom of nature” (Florek and Piotrowski, 2022). The presentation of this type of stimuli may be accompanied, at the request of inmates, by the emission of appropriate sounds of nature.

The use of such solutions would likely reduce the physical and mental health problems associated with confinement in a cell that hinder normal movement and perception of distant objects. This is of particular importance in the context of Appleton’s (1975) theory. The combination of VR glasses technology with treadmills would allow prisoners to exercise not much different from that in the “outdoors”.

In some prisons, plexiglass screens are installed in the windows in order to make illegal communication more difficult for inmates. They are semi-transparent so they allow modified light to pass through but prevent people from seeing what is going on outside. Prisoners are obviously not happy with this solution. One of them confessed to a psychologist conducting scientific research in a prison that in his cell this screen had a small crack that enabled him to observe a chimney in the distance. The prisoner was very pleased with this fact, because staring at the chimney calmed him when he needed it. Among other things, he was able to mentally cut himself off from aggressive behavior of his fellow inmates (Florek, 2021). This case shows both the high level of deprivation experienced by inmates and the fact that observing distant objects can reduce mental tension experienced by them, what is extremely important in a prison where there are many sources of negative arousal.

In Polish penitentiaries, inmates have the possibility, at most, to mentally cut themselves off from what bothers them in their cell. Looking at this problem not only from the perspective of Appleton’s (1975) theory, but also in the context of other empirical findings, it is important that prisoners are able to isolate themselves from threats in the literal sense as much as possible. This may be achieved by appropriately modified sleeping places in the cell, where the prisoner could close himself, although he would be constantly monitored by the prison staff.

Such a solution, in addition to increasing the security of prisoners exposed to attacks from fellow inmates, could also satisfy the need for intimacy to some extent. If such a solution is not possible, at least care should be taken to ensure that sleeping

places are arranged in such a way as to allow the prisoner to see the entire cell, while at the same time preventing him from being approached from any direction, e.g. in corners cell.

An important issue from the perspective of evolutionary psychology is also the question of lighting the cell. In the natural environment, human activity was determined by sunrises and sunsets, thanks to the sophisticated brain mechanisms that unfortunately fail in a culture-modified environment, and therefore also in prisons. This is a consequence of the phenomenon known as evolutionary lag, which assumes that changes in the human genotype, and consequently in a phenotype of which the human brain is the most important part, cannot keep up with the changes in the environment that result from cultural development (Buss, 2001).

The light reaching the retina of an eye during the day is white light, which includes, among others, electromagnetic waves with a frequency of about 440 Hz, i.e. the so-called blue light. The presence of this type of light is registered by the supra-chiasmatic nucleus in the brain, responsible for the circadian cycle and regulating the sleep and the waking state (Kalat, 2006). Restricting the access of natural light to the cell, or the use of artificial light, practiced for security reasons, may have serious negative consequences for the mental functioning of inmates. Exposure to blue light after dark disrupts the rhythm of sleep and wakefulness. The source of this light are also TV monitors and computers, which prisoners use very often, if they have the opportunity to do this. Much empirical data supports the thesis that prisoners experience sleep deprivation (Morris, Holliday, & Binder, 2021). Sleep has many important functions; its disorders negatively affects cognitive and emotional functioning. It can, among other things, lead to irritability and dysphoria, and consequently to aggression, and in the long run it is responsible for serious mental disorders, including those of a psychotic nature. Of course, the best way to solve the problems described above in the spirit of evolutionary psychology, would be to allow inmates to stay outside the cell, preferably in a non-urbanized area. It would be especially valuable to enable them to work in a natural environment.

Performing any work by prisoners seems to be a particularly important element of social rehabilitation from the perspective of evolutionary psychology. This is so for many reasons. First, resource seeking has almost always been, with the possible exception of the last few millennia, an essential condition for survival, group positioning, and reproduction since the appearance of *Homo sapiens*. It can therefore be assumed that the lack of such a possibility will cause at least psychological discomfort. Secondly, performing work protects against the development of learned helplessness, especially if, thanks to the performance of work, prisoners can achieve goals important to them: e.g. to obtain funds to buy better food or to settle maintenance obligations towards relatives or persons injured by their crimes.

Acting for others, and in particular for those who have been harmed by an individual, seems to be a natural way for primates to reconcile and obtain forgiveness of guilt. Atonement by working for the victim seems to be a form of punishment that goes hand in hand with the feelings and moral intuitions of average people. Exercising the penalty of imprisonment in this way would also be a good way of preparing

prisoners to live a normal lives, i.e. it would solve the problem of incorrect adaptation. It is impossible not to mention here that in the course of scientific research that we conducted, prisoners in closed wards, almost without exception, particularly appreciated the possibility of doing any job for many reasons. Among other things, it made it easier for them to deal with the excess of free time and proves that the need to act is built into the human brain. After all, those who refrained from acting in the environment of the evolution of the mind, are not our ancestors.

The particular value for prisoners could have taking up a job that enables the development of affective empathy, the lack or deficit of which characterizes criminals with dissocial personality who are a particularly numerous group among recidivists (Florek, 2007). Under appropriate supervision, they can work for the disabled or in animal shelters – such penitentiary programs have recently appeared in penitentiary social rehabilitation (Furst, 2006). It is worth mentioning that the development of modern technologies makes it possible to replace guards with remote monitoring systems and artificial intelligence systems (Florek and Piotrowski, 2021). It should also be noted that the proposed solutions are also supported by the fact that serving a sentence with the use of an electronic monitoring system turns out to be a much more effective way of social rehabilitation than serving it in a prison (Poklek, 2018).

In the light of the findings of evolutionary psychology, there is no doubt that the specific brain of criminals with dissocial personality can be considered the result of an evolutionary process, which is referred to as frequency-dependent selection (Buss, 2001). If a certain strategy is definitely dominant in the population, e.g. cooperation and pro-social behavior, then it becomes profitable to act in accordance with an alternative strategy, which in this moral context is rivalry and dissocial behavior. From this perspective, the brains of some criminals can be considered an adaptation to life in an environment dominated by more or less naive cooperators. In their case, even performing work that requires empathy may turn out to be a definitely insufficient way of social rehabilitation.

Neurobiologically and evolutionarily oriented researchers suggest pharmacotherapy, surgical procedures or the use of brain implants (Canavero, 2014). The results of clinical trials on this type of solutions show promising results (Canavero, 2014). There is no doubt, however, that the use of these methods in practice, of course with the consent of the prisoners, requires much further research and extreme caution. Reckless surgical interventions undertaken for social rehabilitation purposes have an infamous history that cannot be forgotten.

It is also worth considering whether, if the violation of the law is the result of brain dysfunction or damage or mental illness, involuntary psychiatric treatment should be used instead of imprisonment, even if perpetrator was sane in the moment of his/her crime. However, it is a matter of adapting legal solutions to the current knowledge on the neurobiological determinants of crime. New legal regulations are also required for the treatment of male young offenders whose brains are not fully

mature and for this reason poor adapted to social system of moral and legal restrictions (Florek, 2014).

Conclusions

The above analysis is preliminary and selective. It is only a starting point for further research in the spirit of evolutionary psychology, that shall be conducted to identify factors responsible for the low effectiveness of penitentiary social rehabilitation carried out in closed, semi-open and open facilities. There is no doubt that the complete list of such factors includes many others that are not indicated in this article. The key to detecting them is probably to focus on these prison conditions that are extremely different from the natural ones. This requires, above all, further empirical investigations. We hope that the above findings and suggestions may be helpful to design them.

To sum up, it can be said that the introduction of a modern vision of the prison system, based, inter alia, on contact with nature, works in practice. This can be seen, for example, in Norway. Such prisons as the one on the famous island of Bastøy or in Halden apply solutions aimed at changing the penitentiary institution into the healing environment (cf. López and Maiello-Reidy, 2017). This fact is reflected in the indicators concerning the level of recidivism, which in Norway is the lowest in the world at 20% within two years after leaving prison (Yukhnenko et al., 2020).

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