

Evolutionary-Based Aspects of the Optimal Social Functioning in Prison

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Editorial

From an evolutionary perspective, prison environment represents a complex mixture of selection pressures regarding individuals' decisions at level of interpersonal social networks, by bringing together individuals that are not familiar with each other and who have different social abilities and inclusive fitness-related traits. *Inclusive fitness* refers here to the abilities and traits of an individual organism to survive and pass on its genes through direct reproduction and/or by investing somatic effort and other types of resources in his/her relatives [1]. The strategies by which an organism is able to produce descendants are usually framed within the Life History Theory (LHT), which maintains that any available resources in any particular environment are finite [2-4]. From the LHT perspective, two main reproductive strategies are identified in animals, including humans: (1) The K-selected strategy, which consists in producing a smaller number of offspring with higher chances of survival, and (2) The r-selected strategy, which consists in the production of a large number of offspring, of whom only a minority may survive [3,5]. High-K strategy is defined as a fitness strategy by which individuals allocate resources in the parental (investment in offspring) and somatic (growth and development) effort to produce a smaller number of descendants that will become reproductively competitive [3]. These reproductive strategies are generally associated with psycho-social traits of the individuals, such as cognitive, emotional and behavioral traits [4]. Specifically, such traits considered to be associated with high-K strategies in humans are: long-term thinking and planning, commitment to long-term relationships, extensive parental investment, existence of social support structures, adherence to social rules (e.g., altruism and cooperation), and consideration of risks [3].

High-K strategy in human individuals can be manifested through the following dimensions, which can be measured by standard instruments such as High-K Strategy Scale (HKSS; [3]): (1) Preserving or increasing health of self, offspring and kin; (2) Achieving upward mobility, which may translate into better access to healthcare, educational, and career opportunities for the offspring; (3) Social capital, which may translate into receiving help from others when in need, and (4) Careful consideration of risks [3]. High-K strategy is also associated with several personality traits, such as conscientiousness, extraversion, agreeableness, low neuroticism, which are also important to

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an individual in terms of achieving and maintaining an optimal level of social success and functioning [6]. Recent data indicate that mental illness has a negative effect on fitness. For example, depression [7] and schizophrenia are associated with a decreased fitness (i.e., low fertility, no or low number and descendants, high risk of the descendants to develop mental conditions). Also, the study of Giosan [6] on a sample of 1400 participants indicates an association between the high-K strategy and some mental conditions, such as: posttraumatic stress disorder, sleep disorders, anger and functional disabilities. Results confirm that the high-K strategy is a negative predictor for psychopathology, in terms that a low score on the High-K Strategy Scale indicates a decreased fitness value and it is associated with severe symptoms of posttraumatic stress disorder [6].

Various correlates of the social functioning in prison have been addressed in the literature, such as: the personality traits of the inmates, psycho-affective vulnerabilities, socio-familial context, behavioral management in detention, etc. [8-11] The aspects investigated so far reflect not only the high level of psycho-social heterogeneity of the prison environment, but also the level of complexity of the process of planning efficient strategies for the prevention of self- and hetero-aggressive behaviors in detention. Up to date, there are no studies concerning the evolutionary significance of the dimensions associated to the

optimal dynamic of social interactions in prison environment, specifically their functional value for the survival struggle in this specific environment, in which the most probable resources to be controlled by the inmates are those directly related to their survival, i.e., social interactions that are posing the highest risk to their quality of life.

Some of the *survival abilities* of individuals in detention are *visible (conspicuous)*, i.e., they can be easily evaluated by other inmates without necessitating long-term interactions, such as: age, gender, voice, physical appearance, body mass, general health, access to social support (family and friends visits). Others survival-related abilities are *less visible (hidden)* at a primary evaluation, requiring time and longitudinal social interactions (e.g., ability to recognize emotions in specific contexts, emotional intelligence level, interpersonal dominance or submission tendencies, etc.). Both categories of abilities can be investigated as predictors for the behavior of individuals in detention, thus pointing out the need for their inclusion in the professional screening forms of newly convicted persons, especially when dealing with individuals with a known history of aggression.

Aggression seems to be costly in the prison environment not only at an individual level, but also at the level of organization and mobilization of human resources of the penitentiary. Although from an evolutionary perspective, aggressive behavior is useful for self-defense and resources protection [12], it still remains one of the behaviors posing the highest risk on the quality of life of incarcerated persons, both at physical and a psychological levels, being often associated with self-harm and suicide in victims of aggressions [13,14]. Violence is considered a major problem in prisons and it is frequently associated in the literature with deficits in the *facial emotion decoding accuracy* [15]. Emotion identification errors, especially anger, are significantly associated with *attribution of instrumental value to aggression* in social contexts. Thus, a high level of aggressive attitudes and verbal aggression can be often associated with misperception of anger even in its absence [16]. Also, individuals with propensity for violence (which are frequently met in prison environment) have a higher probability of inadequately interpret subtle social cues, such as facial micro expressions of emotions [15]. According to the *social information processing model* [16,17], errors in emotion decoding accuracy could affect individuals' ability (especially of those predisposed to violent behaviors) to access and employ

alternative adaptive responses to social situations, which in turn can favor the process of accessing primary phylogenetic strategies, such as violence. In the case of incarcerated persons there are data indicating that the ability to recognize facial expressions of fear and anger is reduced in inmates with a higher number of arrests and with a history of aggression [16]. From an evolutionary perspective, the ability to optimally detect facial expressions of emotions, in particular those associated with anger, is hypothesized to have enhanced the chances of survival and reproduction of our ancestors in the environment of evolutionary adaptedness, anger being the main indicator of the intention to aggress another individual [15]. Data referring to the preparedness of humans to quickly detect vocal and facial expressions associated with anger indicate the fact that natural selection has molded this ability in association to responses to survival-related situations [18].

Another important factor associated with optimal social functioning in prison appears to be the level of *emotional intelligence* (EI). EI seems to be a relevant factor for accessing strategies of responding to social situations other than the primary answers such as quick and violent behaviors. The *social-cognitive theory of power* [19] posits that the ability to perceive others, which is an important component of EI, plays an important role in the social functioning outcomes. According to this theory, individuals situated in positions of power tend to perceive the others in a non-individualizing, stereotypical manner. On the other hand, less powerful individuals (i.e., submissive individuals) seem to be favored by individualizations of others because they consider interpersonal relationships as depending on the more powerful individuals and on the interaction partners in general [19,20]. Having access to emotional signals and decoding them correctly affords humans better chances of evaluating the attitudes and intentions of others [21,22], of determining if social conflict is imminent [23] and of adjusting interactive behavior in accordance with the perceived emotions.

Consistent with the aspects presented above, it is recommended that, besides the standard psychological screening forms that are generally used in prisons, assessments of Emotional Intelligence, emotion decoding accuracy and individual inclusive fitness should be taken into consideration as bio-psychological and evolutionary predictors of optimal social functioning in the prison environment.

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