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PSYCHOPATHY AND A MODEL FOR DISTURBED AFFECTIVE CONSCIOUSNESS

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ABSTRACT

This article deals with the interaction of emotion and consciousness. It focuses on the perception of fearful stimuli and how such a perception can have implications for psychopathy. Amygdala has been found to be lesioned in the disorder and this compromise of integrity leads to deficits in fear perception, moral socialization and curtailing of aggression. This in turn leads to deficits in adaptive behavior as amygdala is responsible for influencing motor and perceptual responses in response to a fearful stimulus. Amygdala also plays an important role in bringing a fearful stimulus, detected at the attentional periphery, to the focus of attention and awareness so that it can receive enhanced processing which is found to be deficient in psychopathy. This role is supported by its connectivity to different cortical and subcortical areas. Hence this article provides an emphasis on the disturbed affective consciousness of psychopathy and its role in adaptive behavior deficits.

Key words: *psychopathy; fear processing; amygdala; moral socialization; aggression; consciousness.*

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RESUMEN

Este artículo tiene que ver con la interacción entre emoción y conciencia. Se enfoca en la percepción de estímulos que producen miedo y cómo dicha percepción puede estar relacionada con la psicopatía. Se ha encontrado que la amígdala se encuentra lesionada en desórdenes psicopáticos y que este compromiso de su integridad produce déficits en la percepción del miedo, la socialización moral, y en la reducción de la agresión. Esto a su vez produce déficits en la conducta adaptativa, en la medida en que la amígdala influye en las respuestas motoras y preceptúales a estímulos de miedo. La amígdala también juega un papel importante al hacer que estímulos que producen miedo que son percibidos en la periferia se conviertan en focos de atención y conciencia de modo que puedan ser objeto de procesamiento adicional, un proceso que resulta deficiente en la psicopatía. Este papel se ve apoyado a través de conexiones con diferentes áreas corticales y subcorticales. Este artículo se enfoca en la conciencia afectiva perturbada típica de la psicopatía y su papel en déficits conductuales adaptativos.

Palabras clave: *psicopatía; procesamiento del miedo; amígdala; socialización moral; agresión; conciencia.*

INTRODUCTION

Recently it has been argued that consciousness and emotion interact tremendously (Tsuchiya & Adolphs, 2007). Since the emotional processes interact with consciousness, such an interaction can also have implications for cognitive and psychiatric disorders where the emotional processes have been found to be not normal. The aim of the present article is to show what implications such an interaction can have for the disorder of psychopathy. First the interplay between consciousness and emotions will be described before applying the description to explain the suboptimal processes in the disorder. For simplicity, the review will only focus on fear processing.

A MODEL OF INTERACTION BETWEEN EMOTION AND CONSCIOUSNESS

There are some stimuli the perception of which is important for adaptive behavior for instance, an emotional face. Adaptive behavior requires that some processing takes place independently of attention and awareness so that attention could be guided towards those events so that these events ultimately receive

enhanced processing due to their saliency even when those events occur outside the focus of attention. Hence, emotional faces conveying threat signals enjoy such privileged status (Vuilleumier, 2002).

The amygdala plays an important role in fear processing. It receives highly processed information from the visual cortical pathways and also crude information through a direct subcortical pathway via the thalamus involving the retinocollicular and the pulvinar projections. The direct pathway provides fast signals about potential threat in the environment for instance a fearful face bypassing the slow and fine analysis of the visual cortex. Amygdala also has direct connections with the fusiform cortex and sends projections back to visual, orbitofrontal and the medial prefrontal cortex, anterior cingulate gyrus, striatum and basal forebrain nuclei. These projections enable the amygdala to influence perceptual and motor processes in response to a threat cue once it is identified (Vuilleumier, 2002). This arrangement of connections can help bring the threatening face into the focus of attention and awareness, when detected at the periphery of attention.

It has also been shown by Pascual-Leone and Walsh (2001) that conscious experience depends as much on the lower anatomical regions as on the higher ones but the lower processing anatomical regions participate at a later point in time. Thus areas like the early visual cortices and the amygdala and other structures engaged very early in processing contribute to conscious experience but during a later iteration of processing when the activity driven by the stimulus can be compared with activity driven by feedback from higher regions. This supports the role of amygdala in bringing the fearful face detected at the periphery of attention at the focus of attentional and conscious processing.

DISORDER OF PSYCHOPATHY

According to Blair (2001), psychopathy in both childhood and adulthood, is based on high scores on clinically based rating scales. The psychopathy-screening device (PSD) for assessing children and for adults, the revised psychopathy checklist (PCL) is generally used. Factor analyses based on both the PSD and PCL reveal two independent factors: (1) an emotion dysfunction factor defined largely by emotional shallowness and lack of guilt and (2) an antisocial behavior factor defined largely by the commission of a wide variety of offence types. Socioeconomic status and IQ are correlated with scores on the antisocial factor, but neither is associated with scores on the emotion dysfunction factor. This happens as scores on the emotion dysfunction factor seem to be determined, to some extent, by different influences than scores on the antisocial behavior. Scores on the antisocial behavior factor also decline with age but scores on

the emotion dysfunction factor remain constant with age.

Psychopaths have been shown to suffer from amygdala lesions consequently showing impairments in processing fearful expressions (Adolphs et al., 1999). Since the amygdala plays an important role in modulating attention and consequently influencing perceptual and motor responses in response to a fearful face that is detected at the periphery of attention after bringing it into the focus of attention for the purpose of influencing adaptive behavior, it is quite possible that the psychopaths suffer from deficits in awareness and consciousness related to the experiencing of a fearful face which needs to be investigated. It is quite possible that the deficits that the psychopathic people show in their behavior are because their responses are not modulated by the detection of fearful faces.

According to Blair (2001) fearful faces serve as unconditional stimuli that help in achieving moral socialization and thus curtail antisocial behavior and aggression shown on the part of the psychopaths. This is because the fearful expression shown on the face of the targets of aggressions arouses empathy in the transgressor by focusing his or her attention on the victim and an intact amygdala is essential for this purpose. Amygdala is also shown to be important not only for the detection of fear but also for aversive conditioning and instrumental learning, two processes that are important for moral socialization (Fowles & Kochanska, 2000) and psychopaths show deficits in both the processes (Blair, 2001).

In order to learn that hitting another person is bad; a representation of this action must be associated with an aversive unconditioned stimulus (in this case, distress and fear shown by the victim), a process that is achieved through aversive conditioning. Also, learning to avoid committing moral transgressions involves either personally committing these or viewing another person commit these and then being punished by the aversive response of the victim's distress; this type of association involves instrumental conditioning/passive avoidance learning (Blair, 1995).

Thus the psychopaths would suffer from dual deficits in such a scenario. They neither have the benefits of preconscious processing of the fearful face nor the full blown benefit of conscious processing of such faces. Since the amygdala plays a role in conscious experience though at a later stage of temporal processing (Pascual-Leone & Walsh, 2001) this might imply deficits in conscious awareness of psychopaths leading to their deficits observable in behavior.

CONCLUSION

This article emphasizes the role of lack conscious experience of fearful faces as playing a major role in the adaptive behavior deficits shown by psychopaths. The lesions in the amygdala found in the disorder not only

interfere with the perception of such stimuli but also interferes with moral socialization of the psychopaths. This happens as two processes that are important for the development of moral socialization namely, instrumental conditioning/passive avoidance learning and aversive conditioning are dependent upon the integrity of the amygdala. Future research carried out within the proposed disturbed affective consciousness framework of the disorder can be very fruitful in highlighting the underlying deficits and can also provide a glimpse of the internal world of the psychopaths.

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