Decision Making In Adolescents

INTRODUCTION

There has long been a dilemma with adolescents and a common theme of making “bad decisions”. Many attribute this to hormonal changes and a progression of puberty. However, it raises curiosity as to if there may be an underlying justification as to why this prevails. Is this an environmental cause? Is it a result of evolving or an adaptation to one's environment? Nevertheless, this essay tackles whether or not “bad decision making” in adolescents can be attributed to biological and psychological factors. Hence the research question “To what extent do biological factors affect negative decision making in adolescents?”

The reasoning behind this choice of topic is that with a deeper understanding of the mechanics of adolescent’s choices, we can further understand the thought processes of said adolescents. As a result a prevention of “bad decisions” can occur, for example in an adolescent’s susceptibility to peer pressure in crime. As a whole a better understanding results in awareness, not only for adults but also adolescents themselves. Puberty can prove to be a difficult time with many changes occurring, putting adolescents in positions of disorientation. With that understanding adolescents can attribute their decision to the findings.

Statistics show that criminals aged 13 and under are more likely to commit crimes in groups as opposed to their 16-17 year old counterparts. Research also shows that 40 percent of juvenile offenders commit most of their crimes in groups.

The sourcing in this essay was predominantly taken from university and scholar links, Experiments, research essays etc. was analysed and chosen for the assurance of avoiding warped information. The thesis of the essay is that although biological factors do seem to play a role in adolescents’ decision making, peer influence seems to have a more significant impact. Albeit this is dependent on ones take on the term “negative (or bad) decision making”. Thence to simplify a large emphasis is placed on crime as it is a universal custom that crime is “bad”.

DEVELOPMENT IN ADOLESCENTS

Adolescence in itself is considered the stage of transition from one´s childhood to adulthood typically ranging through the ages of 13 to 19. However the physical attributional changes that occur in adolescence can begin earlier, during the preteen years 9 to 12. Adolescence is an epoch of development that can be characterised through suboptimal decisions or actions that may lead to an increase of incidence in a variety of dilemmas such as unintentional injuries, drug abuse, violence, sexually transmitted diseases, alcohol and unintended pregnancy.

The development of the human brain proceeds in stages generally from the back to the front. Certain regions of the brain reach maturity earlier than others, through processes of pruning and proliferation. This is basically a procedure of elimination of the brains extra synapses, pruning, and the rapid growth or dividing of cells, proliferation. These regions are positioned in the rear end of the brain mediating direct contact with the environment through controlling sensory functions such as; hearing, spatial reasoning, vision and touch.

Next are the areas which coordinate those functions: the part of the brain that aids you, for example, in instances such as when you are searching for a light switch in a dark room. The final part of the brain that is pruned and shaped to its adult magnitude is the prefrontal cortex, the harbourer of the purported executive functions- planning, organising thought, setting priorities, weighing the consequences of one's actions, suppressing impulses. In other words, the final part of the brain that undergoes full development is the part capable of deciding.

'Scientists and the general public had attributed the bad decisions teens make to hormonal changes,' said Elizabeth Sowell, a neuroscientist from UCLA who has done seminal MRI work studying the development of the brain. 'But once we started mapping where and when the brain changes were happening, we could say, aha, the part of the brain that makes teenagers more responsible is not finished maturing yet.' Adolescents are underdeveloped and not fully mature hence why a lack of judgement can persist in decision making. The theory then is that with age and with reaching maturity, those dilemmas should not exist. However the influences could be different. With age comes experience, something attributed heavily with learning. The effect can come from experience and adapting to environments, knowing how to act when to act, what is right for a certain period of time. The quick judgement needed that is in lack of due to not being mature. However something else we know for a fact is that the areas not mature in adolescents, are the ones characterised with quick judgement, decision making etc.

ANALYSIS OF EVIDENCE

A common occurrence in the place of “immature” decisions made by young adults or teenagers is that their decisions are often overlooked, with the custom of them “just being teenagers”. It is also well documented that adolescents are more likely to engage in more riskful activities as opposed to their adult counterparts. For example, they are more likely to have unprotected sex, drive under intoxication, use varied illicit substances. They are also more likely to engage in more serious, and minor, antisocial behaviour. (Arnett 1992)

Cauffman and Steinberg (2000) reported that when a difference of psychosocial maturity between adults and adolescents is accounted for, the differences that we presumed to have existed between the counterparts (risky decision making) disappears. Instead more emphasis is placed on the role of peers, more specifically, peer influence. Meaning, adolescents may tend to engage in more risky behaviour as opposed to adults as they are more susceptible to the influence of their similarly risk-prone compeers. Support for this explanation comes, partly, from criminology literature. There is evidence that suggests that when adolescent do commit crimes- acts of inherent risk- they tend to do so along with their peers (Erickson, Jensen, 1977) (Zimring, 1998). For example, adolescents are normally with companions when committing crimes that range from drug use and vandalism (Erickson, Jensen, 1977) to rape and homicide (Zimring, 1998). However, the same does not go for their adult counterparts who typically commit crimes alone (Zimring, 1998).

Even though the risks adolescents take usually occur in the cooperation of others, it isn't known whether or not the greater prevalence of the risk taking that is observed among the adolescent’s stems from that they spend more time in peer groups (Brown, 2004). As opposed to adults, or if it is from the enhanced degree of susceptibility to peer influence that is so often characterised in adolescence (Steinberg, Silverberg, 1986). So to speak, it is still not clear whether young adults simply have more opportunities to indulge in group risk taking compared

to adults. Or if they just, when faced with behavioural decisions in peer group context, are more easily wavered toward risky choices.

There are however different findings that support the notion, indirectly, that adolescents can be easily swayed toward risky behaviour. More so than adults and compared to adults have limited abilities mainly in areas of psychosocial functioning, such as self-reliance, which most likely interferes with the fundamental ability to act independently on the influence of others. (Cauffman, 1996; Cauffman & Steinberg, 2000; Steinberg & Cauffman, 1996).

What this then indicates is that there is an external factor that can play a large role of further understanding why the adolescents make the choices they do. Adolescents are more likely to engage in what can be classed as a negative decision when surrounded by peers. The clash of psychosocial functioning such as self-reliance, and a lack of fundamental ability to act independently results in adolescents, results in adolescents being more easily swayed to risky behaviour. More so than their adult counterparts. Why is there a difference? What is said difference? Something we know is that adults and adolescents are biologically different, adolescents have underdeveloped prefrontal cortex's. That is a fact, the prefrontal cortex is attributed with decision making. That is a fact.

In the study, Peer Influence On Risk Taking (Margo Gardner, Laurence Strindberg 2005), the experimenters examined the differential effects of the presence of peers on risk taking, risk preference and risky decision making among adolescents (M age 14), youths (M age 19), and adults (M age 37). They had three primary hypotheses: Hypothesis 1. Risk preference, risk taking, and risky decision making will decrease with age. Hypothesis 2. On average, individuals will demonstrate greater risk preference, more risk taking, and more risky decision making in the company of their peers as opposed to when alone. Hypothesis 3. The difference between levels of risk preference, risk taking, and risky decision making both with and without the presence of peers will decrease with age. That is, the group effects on risk orientation will be larger amongst the adolescents than among youths, and greater amongst youths than among adults.

The risk taking in this study was assessed with a game called Chicken (Sheldrick, 2004). Chicken is played on a computer and is composed of making decisions of whether to stop a moving vehicle once a traffic light turns from green to yellow. The appearance of the yellow light signs the impending appearance of a red light as a well as a crash if the car still moves when the red light appears. Chicken was chosen as it measures risk taking in the moment instead of the more deliberative form of risk assessment that has been used in many studies, in which participant have no time limit and can evaluate and consider all potential outcomes and decisions. Also, Chicken requires the participants to make actual decisions in these risky situations instead of requiring participants to report what they would have done in a hypothetical risky situation.

The results showed, using a linear mixed model (LMM), that there was a significance of peer presence on the three measures of risk orientation. Specifically, compared to those who completed them alone, participants who completed the same measures with peers present took more risks during the game. The effects of having peers present, on both risky decisions and risk taking, varies as a function of age. That is being, the sample as a whole took more risks and made more risky decisions when in groups. This effect was significantly more pronounced during the middle and late stages of adolescence rather than adulthood. Thus, adolescents are more susceptible to the influence of their peers in risky situations.

DISCUSSION

What the research tells us is that decision making in adolescents is fundamentally different, to that of adults this we know. The research question focuses on the negative aspect of decision making but also on the biological factors. The essay however does not limit these effects to biological, as socio-cultural and psychological factors also play a role. These studies support the theory that socio-cultural and biological factors affect decision making and in turn render adolescents susceptible to making inadequate decisions. More so when in groups among their peers. We see clearly, for example in the Chicken study. The results show that participants were more likely to make “risky decisions” when among peers. Especially adolescents. We now know this, we can attribute it to that a significant number of juvenile offenders may very well be adolescents making “bad decisions”. That may not be based in malicious intent as commonly associated with crime.

The dilemma however, is that we see these results before us. We know it is happening, however the direct source or causation of the problem is harder to indicate. Every human being is different and to be able to attribute decision making and thinking among people would be extremely difficult. Phenotypic and environmental differences between adolescents can produce different decisions regardless of a presence of peers or not. Culture for example, certain customs within cultures may collide with other societies. Something that may be deemed a crime in a certain civilisation can be a normal, accepted thing in another. The idea of decision making in itself is subjective as it is hard to operationalise and apply to a majority. In its core, it is something that we all share however the extent of it is completely different in each and every individual. Hence why research in this field can prove to be very difficult.

We know that in adolescence, the brain undergoes development and does not reach its matured state until adulthood. One of the more significant effects or differences that then pertain is that the prefrontal cortex in teenagers is underdeveloped. Which is characterised with driving executive functions, such as social control, determining good and bad, prediction of outcomes, expectation based on actions etc. This is the primary unit used in decision making for adults however due to a significant underdevelopment in the region in adolescents, the amygdala is instead held to high regard in their decisions. The amygdala is the brain structure most commonly associated with emotion but it is also affiliated with guiding choice. The amygdala is also part of the limbic system of the brain and is associated with instinctive “gut” reactions and fight or flight responses.

Reed Larson, professor of psychology at the University of Illinois, explained that emotions affect how people think and behave. How they influence the information people attend to. When people experience positive emotions, they can underestimate the likelihood of a negative consequence to their actions. When they experience negative emotion, they focus on near term and tend to lose sight of the larger picture. Both adults and adolescents decision-making abilities are influenced by our emotions. Larson´s research found that teenagers experience more emotion than adults (Larson et al, 1980) (Larson and Richards, 1994)

This offers a different insight on the biological influences on adolescents’ decision making. As aforementioned, the prefrontal cortex in adolescents is underdeveloped and is something categorised with decision making. The easy thesis to draw from that is that adolescents would have trouble with decision making due to an underdeveloped prefrontal cortex. However a

different insight is that as the prefrontal cortex is underdeveloped, we “replace” its function with the amygdala. Larson´s research shows that emotion affects decision making, and also states that adolescents experience emotion more so than their adult counterparts thus strengthening the thesis of biological factors influencing adolescents’ decision making.

CONCLUSION

In short, the influences on adolescents exist in abundance. Their lifestyles are heavily influenced by a multitude of factors, and this is no exception when speaking on decision making. We can safely deduce that there is a significant difference in the means of decision making with adolescents as opposed to their adult counterparts. However the difficulty lies in pinpointing the source of said difference. We know adolescents tend to commit crimes in groups, but why? Is it biological, socio-cultural?

As we see in the essay, it is clear that adolescents were more likely to make risky decisions when surrounded by peers. Which would seemingly indicate that the influence is from the socio-cultural spectrum as opposed to biological as mentioned in the research question. However evidence also shows that, we know for a fact, the prefrontal cortex and amygdala play large roles in the result of adolescents’ decision making. The amygdala is categorised with aiding in decision making. Adolescents experience emotion more than adults and we also know that emotion can influence your decisions negatively. These are biological explanations as to why adolescents think the way they do. Why they rationalise and justify their choices to the point of acting upon them.

Based on the research showcased in this essay, we can deduct that decision making is different in adolescents compared to their adult counterparts. We can also deduct that socio-cultural factors as well as biological factors influence said decision making in ways that can put adolescents at risk of falling to negative consequences from their actions. If that is how “negative decision making” is operationalised we can deduce that negative decision making is affected by biological factors to the extent that it puts adolescents at risk of making bad decisions.

However the mechanics of how those decisions are made are attributed to different influences, such as socio-cultural ones like peer influence as aforementioned in the essay. It would be pleasant to reach a more conclusive and solidified consensus however the variables that can affect decision making exist in abundance and make it extremely difficult to pinpoint exactly what can be attributed to certain decisions.