Every-day risk-taking: Influence of impulsivity, luck, gender and age on propensity to take risks.

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ABSTRACT

Risk-taking behaviour has been studied at length, specifically with regards to it's relationship between impulsivity, luck, gender and age. However, a vast majority of studies focus on a small number of risky behaviours; drug taking, dangerous driving, gambling, risky sexual behaviour and others. Research into risks that are encountered in day to day life is lacking in comparison. The aim of this study was to investigate whether the relationships between every-day risk taking and impulsivity, luck, gender and age mirrors those found when the risk-taking is of a severe nature. Eighty-five participants of varying ages and genders completed questionnaires measuring luck, impulsivity and every-day risk taking. Regression analysis revealed that impulsivity was a significant predictor of every-day risk-taking, but that luck was not. Independent t-tests revealed that no significant difference was found between males and females for every-day risk-taking. No correlation was found between age and every-day risk-taking. These findings are explored, along with potential reasons for the lack of relationships with luck, gender and age. Methodological considerations are discussed, along with ideas for future research.

KEY WORDS:	RISK	IMPULSIVITY	LUCK	GENDER	AGE

Introduction

Risk-taking behaviours can be characterised by the possibility for either a positive or negative outcome, with a degree of uncertainty as to which outcome will occur. Whilst these outcomes may not always be equally probable, the presence of positive reward or negative consequences in undertaking an action presents an element of risk (Bartolomé et al., 2016).

For most people, risk-taking is part of life (Buunk et al., 2013) and, consciously or not, human behaviours often contain at least a slight chance of a negative outcome. Some individuals may choose to pursue risky activities as a form of pleasure, gambling, a pastime based on taking risks (Blaszczynski et al., 2015), for example. However, something as ordinary as driving a car to work, an act that many may consider to be unavoidable in today's world, also carries an element of risk (Chen et al., 2018). Indeed, Beck (1992) argues that as society progresses, the risks that intertwine with our every-day lives become ever greater in number.

Different populations have been shown to have a higher propensity to take risks when compared to control groups. Studies on gender differences regarding risk-taking behaviour have shown that males have routinely been observed to be less risk-averse than females (Crone et al., 2008; Charness & Gneezy, 2012). Through their meta-analysis of 150 studies on gender and risk-taking, Byrnes et al. (1999) concluded that the majority of previous literature points to males taking significantly more risks than females. However, they also note the caveat that the difference between genders varies depending on the type of risk taken (*ibid*.); the difference between genders when considering risky driving is more pronounced than the difference between genders regarding smoking, for example (*ibid.*). Financial risk-taking is one such domain where the gap between genders is particularly noticeable, with men often making higher risk financial choices than females (Embrey & Fox, 1997; Goldsmith & Montford, 2016). However, this difference has been found to decrease with age, with risk-taking in the financial domain reducing drastically in older age males (Hanoch et al. 2014). The disparity in risk-taking between genders could possibly be explained by differences in sensation-seeking, a trait defined by the desire for powerful sensations and experiences, with the inclination to take risks to achieve these feelings (Zuckerman, 1979). Research has shown that individuals with higher levels of sensation-seeking are more likely to exhibit risk-taking behaviours (Blinn-Pike et al., 2010; Botvin et al., 2011; Castellanos-Ryan et al., 2011), with gender differences in sensation-seeking closely mirroring those of risk-taking (Brown et al., 2013; Khodarahimi, 2015).

Age has also shown to have a significant effect on risk-taking behaviour, with many studies indicating that adolescents are particularly prone to taking risks (Arnett, 1992; Gardner & Steinberg, 2005), including drug use, accidental injury (often through car accidents) and unprotected sex (Romer, 2010). This higher propensity for adolescents to take risks is demonstrated further in Figner et al.'s (2009) study on risk-taking and age. Participants, ranging from 14-57 years of age, completed the Columbia Card Task, which involves 32 cards placed face down, with participants choosing at random to flip

cards over. Some cards have a ‘gain’ value (10, 20 or 30 points), and some a ‘loss’ value (250, 500 or 750 points), with the game ending as soon as a ‘loss’ card is flipped over. Participants could choose to end the trial at any point and claim the value that they had accrued through ‘gain’ cards. However, if the game ended through flipping a ‘loss’ card, the value shown on the card would be subtracted from their total, potentially leaving them with no points. Thus, the more ‘gain’ cards that were flipped over, the higher the risk of flipping a ‘loss’ card and effectively losing the game. It was found that the two youngest age groups (14-16 and 17-19) took significantly more risks than the adult groups, engaging in ‘high risk, high reward’ methods of participation (*ibid.*). Although this study supports the notion that teens and young adults are more inclined to take risks, it should be noted that it took place in a lab setting, with a game that may not generalise to real-life behaviour. Also, participants were paid a flat rate for their participation, so ‘winning’ or ‘losing’ the game had no bearing on them being paid more. Thus, there is an argument to be made that the trials carried no element of real world risk and therefore the findings may differ to real life observations of risk-taking.

Steinberg (2008) explains this increase in risk-taking during adolescence as a product of increased reward seeking, spurred by substantial changes in the brain’s dopaminergic system in what they title the ‘dual systems model’ (Casey et al., 2008). As we reach adolescence, the reward-sensitive regions of the brain mature, resulting in increased efforts to satisfy this desire for reward (Crockett et al., 2017). Due to the regions of the brain that are responsible for self-control and self-regulation not being as developed as the areas that strive for reward (Albert et al., 2008), an imbalance occurs where more risks are taken in order to receive pleasure, without consideration for negative outcomes (*ibid.*). This effect has been shown to be particularly salient when adolescents are in the presence of their peers (Albert et al., 2011; Beavan et al., 2017). This rise in risk-taking then decreases gradually with age, as self-regulation skills are developed (Steinberg, 2008). Cauffman and Steinberg (2000) support this hypothesis, and found that when psychosocial maturity is accounted for as a confounding variable, differences between adolescents and adults in risk-taking are reduced dramatically.

Whilst it is possible that these groups (adolescents and males) take more risks as a form of reward seeking, there is also an argument to be made that those risks may not be perceived as ‘risky’ at the time that the action is undertaken. Through Lupton and Tulluch’s (2003) interviews on risk, many interviewees reflected on past risks taken, often citing adolescence as times of increased risk-taking. Participants stated that risks were far more obvious in hindsight, elaborating that risk perception may be minimised whilst in the moment and that it becomes clearer when looking back from a more mature and responsible position (p.19). Indeed, young males have been found to perceive risky behaviours as less risky when compared to other populations (Bartolomé et al., 2016).

Lupton and Tulluch (2003) further argue that the perception and understanding of risk are not exclusively dictated by age or gender, but can also vary depending on factors such as past experiences, culture and context. For example, for the months following the September 11th plane hijackings in the US, the number of flight passengers dropped

18% when compared to previous years (Flannagan & Sivak, 2003). This reduction is associated with a perceived increase, during this time, of the risk associated with taking a flight, dissuading many civilians from boarding a plane (*ibid.*). In the same timeframe, both interstate highway travel and fatal automobile collisions in the US exceeded statistics from previous years (Gigerenzer, 2006). Gigerenzer (2006) attributes this increase in fatalities to civilians electing to forgo aviation, instead choosing to travel by car, despite estimates that a car journey of a similar length carries an increased risk of up to 65 times (Flannagan & Sivak, 2003).

Despite there being a wealth of literature linking age and gender to risk-taking, it is important to note that they are not the only variables that should be considered when examining differences in individual's propensity to take risks. Certain personality traits have also been linked to risk-taking and these will now be discussed.

Impulsivity

Impulsivity (or impulsiveness) refers to a trait defined by a tendency to undertake actions or reactions to stimuli without due consideration or deliberation of the consequences of the action to the self or others (Campbell et al., 2011; Barratt et al., 2001). Through this definition it is clear to see that impulsivity shares some characteristics with risk-taking, though Nagel and Nigg (2016) argue that a key distinction can be made between the two constructs. While both involve the undertaking of an action where there is potential for positive reward or negative consequence, risk-taking often involves more deliberation about the outcome and is driven by potential reward. In contrast, impulsivity is more aligned with the disregard of consequence and immediate action (Felton et al., 2014). This view is echoed in Lynam and Whiteside's (2001) work, where they note that sensation seeking, a construct related to risk-taking (Blinn-Pike et al., 2010; Botvin et al., 2011), is a key facet of impulsivity. However, they also propose lack of premeditation as a core construct of impulsivity, which does not necessarily exist in risk-taking (*ibid.*).
Research has highlighted that individuals with high levels of impulsivity are consistently more prone to seek out various forms of risk-taking, including risky sexual behaviour (Fejfar et al., 2000; Adams et al., 2014), dangerous driving (Cheng & Lee, 2012) and recreational drug use (Butler & Montgomery, 2004; Bornovalova et al., 2005). However, one area of risk-taking and impulsivity that is of more contention is pathological gambling, which was considered to be an Impulse Control Disorder in the DSM-IV (APA, 2000), but has since been moved to the area of the DSM-V (APA, 2013) relating to alcohol and other drug use disorders, and renamed 'gambling disorder'. While early research suggested that problem gamblers have no differences to control groups (Allcock & Grace, 1988; Frisch & Langewisch, 1998), more contemporary pieces of literature have rebuffed these claims, stating that individuals categorised as pathological gamblers do have higher levels of impulsivity (Alessi & Petry, 2003; Hagatun et al., 2012), further supporting the link to risk-taking.

Luck

Belief in luck varies from person to person, with some individuals believing that they are lucky, some believing they are unlucky, others believing they are neither, or not believing in the concept of luck at all. Although the irrationality of belief in luck has been documented (Darke & Freedman, 1997a), it is not uncommon for individuals to base their behaviour around feelings of being (un)lucky, especially gamblers (Darke & Freedman, 1997b). The idea of a 'lucky streak' is a commonly held belief in such individuals (*ibid*.), where a recent run of good fortune indicates that one will continue to be lucky in the near future. However, 'the gamblers' fallacy', another commonly held belief, which states that random events will correct themselves (*ibid*.), paradoxically contradicts this. If a coin that has shown heads 50 times previously is flipped, the chance of it showing heads again is equally likely as showing tails, yet many would believe that tails has a higher chance of showing due to previous events (Harvey & Xu, 2014).

Despite research suggesting that task performance does not differ between the 'lucky' and the 'unlucky' (Harris et al. 1997), perception of luck has been shown to have an effect on confidence in task performance, leading to increased risk-taking. Those that perceive themselves to be the beneficiaries of good fortune take more risks than those who believe that they are unlucky, in an attempt to utilise their luck to maximise their rewards (Darke & Freedman, 1997b; Kolemba & Maciuszek, 2013).

Research Rationale

Although an extensive body of research exists regarding risk-taking, studies often focus on behaviours such as alcohol consumption, dangerous driving and interpersonal aggression, in what Boyer (2006) deems to be "severe delinquent and criminal behaviors" (p. 292). Research regarding behaviours that carry an element of risk but with less severe consequences, that may be encountered in day to day life, is lacking in comparison. Although the aforementioned 'severe' risk-taking behaviours may carry heavier costs, other behaviours still exist that can have a negative impact on one's day to day life. Such 'lower stakes' behaviours may still offer potential benefits, be it monetary reward or feelings of excitement. However, due to the nature of risk, one would expect the benefit to scale with the amount of risk that is posed, with lower risks yielding lower rewards. An understanding of what may drive the desire to undertake these risky actions when rewards are less obvious can be beneficial for society, as risk-taking is generally seen as maladaptive and counterproductive (Anderson et al., 2009). The lack of research into such behaviours has prompted the undertaking of this study.

The aim of this study is to bridge this gap and investigate whether the constructs of impulsivity and luck, along with age and gender as co-variables, have a similar relationship with 'every-day' risk behaviours as they do with 'severe' risk-taking behaviours.

Three hypotheses were formed for this study;

1. Impulsivity and luck will be significant predictors of ‘every-day’ risk-taking (ERT).
2. Men will have significantly higher levels of ERT than women.
3. There will be a significant negative correlation between age and ERT.

Method

Design

The study was of non-experimental correlational design. The criterion variable for the study was risk-taking behaviour, with the predictor variables for each being impulsivity and luck. Age and gender were also used as co-variables.

Participants

Eighty-five participants took part in the study, 29.8% were male (n=35) and 70.2% female (n=50). Their ages were recorded categorically, with 55 between the ages of 18-27, 11 between 28-37, 4 between 38-47, 6 between 48-57, 5 between 58-67 and 4 aged 68+. The proportion of males and females can be seen in Table 1.

Table 1. Proportions of males and females within each age range.

Age	18-27	28-37	38-47	48-57	58-67	68+
Male	24	3	1	3	3	1
Female	31	8	3	3	2	3

Participants were recruited through volunteer sampling as an invitation to take part was posted on message boards, social media websites and handed out to friends and family of the main researcher (Appendix 6). According to Green (1991), a sample size of at least 66 would be appropriate given the number of variables (50+(8x2)). Participants were not rewarded for taking part in the study.

Measures

An online survey consisting of three questionnaires was used in this study (Appendix 2). Each questionnaire was measured using a 5 point Likert-Scale, with a score of 5 indicating that the participant strongly agreed with the statement or question, a value of 1 indicating that they strongly disagreed and 3 indicating 'neither agree nor disagree'.

The criterion variable was measured via a questionnaire written by the main researcher concerning ERT (ERTQ)This questionnaire consists of 12 statements relating to risky behaviour, 8 indicating risk-taking (e.g. I take exams without doing adequate revision) and 4 indicating avoidance of risk (e.g. I always wait for a 'green man' when I cross a busy road).

Kolemba & Maciuszek's (2013) Good Luck/Bad Luck Inventory was used to measure luck. The Good Luck/Bad Inventory consists of 10 statements, divided into 5 'lucky', (e.g. "I often experience positive coincidences"), and 5 'unlucky' (e.g. "Chance events usually go against me").

To measure impulsivity, 19 questions from Allsopp et al.'s (1985) I_7 Impulsiveness Questionnaire were used. The $\mathbf{I_7}$ also includes questions measuring 'venturesomeness'

and ‘empathy’, but these were deemed unnecessary for this study and therefore removed. The remaining questions consisted of 16 questions framed for impulsivity (e.g. “Do you mostly speak before thinking things out?”) and 3 framed for non-impulsivity (e.g. “Do you prefer to ‘sleep on it’ before making decisions?”). The original questionnaire poses each entry as a question, and so was modified to contain agree/do not agree statements (e.g. “Are you an impulsive person?” was changed to “I am an impulsive person”).

Participants also recorded their gender and age. For gender, participants were given the options of Male, Female, Other or Prefer not to say. For age, participants indicated their age in brackets (18-27, 28-37 etc.) up to the age of 68+.

Procedure

The questionnaire was administered online, via qualtrics. Prior to starting, participants were given an information sheet, which included a description of the general nature of both the study and the questions they would be answering (Appendix 3). They were also informed that, should they desire, they could withdraw at any time; this included an option to withdraw their data up to 4 weeks after their taking part, with no consequences. Participants were assured that they would be treated anonymously, and their data would be kept secure on a password protected computer accessible only to the main researcher. Participants were then presented with a consent form (Appendix 4). After giving informed consent, participants completed the sub-questionnaires one at a time. Following completion, participants were presented with debriefing information (Appendix 5) and reminded that they could withdraw their data for a period of 4 weeks after finishing the questionnaire using a unique, anonymous personal code which would be attached to their response.

Ethics

The study was approved by the MMU ethics department (Appendix 1). As previously stated, participants gave informed consent prior to taking part, with no deception, and were given the right to withdraw both during the study and after completion. All responses were kept anonymous throughout the data gathering, analysis and write up stages of the study. The questionnaire should not have caused any amount of stress greater than what would be encountered on a day to day basis.

Data Analysis

Data was collated and input into SPSS 23. Prior to analysis, questions 1, 5, 8 and 10 on the ERTQ, questions 3, 5, 6, 7, and 8 on the Good Luck/Bad Luck questionnaire and questions 5, 16 and 17 on the I_7 questionnaire were reverse scored. Mean scores for ERT, impulsivity and luck were calculated for each participant using their responses. To determine any correlational relationships between variables, Spearman’s rho was used. Independent t-tests were used to examine any differences in ERT, impulsivity and luck between genders. Finally, a multiple regression was used to analyse the predictive

value or impulsivity and luck with regards to ERT. Multiple regressions have been used in previous studies regarding influencers of risk-taking, and was therefore deemed appropriate for this study (Ben-Zur & Michael, 2007; Assaf et al. 2014) (See Appendix 7 for all relevant SPSS output). Cohen's d was calculated using CLiCals Excel based software.

Results

Reliability analysis

Each questionnaire was subjected to internal consistency analysis. Reliability for luck was found to be high α = .79, with ERT and impulsivity also having high reliability, α = .76 and α = .94 respectively.

Descriptive statistics

Spearman's correlations were computed between all variables. Significant positive correlations were found between impulsivity and ERT, $r_s(83) = .62$, $p < 0.001$, and Age and Luck, $r_s(83) = .31$, $p = 0.004$. All correlations can be seen in Table 1.

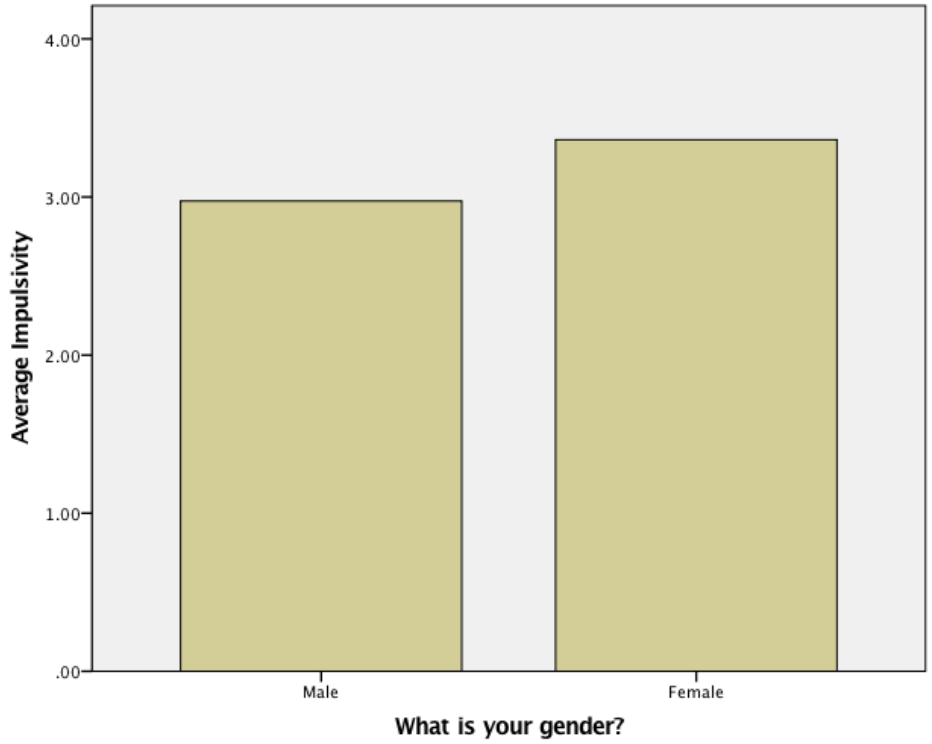
Table 1. Correlations among all study variables

Variable	ERT	Luck	Age	Impulsivity
ERT		.17*	-.19*	.622***
Luck			.31**	.04*
Age				-.11*
Impulsivity				

Note: ** indicates a non-significant result, ** indicates p <.05, *** indicates p < .001.*

Differences in means between males and females were investigated for each variable using independent t-tests. Levene's Test was non-significant, therefore equal variances were assumed. The results showed a significant difference in impulsivity between males and females, $t(82) = -2.19$, $p = .032$, $d = -0.47$, 95%CI [-0.92, -0.03], a medium effect size (Cohen, 1992). This difference can be seen in the impulsivity scores for each gender, with males having a mean of 2.97 (SD = 0.84), and females a mean of 3.36 (SD = 0.763), suggesting that females have higher levels of impulsivity than males, as seen in Figure 1. No significant differences were found between the genders for ERT, $t(82) = .44$, $p = .67$ (male mean = 2.72, SD = .76; female mean = 2.65, SD = .72) or luck, $t(82) = -.91$, $p = .37$ (male mean = 3.30, SD = .68; female mean = 3.41, SD = .60)

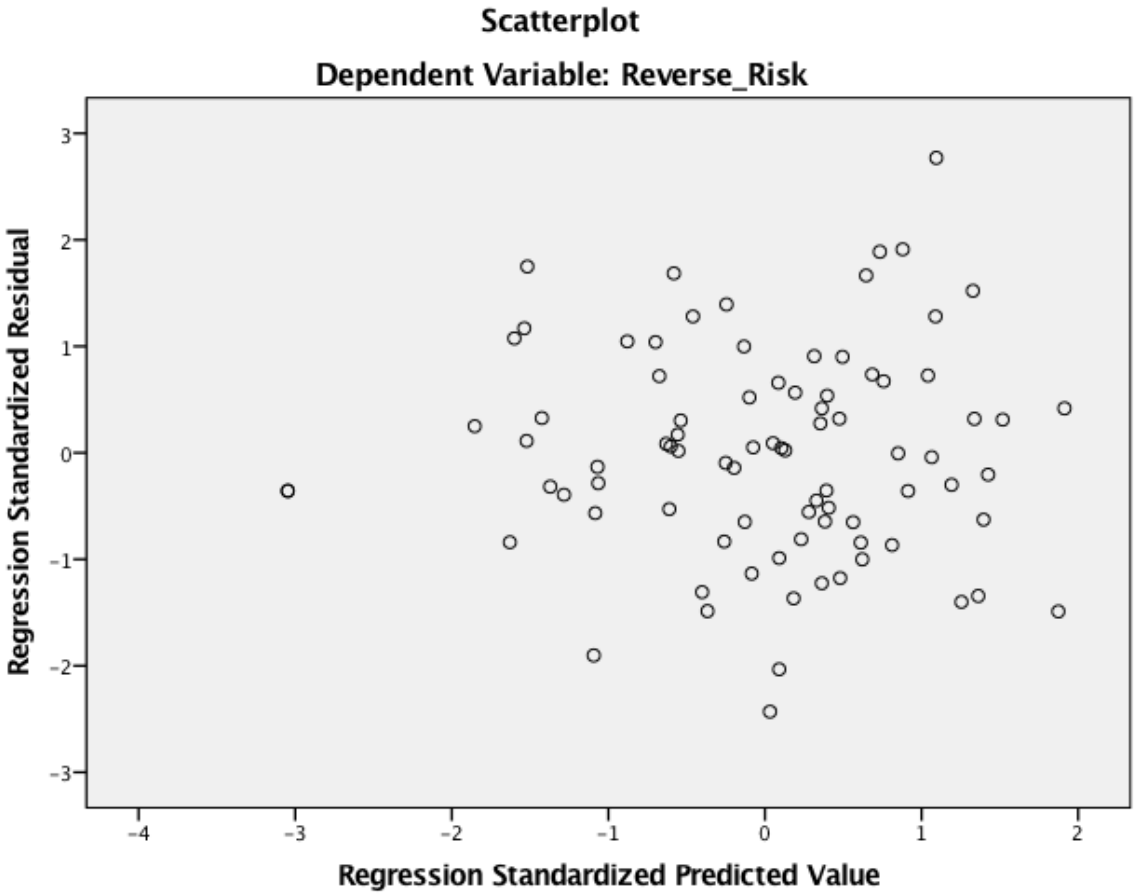
Figure 1: Bar chart of impulsivity means and gender.



Regression analysis

To ensure a multiple regression was a valid means of analysis for this data set, assumptions were tested prior to analysis. Assumptions of absence of outliers, multicollinearity, independent errors, homoscedasticity and linearity of data were all examined. Analysis of standard residuals showed that no outliers were present in the data (Std. Residual Min = -2.43, Std. Residual Max = 2.77). Collinearity tests indicated that the data met the assumption of no multicollinearity (Luck, Tolerance = .997, VIF = 1.03; Impulsivity, Tolerance = .997, VIF = 1.003). The data met the assumption of independent errors (Durbin-Watson = 1.85). The scatterplot of standardised residuals indicated that the data met the assumptions of linearity and homogeneity of variance, as seen in Figure 2.

Figure 2. Scatterplot of standardised residuals.



A multiple regression analysis was then performed on the data to test the extent to which luck and impulsivity were predictors of ERT. Through use of the 'enter' method, a significant model emerged ($F(2,82) = 31.58$, $p < .001$). The relationship between variables was strong ($R = .66$) and the model could explain approximately 43.5% (R^2_{adj} = 42.1%) of the variance in ERT scores. Out of the two variables, impulsivity was the only significant predictor of ERT, $\beta = .64$, $t(82) = 7.71$, $p < .001$. luck did not significantly predict ERT, $\beta = .12$, $t(82) = 1.48$, $p = .146$. Table 2 shows the contribution of each variable to the variance in ERT scores.

Table 2. Summary of regression analysis for predicting ERT.

Variable	*B*	*SE B* (std. Error)	*β* (beta score)
Constant	.33	.40	
Impulsivity	.58	.08	.64**
Luck	.14	.10	.12

Note: $R^2 = .44$

Note. *indicates $p < .05$, ** indicates $p < .001$

Discussion

Summary of Findings

The aim of the present study was to ascertain whether impulsivity and luck were significant predictors of ERT, while examining the relationships between ERT and both gender and age. Only hypothesis 1 was supported, as impulsivity and luck were found to significantly predict ERT when in a regression model together. Neither hypotheses 2 or 3 were supported, as significant relationships between ERT and gender or age were not found through analysis. These findings will now be discussed.

Hypothesis 1: Impulsivity and luck will be significant predictors of 'every-day' risk-taking (ERT).

Consistent with past literature (Dawe & Loxton, 2004), impulsivity was found to have a predictive effect on ERT. However, luck was found to have no such relationship, suggesting that the relationship between luck and risk-taking is diminished when such risks are in the context of every-day life. It is possible that the continued relationship between impulsivity and ERT, and the lack of relationship with luck and ERT, can be explained in terms of the driving factors behind impulsivity and luck. The association between luck and risk-taking is driven by the possible rewards that may come through the utilisation of good fortune when undertaking risky behaviours (Darke & Freedman, 1997b; Kolemba & Maciuszek, 2013), whereas impulsivity has been hypothesised as being driven by the disregard of consequences (Felton et al., 2014). Although sensation and reward seeking have been noted as key constructs within impulsivity (Lynam & Whiteside, 2001), it is possible that reward seeking is a lesser order construct than the disregard of consequence when considering impulsivity. Therefore, when posed with a risky scenario, an impulsive individual may be more inclined to act in the face of consequence, even when there is little to no reward to be gained.

Hypothesis 2: Men will have significantly higher levels of ERT than women.

As shown in the results section, this hypothesis was disproved, as no significant differences were found between males and females in ERT scores. Despite this, significant differences were found in impulsivity, with females having significantly higher scores than males. Due to the strong correlation that was found between impulsivity and ERT, it may therefore be expected that significant differences were found between the genders for ERT, however this was not the case. This result contests previous literature that states males are more prone to risk-taking than women (Crone et al., 2008; Charness & Gneezy, 2012). In a similar manner to the non-relationship between luck and ERT, the lack of reward can possibly be cited as a reason for this lack of difference. As previously mentioned, males have been found to have significantly higher levels of sensation seeking than females (Brown et al., 2013; Khodarahimi, 2015), with sensation seeking being a key predictor of risk-taking (Castellanos-Ryan et al., 2011). While the foci of previous studies on drug use, dangerous driving and others have clear rewarding sensations associated with them, be it feelings of euphoria or a thrill that arguably justify

the risk, the ‘low stakes’ risk-taking that is the focus of this study may not have such clear benefits. Although it could be argued that not leaving enough time to arrive somewhere, crossing a road when it isn’t necessarily safe or not wearing a seatbelt in a car (questions 5, 8 and 10 on the ERTQ) have a very small amount of reward in terms of time saved or a very minor thrill, the tangible benefit to undertaking these risky behaviours in terms of sensation is fairly low, therefore gender differences may be minimised.

Hypothesis 3: There will be a significant negative correlation between age and ERT.

No significant correlation was found between age and ERT, suggesting that the decline in risk-taking post adolescence and young-adulthood is only observable in the types of risk-taking behaviours predominantly discussed in literature around risk (dangerous driving, drug use etc.). However, one limitation of this study is that participants’ ages were recorded categorically, with the youngest category being 18-27 years of age. While research varies on the age at which risk-taking declines, the vast majority agrees that adolescence and young adulthood are the periods during which the majority of risks are taken (Arnett, 1992; Gardner & Steinberg, 2005). However, the guidelines of what constitutes ‘adolescence’ are not clear cut, and studies vary in what they deem to be an adolescent, a young adult and an adult. Some studies deem ages of 18-19 to be the cut off points for adolescent participant groups, including Figner et al. (2009) who found that their participant group of 17-19 year olds (deemed adolescents in this particular study) took significantly more risks than a group of adults aged 20+. If a normal distribution of ages is assumed within the 18-27 age group, it is possible that participants on the younger side of the group took more risks but were counter-balanced by participants on the older side, therefore leading to non-significant differences between this age group and older ones. A study where ages are recorded in years would be an interesting avenue for a follow up study, where ERT differences by age could be examined with more detail. As well as this, opening up future studies to participants under the age of 18 could allow for investigation of whether heightened levels of ERT are observable in participants that have traditionally been placed in the ‘adolescent’ group in previous pieces of literature.

Further Methodological Considerations/Future Research

While it was shown to have good internal reliability, some issues with the ERTQ have also been identified. It could be argued that some of the questions may be biased, depending on each participants’ personal interests. Question 6 for example “I have an interest in extreme sports”, it is entirely possible that one could define themselves as a risk-taking individual and yet still not have an inclination to take part in such activities, with the same applying to question 2 “I enjoy gambling as a recreational activity”. Despite these entries being ‘lower stakes’ than a lot of the subjects of previous literature, they still rely on participants having an interest in them. For further research, the expansion of this questionnaire into different categories, academic risk-taking or risky pastimes, for example, with similar methods of analysis could yield interesting

insight into whether relationships between risk-taking and impulsivity, luck, age and gender differ between different sub-categories of ERT.

Another issue that could be raised with this study concerns the Good Luck/Bad Luck inventory (Kolemba & Maciuszek, 2013), which measures whether an individual believes that they are lucky or unlucky. However, no consideration is given to whether or not participants believe in luck as a construct. Participants who do not believe in luck may have been inclined to choose the 'neither agree nor disagree' for many of the questions, which would give them a score of someone who believes they are neither unlucky nor lucky, rather than someone who does not believe in luck. For future pieces of research in this area, the use of a screening questionnaire, the Belief in Good Luck Scale (Darke & Freedman, 1997b), for example, may be a useful tool to employ. This would ensure that participants who do not believe in luck can be removed from the sample prior to analysis, adding validity to the study.

Furthermore, it could be argued that luck is a state, rather than a trait. The prevalence of 'lucky streaks' in discourse around luck (Darke & Freedman, 1997b) suggests that luck is not a consistent trait, and that one's luck can change, be it day to day, week to week etc. Therefore, it would be expected that one's behaviour would be different depending on whether they are in a high or low state of luck. This variance in behaviour makes the measurement of risky behaviour as a product of luck difficult, as an individual's behaviour may vary based on context. This raises further issues with the design of the study itself. While using questionnaires allows widespread distribution of the study and therefore a more representative sample, they remove the real-life context that exists when actually undertaking a risky behaviour, including emotional and social factors, which are key in decision making (Steinberg, 2004). Gardner and Steinberg (2005) argues that when placed in a controlled setting, the consequences of risk-taking are far easier to conceptualise than any associated rewards, therefore participants may be inclined to, consciously or not, act in a way that is not representative of the actions that they would take in real life. A longitudinal, observational study of how participants act in their day to day lives, and their responses when posed with risky situations would be an ideal way to obtain valid material for analysis.

Risk-taking is widely regarded as a maladaptive form of behaviour (Anderson et al., 2009), therefore further research into what drives an individual to commit risks can be beneficial. While some of the behaviours on the ERTQ may seem somewhat mundane to those who have experienced them countless times, as you would expect most adults to have, it could be worthwhile to apply this research to younger populations. If the motivating factors behind ERT can be explored further, this knowledge can be applied to pre-adolescents through education or interventions. For example, those who show signs of developing risk-taking tendencies later in life through high levels of impulsivity can be educated further on recognising and/or avoiding risk in an attempt to lessen the probability of high levels of ERT in the future.

Conclusion

This study sought to establish whether the relationships between ‘severe’ risk-taking and impulsivity, luck, gender and age that have been observed at length in past pieces of research, are also observable when the risks that are being measured are those that may be encountered on a day to day basis. Findings indicated that only impulsivity carried the same type of relationship between severe and every-day risk-taking. While this gives further credence to the link between impulsivity and risk-taking that has been the focus of many studies in the past, it raises questions as to why the relationships between risk-taking and luck, gender and age only exist in ‘high-stakes’ risk-taking. Given the results of this study, it could be argued that ERT is a fairly stable trait across all genders, ages and perceived luck levels, however methodological issues that have been raised, along with a sample that excludes an age group that has been shown to be particularly risk prone, make this assumption highly contentious. Further research into this area could be highly beneficial, with an adjusted study for younger populations in particular being an avenue for potential interest.

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