

Developmental Changes in the Use of Supernatural Explanations for Unusual Events among Children and Adolescents

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Abstract

The focus of this research is to explore the development of supernatural explanations for unusual events in children and adolescents aged (7, 9, 11, 13, 15, 17, 19) years. And if there are differences between males and females in the use of supernatural explanations for unusual events. To achieve the objectives of the current research, and after reviewing the literature and previous studies, the researchers adopted a tool (Pipton and Saffioti, 1997), Ninety children aged 7,9 and 11 a long with 120 adolescents, were presented with scenarios describing unusual or unexpected events. They were first asked to provide explanations for why they believed the events occurred, and then they were asked to rate different supernatural explanations (moral justice, God, and luck). Regarding each scenario. The results indicated that paranormal explanations begin at the age of 11 years, and there is an effect of age on the development of the use of paranormal explanations for unusual events, meaning that the use of paranormal explanations takes a developmental path and increases with age. The results also indicated that there were no statistically significant differences in the use of paranormal explanations for unusual events according to the gender variable. The findings are discussed in terms of how children and adults acquire the interpretive systems of their culture.

Keywords: *supernatural explanations, unusual events, explanatory systems, children, adolescents.*

Introduction

Superstitions have existed for thousands of years across various cultures, with qualitative differences in their manifestations. Studies have revealed that these superstitions continue to thrive even in modern times (Wiseman & Watt, 2004). Attempting to understand how the mind works will not be meaningful unless the psychological processes that lead even intelligent individuals to embrace supernatural beliefs, despite knowing their implausibility, are identified (Risen, 2016). Some believe that supernatural thinking is limited to specific individuals suffering from certain mental disorders. However, this type of thinking appears not confined to individuals with mental disorders alone. More than half of Americans believe in superstitions, such as knocking on wood to ward off bad luck (CBS News, 2012), and approximately one-third of university students hold superstitious beliefs related to exams and practice them to pass their tests (Albas & Albas, 1989). Supernatural thinking is not abnormal or magical. It is a common occurrence that

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happens continuously and is not limited to extraordinary individuals, specific communities, or groups. These supernatural explanations are prevalent among children and adults, intelligent and less intelligent individuals, psychologically stable and those with psychological disorders (Risen, 2016). Supernatural explanations explain the abstract and causal structure of complex, unobservable, and uncertain phenomena that significantly impact humans. Both children and adults believe in various entities that challenge their intuitive concepts and direct perceptions of the world. These include scientific concepts like invisible germs, oxygen, the centrality of the sun, and the spherical earth, as well as religious concepts like gods who know everything and possess great power and spirits that persist even after the body's death (Spilka, et. al, 1964).

For over a century, research has focused on supernatural thinking and its cognitive limitations among people due to factors such as culture, age, desire, anxiety, and more. Piaget attributed supernatural thinking in children to a lack of scientific knowledge and undeveloped thinking skills. Freud believed that concepts like genies, spirits, and luck did not exist and that the paranormal was a product of the unconscious mind's effectiveness (Al Osta, 1990). The problem with these studies stems from variations in research, as Piaget in 1929 believed that children in the sensory-motor stage, spanning from ages 7 to 11, developed concrete operational thinking. However, their reasoning in this stage was limited to what they observed (Mansour& Al-Hamdani, 2021).

During this stage, egocentrism and magical thinking prevalent in young children are replaced in the concrete operational stage with logical and rational thinking characterised by abstract thinking. According to Piaget's study, children gradually abandon belief in supernatural causality and instead gain objectivity and scientific appreciation of cause and effect. With further education and technological advancement, natural explanations increasingly compete with supernatural ones. (Inglehart & Norris, 2004).

Contrary to Piaget, modern studies of cognitive development in young children suggest that they construct systematic and coherent theories about the world. When asked to think about various cause-and-effect relationships, children display advanced levels of thinking that can often be compared to adult thinking (Hickling & Wellman, 2001). There is a debate about whether children are more or less inclined than adults to endorse supernatural explanations. Teenagers primarily use natural explanations to understand common events in their daily lives, so the question arises as to whether they would also do so in unexpected or unusual events, as recent studies have found that teenagers are fascinated by paranormal phenomena and hold supernatural beliefs, as evidenced by their prevalence in popular culture (Williams & et al., 2007).

Studying this topic holds special importance because how people explain events can provide clear insights into their understanding of how the world works (Hickling & Wellman, 2001). Our knowledge of the world depends on understanding the causal relationships between events, allowing us to predict future events and explain past events (Sobbel, 2004).

The question of how children and adults interpret unusual events is a broad one. Recently, interest in paranormal phenomena has increased. This interest in paranormal phenomena is evident from the many newspaper articles, books, television programs, films, and organised group activities that focus on this topic (Scheidt, 1973). No society is completely devoid of supernatural beliefs, and even in modern, highly educated, industrialised societies, at least some individuals subscribe to supernatural beliefs ranging from God to ghosts to astrology (Evans, 2000). However, not much is known about how the use of supernatural explanations develops or the extent to which children and adults enlist the paranormal to explain events. Understanding supernatural explanations is fundamentally a cognitive evolutionary endeavour and speaks to the general questions of knowledge acquisition, socialisation, and the interaction between cognition and culture. Paranormal explanations are not a transitional phenomenon in a short-term developmental

path. Instead, studies have found that paranormal thinking is also evident and widespread among adults (Raman & Weiner, 2004).

There is great interest by psychologists in the nature of children's beliefs and how they are formed all over the world. Ultimately, children need to learn to form beliefs consistent with reality. They should integrate several information sources to form and maintain these beliefs. Children should also learn to evaluate the arguments of people around them in order to make judgments about a fact (Wooley et al., 2004).

The study of children's understanding and perceptions that they form about the world, which develops naturally through the various stages of their development, is one of the important topics in the study of children. A child's learning depends on his understanding of the world, his knowledge of things, and discovering what lies behind the apparent behaviour of others (Saleh, 2020). The concept of "childhood" was and still is a fertile field in various scientific research. Many educational scholars, parents, and teachers have paid great attention to childhood. They took the child as an important focus of their study (Awad, 1999). Childhood is one of the most important stages that a person goes through, and it is the fulcrum for subsequent stages. The importance of this particular stage becomes clear because the characteristics children acquire are difficult to change in the following stages (Samoui, 2018). The psychological theories presented by psychologists such as Piaget, Huffgehurst, and Kohlberg, as well as scholars of the psychoanalytic school, have confirmed that childhood is a life stage distinguished by its important events. The child faces challenges due to the changes he experiences on the organic, psychological and social levels. Therefore, the child needs education, care, and attention (Jaafar, 2022).

The importance of studying the adolescence stage comes from the fact that adolescents are an important segment in building the country and its progress, understanding the wealth of society and its creative energies towards a better future. Therefore, we had to focus on positively developing their personalities in all mental, social, psychological and emotional aspects (Fadel & Mahmoud, 2016). This group has a high proportion of the total world population. This percentage increases in developing countries by up to half the number. In industrialised countries, adolescents constitute approximately one-third of the total population. Adolescence is a stage of great importance because, in the words of Montessori and Stanley Hall, it is a second birth, and Dolto believes that adolescence is a major transitional stage for the adolescent, just as birth is for a young child (Al-Tufaili, 2004).

Method

Participants

The size of the total research sample was (210) male and female Students in elementary, middle and middle schools in Baghdad Governorate of both sexes, with a ratio of (105) for females and (115) for males. The representation percentage for males was 50%, while the representation percentage for girls was 50%. The ages of the participants were between (7-19) year's old.

Materials

The current study focuses on determining the extent to which children and adolescents use supernatural explanations for unusual events. Six scenarios were developed that included significant "difficult-to-explain" events (Pipitone & Saffioti, 1997). We operationalized "difficult to explain" scenarios as significant events that either violated standard expectations, were of low probability, or both. As in Pipitone and Saffioti (1997), each scenario was designed to offer a different supernatural explanation (moral justice, God, or luck). This allowed us to assess developmental changes in the specificity

of supernatural interpretations. There are two scenarios representing each of the three supernatural categories, and one of them results in a one positive result and one negative result. Three explanation models were also created for each scenario, with each explanation representing one of the three supernatural categories.

To provide a sense of the types of stories and explanations we included, the positive moral justice story involved a man, Robert, who did not make much money at his job but spent most of his free time helping sick animals at an animal hospital. Robert unexpectedly received a phone call informing him that he had won a large sum of money in a contest. The three explanations we offered for why Robert won the money were: (1) Because Robert was a nice guy (Moral justice), (2) God must have wanted him to have the money (God) and (3) Robert must have been a lucky person (Luck).

Procedure

children. The researcher read the scenarios to each child. The child sat on a chair to tell him that he would hear some stories about some people. Then he read aloud one of the scenarios. After reading each scenario, children were asked to provide a verbal explanation for why they thought the event occurred. This process was repeated for each of the six scenarios.

Children. then rated three explanations for each scenario. The three explanations were presented in a different random order for each scenario. The researcher told children that they would hear some explanations that some other children had given for the stories. Children were asked to rate the plausibility of each explanation using a “thumb pictures”. Pointing their thumb straight up indicated that they “strongly agreed” with the explanation (coded as 4), pointing it up at a 45° angle indicated that they “agreed a little” (coded as 3), pointing it down at a 45° angle indicated that they “disagreed a little”(coded as 2), and their thumb pointed straight down indicated that they “strongly disagreed” (coded as 1). This process was repeated for all six scenarios. After children had completed the task, they were debriefed and given a reward for participating.

Adults. Undergraduate student participants were . They were asked if they would like to Participate in a brief psychology-related study. If they agreed, they were taken to a quiet place where they provided informed consent and were then given a written copy of the six scenarios. They were asked to read the scenarios and Write their best explanation for each event in the space provided. Share Shares were then asked to rate the three supernatural explanations as they pertained to each scenario on a scale from 1 (strongly disagree) to 4 (strongly agree). After they had rated the explanations, they completed .Upon completion of the questionnaire, they were debriefed and thanked for their time.

Measurement

Then they were asked to evaluate the explanations of the three paranormal phenomena, and the scale consists of (18) questions (quantitative questions in which children and adolescents receive a score, and the correction score is (4, 3, 2, 1). And (6) open-ended questions (from which researchers obtain qualitative answers) in which children and adolescents provide a justification for the occurrence of the event. These answers do not give children and adolescents a score, but rather give an idea of the development of the use of paranormal explanations for unusual events among the sample members. And (6) open-ended questions (from which researchers obtain qualitative answers) in which children and adolescents provide a justification for the occurrence of the event. These answers do not give children and adolescents a score, but rather give an idea of the development of the use of paranormal explanations for unusual events among the sample members. The highest score that could be obtained was (72) degrees, the lowest score that could be obtained was (18) degrees, and the default average was (45) degrees (Athir,&Jassim,2022:1)

The scale obtained apparent validity after presenting it in its initial form to a number of arbitrators in order to evaluate it, judge the validity of its items, and verify that the items conform to the characteristic it was prepared to measure and its suitability to the Iraqi environment. The researchers presented the scale of using paranormal explanations for unusual events to (10) arbitrators specialized in science. Educational and psychological studies, and based on their opinions, the scale was adopted with some linguistic modifications to some items. It subsequently obtained 100% unanimous approval, while maintaining all its provisions (Eyal& Jassim, 2019: 293). The stability of the scale of using paranormal explanations for unusual events was extracted using a retest method. The application was repeated on (60) male and female students, with an interval of (14) days from the date of the first application. The Pearson test was tested and the correlation coefficient reached (0.72) for the scale. Using the Cronbach equation, the alpha coefficient reached (0.77), which is a good reliability coefficient. This value is considered a good indicator of the stability of individuals' answers to the scale over time, so this scale is characterized by internal consistency (Arnot, Jassim, and Mahmoud, 2019).

Results

Using Supernatural explanations for unusual events depending on the age variable (7, 9, 11, 13, 15, 17, 19) years, To achieve this goal, the two researchers applied the measure of using paranormal explanations for unusual events to the research sample of (210) respondents, The results of the research showed that the arithmetic averages for individuals at the ages of (7, 9, 11, 13, 15, 17, 19) years reached (25,900, 28,700, 52,800, 55,400, 55,633, 58,800, 60,433), respectively. With standard deviations (5,057, 9,322, 10,822, 11,171, 12,700, 9,115, 12,631). To determine the significance of the difference between the arithmetic averages for ages and the assumed average of 45 degrees, the researchers used a one-sample t-test. The results showed that there were statistically significant differences between the arithmetic means of individuals aged (7, 9) years and the hypothesized mean, and in favor of the hypothesized mean. The calculated T values (12,944, 9,577) were greater than the tabulated T values (2.042) at the significance level (0.05). This indicates that individuals at these two ages do not have the ability to use paranormal explanations for unusual events. As for individuals between the ages of (11, 13, 15, 17, 19) years. The calculated T-values (3,974, 5,099, 4,851, 8,112, 6,692) were greater than the tabulated T-value (2,045) at a significance level (0.05), which indicates the presence of statistically significant differences between the averages calculated for these ages and between Hypothetical and in favor of averages Calculated, and This suggests that individuals at these ages have a use for supernatural explanations for unusual events. Figure (1) and Table (1) shows this.

Table (1) arithmetic mean and Standard deviation and Hypothetical mean and t-value calculated and tabulation To use Supernatural explanations for unusual events depending on age

Age	number	mean	Standard deviation	mean with a hypothetical value	t-value		significance level (0,05)
					Calculated	Tabulation	
7	30	25,900	5,057		12,984	2,045	Not significant
9	30	28,700	9,322		9,577	2,045	Not significant
11	30	52,800	10,822		3,947	2,045	Significant
13	30	55,400	11,171		5,099	2,045	Significant

15	30	55,633	12,007	45	4,851	2,045	Significant
17	30	58,800	9,115		8,112	2,045	Significant
19	30	60,433	12,631		6,692	2,045	Significant

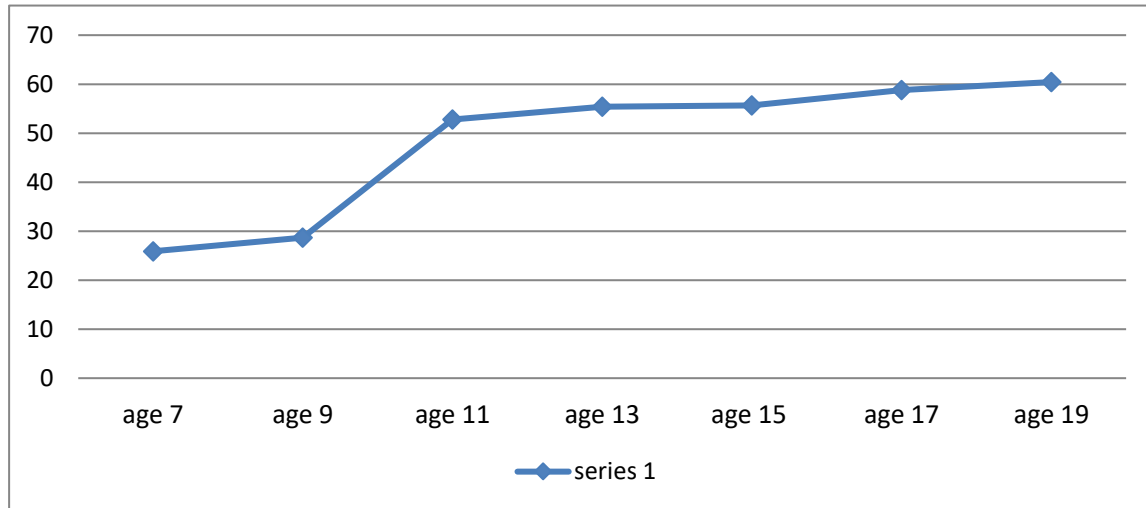


Figure (1) use Supernatural explanations for unusual events depending on age

Statistically significant differences in the use of Supernatural explanations for unusual events according to the gender variable (males – females)

The arithmetic averages for males at ages (7, 9, 11, 13, 15, 17, 19) years were (24,466, 29,800, 52,000, 54,800, 54,933, 57,066, 61,000) respectively. Sequence with standard deviations (8,692, 10,386, 11,275, 12,785, 12,452, 10,735, 11,976). To determine the significance of the difference between these averages and the hypothesized average of (45) degrees, the researcher used the t-test for one sample. The results showed that there were statistically significant differences between the arithmetic means for males at ages (7 and 9) years and the hypothesized mean and in favor of the hypothesized mean, as the calculated T-values (9,149, 5,668) were greater than the tabulated T-value (2,145) at the significance level (0, 05), This indicates a lack of male age models using simple explanations for unusual events. For males in games (11, 13, 15, 17, 19) years old, the calculated T-values (2,404, 2,969, 3,089, 4,346, 5,157) are greater than the tabulated T-values (2,145), This indicates that there are statistically significant differences between the calculated averages and the hypothesized average and in favor of the calculated averages, meaning that males at these ages possess the ability to use paranormal explanations for unusual life events The arithmetic means for females at ages (7, 9, 11, 13, 15, 17, 19) years were (27,333, 27,600, 53,600, 56,333, 56,000, 59,866, 59,933), respectively, with standard deviations of (7,384, 8,339, 10,682). , 9,710 , 11,938, 7,215, 13,653), To determine the significance of the difference between these averages and the hypothesized average of (45) degrees, the researcher used the t-test for one sample. The results showed that there are statistically significant differences between the two arithmetic means for females at the ages of (7 and 9) years, The hypothesized mean is in favor of the hypothesized mean, as the calculated T-values (9,266, 8,081) were greater than the tabulated T-values (2,131). This indicates that females at these two ages do not have the ability to use paranormal explanations for unusual events. With regard to females at ages (11, 13, 15, 17, 19) years, the calculated T-values (3.118, 4.387, 3.677, 8.015, 4.217) were greater than the tabulated T-value (2.145) at the significance level (0.05). This indicates that there are statistically significant differences between the calculated averages and the hypothesized average and in favor of the calculated averages.

Which means that females at these ages have a use for supernatural explanations for unusual events. Figure (2) and Table (2) shows this.

Table (2) arithmetic mean and Standard deviation and Hypothetical mean and t-value calculated and tabulation To use Supernatural explanations for unusual events depending the gender

Age	gender	number	mean	Standard deviation	mean with a hypothetical value	t-value		significance level (0,05)
						Calculated	Tabulation	
7	male	15	24,466	8,692	45	9,141	2,145	Not significant
	female	15	27,333	7,384		9,266	2,145	Not significant
9	male	15	29,800	10,386		5,668	2,145	Not significant
	female	15	27,600	8,339		8,081	2,145	Not significant
11	male	15	52,000	11,275		2,404	2,145	significant
	female	15	53,600	10,682		3,118	2,145	significant
13	male	15	54,800	12,785		2,969	2,145	significant
	female	15	56,000	9,710		4,387	2,145	significant
15	male	15	54,933 3	12,452		3,089	2,145	significant
	Female	15	56,333	11,938		3,677	2,145	significant
17	male	15	57,066	10,753		4,346	2,145	significant
	female	15	59,933	7,215		8,015	2,145	significant
19	male	15	61,000	11,976		5,175	2,145	significant
	female	15	59,866	13,653		4,217	2,145	significant

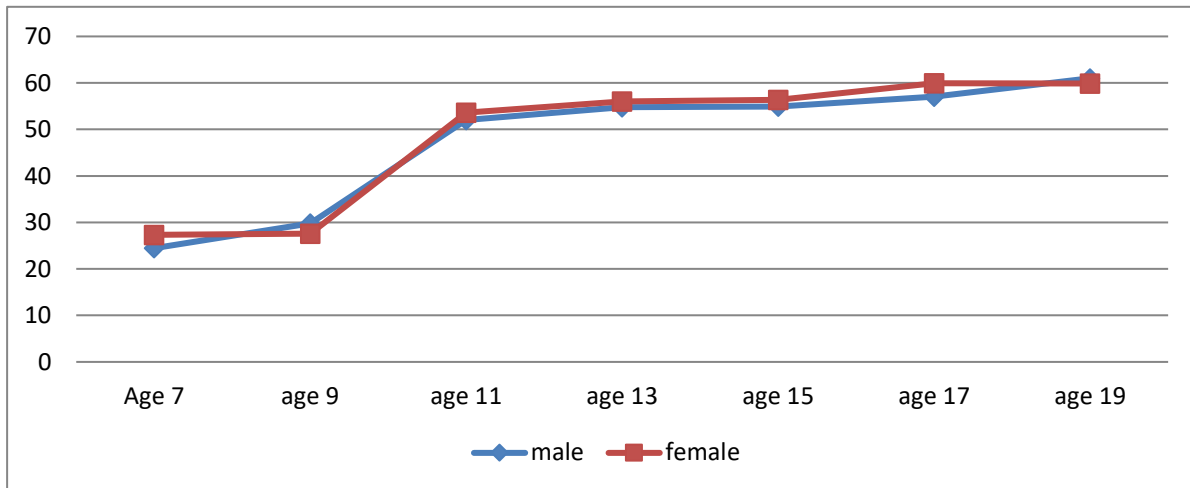


Figure (2) use Supernatural explanations for unusual events depending the gender

Discuss the results

Participants in this study were presented with stories to represent events that may be difficult (but not impossible to explain in naturalistic terms) because they represent events that are unexpected or have a low probability of occurring. Although events are difficult to explain in natural terms, the results showed that children aged 7-9 years have a low use of Supernatural explanations for unusual events. The younger children's answers to the question: Why did Robert win the prize? Because he participated in the competition but forgot that he was participating. Their answers to the question of how Veronica recovered from the disease were because she slept a lot, and this helped her recover. They answered the question: How did Carol fall on her wedding day because she tripped on a stone on the ground, or she might have been walking fast. As for 11-year-old children, they use Supernatural explanations for unusual events. Paranormal explanations for unusual events continue to be used at ages 13, 15, 17, and 19 years. Thus, the current research results differed from the opinion of Piaget, who believed that supernatural thinking and the prevailing methods of thinking in children gradually decrease with age and end at the age of (11-12) years, which is the stage of abstract operations. This stage is characterised by the gradual disappearance of the types of thinking characteristic of the previous stage (the third stage), to be replaced by logical thinking, and thinking becomes more objective and rational (Carey, 1989). The researcher believes that this decline in providing logical and supernatural justifications results from environmental influence. After leaving childhood, individuals become more influenced by the prevailing culture in society. Teenagers acquire supernatural beliefs from a social environment in which high religious values and beliefs prevail, as well as belief in magic, ghosts, luck, and other supernatural beliefs. Also, concepts such as moral justice, God Almighty, and luck are abstract concepts. It is difficult for young children to understand and to achieve a sufficient understanding of these concepts. Children should be able to recognise the possibility of abnormal and striking events. This requires more life experience than that available to young children. The current research results also showed that the development of paranormal explanations for unusual events takes a gradual developmental path. The current study found two developmental stages using paranormal explanations for unusual events among children and adolescents. The first stage (7, 9 years) is the least developed. The researchers identified a weakness in using paranormal explanations for unusual events. The second stage is (11, 13, 15, 17, 19) years. From the beginning of this stage, that is, at the age of (11) years, the use of supernatural explanations for unusual events appeared, with an increase in appeals to God and an increase in luck and other supernatural powers. The

current research results also found no significant differences between the sexes (males and females) in developing the use of paranormal explanations for unusual events. These results are consistent with recent studies on using natural versus supernatural explanations (Woolley, 2011), which found that children are motivated to provide natural explanations compared to adults.

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