

# Para psychic Beliefs in Iran and Germany – Gender and age differences in two countries

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# **Parapsychic Beliefs in Iran and Germany**

## **Gender and age differences in two countries**

### **Abstract :**

Gender and age differences in parapsychic beliefs were examined in the context of social and cultural differences. In this study, I conducted a pilot study to gain validation evidence for the questionnaire in both countries ( Iran and Germany ). Based on significant results of the pilot study, the principal study was conducted. Participants in the pilot sample were 461 males and females in two subgroups young and old in both countries. The individuals in the principal study consisted of 1126 males and females from both countries and also were sub – divided into two age groups ( young and old ). Furthermore, component analysis identified three independent dimensions: The first component, can be explained as a sense of control. The second component, in contrast to the first component, can be explained as a sense of being out of control . The third component come to us as part of our religious beliefs.

The first hypothesis, was to examine the extent to which paranormal beliefs found in any gender depend on a different cerebral dominant. I had two goals in this hypothesis : First, to know whether the left-handed have a tendency to more paranormal beliefs than right-handed. The results indicated that significant interactions from all 3 components. Second, to explore gender role, in the male group, it was revealed that male left handedness had significantly more tendency than a right handed male at first component. But in the female groups I found no significant interaction.

The second hypothesis of this study was to determine whether Iranian females are more superstitious than German females. Iranian groups, did have a higher score of believers in parapsychic phenomena. And all of the multiple regression results about parapsychic phenomena were significant. The third hypothesis: Men's beliefs remain relatively constant until the old age phase, then their tendency changes towards parapsychic beliefs, but women's parapsychic beliefs remain relatively constant throughout different ages. First, to explore age differences in both genders, I performed a multiple regression for each component, to examine whether there was a significant difference between younger individual's beliefs and older individuals beliefs. The results indicated that only the younger groups had significant interaction from at first component.

Second, to compare the two age groups, I had two goals in this comparability: First, to examine whether there was a significant difference between the younger females' beliefs and the older females' beliefs in parapsychic phenom in both countries. The results showed that the younger females had significant interactions from first and third components. I also examined whether there was a significant difference between the younger men's beliefs and the older men's beliefs in parapsychic phenom in both countries. The results indicated no significant interaction. Finally, I turned to the differences between old men and old women and to the question of whether there is an age – related continuity in the differences between parapsychic beliefs and gender in old age. The results indicated a higher level of parapsychic beliefs by the group of older men in Germany in contrast to the older Iranian women.

## **Parapsychischer Glaube in Iran und Deutschland - geschlechts- und altersspezifische Unterschiede**

### **Zusammenfassung :**

Geschlechts- und altersspezifische Unterschiede im Bezug auf den parapsychischen Glauben wurden im Kontext gesellschaftlicher und kultureller Unterschiede untersucht. Innerhalb dieser Studie führte ich zunächst eine Pilotstudie durch, um einen Gültigkeitsnachweis für den Fragebogen in beiden Ländern (Iran und Deutschland) zu gewinnen. Die Hauptstudie wurde dann aufgrund der signifikanten Ergebnisse der Pilotstudie durchgeführt. Teilnehmende an der Pilotstudie waren 461 Männer und Frauen, die in beiden Ländern in junge und alte Untergruppen unterteilt wurden. Der Personenkreis der Hauptgruppe bestand aus 1126 Männern und Frauen aus beiden Ländern, die auch hier wieder in zwei Altersgruppen (jung und alt) unterteilt wurden. Des Weiteren wurden in einer Faktorenanalyse drei voneinander unabhängige Dimensionen benannt: Die erste kann beschrieben werden als das Gefühl, alles unter Kontrolle zu haben. Die zweite kann im Gegensatz zur ersten beschrieben werden als das Gefühl, die Kontrolle verloren zu haben. Die dritte lässt die Situation als ein Teil der religiösen Vorstellungen erscheinen.

Die erste Hypothese bestand darin zu untersuchen, in welchem Maße der parapsychische Glaube geschlechtstunabhängig mit der Dominanz einer anderen Gehirnhälfte in Zusammenhang zu bringen ist. Mit dieser Hypothese verfolgte ich zwei Ziele: Erstens, herauszufinden, ob Linkshänder einen stärkeren parapsychischen Glauben aufweisen als Rechtshänder. Die Ergebnisse zeigten 5 signifikante Interaktionen von 15 Phänomenen. Zweitens sollte die Rolle der unterschiedlichen Geschlechter untersucht werden, was ergab, dass in der männlichen Gruppe die Linkshänder bei drei Phänomenen eine signifikant stärkere Tendenz aufwiesen als die Rechtshänder. In der weiblichen Gruppe hingegen fand ich nur eine signifikante Interaktion von 15 Phänomenen.

Die zweite Hypothese dieser Studie bestand darin, festzustellen, ob iranische Frauen eine stärkere Neigung zum Aberglauben haben als deutsche. Und tatsächlich glaubten in der iranischen Gruppe mehr Personen an übernatürliche Phänomene. Den Einfluss der Mondphasen ausgenommen waren die Multiregressionsergebnisse bezüglich übernatürlicher Erscheinungen auf allen Gebieten signifikant ( $p < .001$ ). Die dritte Hypothese: Männer bleiben in ihren Glaubensvorstellungen relativ konstant bis ins höhere Alter; dann tendieren sie eher zum parapsychischen Glauben. Frauen hingegen bleiben in ihrem Glauben relativ konstant durch alle Altersphasen hindurch. Um zunächst Altersunterschiede bei beiden Geschlechtern zu untersuchen, führte ich für jedes Phänomen eine Multiregressionsuntersuchung durch um festzustellen, ob ein signifikanter Unterschied zwischen dem Glauben einer jungen Person und denen einer älteren besteht. Die Resultate zeigten, dass nur die jüngeren Gruppen 9 signifikante Interaktionen von 15 Phänomenen hatten.

In einem zweiten Schritt verglich ich die beiden Altersgruppen, wobei ich zwei Ziele verfolgte: Erstens, herauszufinden, ob ein signifikanter Unterschied zwischen dem Glauben der jüngeren und der älteren Frauengruppe in beiden Ländern besteht. Die Resultate zeigten, dass die jüngeren Frauen 14 signifikante Interaktionen von 15 Phänomenen hatten. Ich untersuchte auch, ob ein signifikanter Unterschied zwischen der jüngeren und der älteren Männergruppe in beiden Ländern besteht. Es ergab sich, dass die ältere Gruppe 8 signifikante Interaktionen von 15 Phänomene aufwies. Schließlich wandte ich mich den Unterschieden zwischen alten Männern und alten Frauen zu und der Frage, ob hinsichtlich des unterschiedlichen Glaubens der Geschlechter eine altersbezogene Kontinuität besteht. Das Ergebnis zeigte ein höheres Maß an Glauben bei der älteren deutschen Männergruppe als bei der iranischen älteren Frauengruppe.



Schlagworte:

1. Phänomen; das sich Zeigende im Sinne der wahrnehmbaren Erscheinung . Zunächst vom sinnlich wahrnehmbaren gebraucht, dann, übertragen auf alles in äußerer oder innerer Erfahrung in das Bewusstsein.
2. Parapsychischer, Wahrnehmung außerhalb der bekannten Sinnesorgane.
3. Kognition; Sammelbegriff für alle Prozesse und Strukturen, die mit dem wahrnehmen und Erkennen zusammenhängen zum Beispiel ( Denken, Erinnerung, Vorstellen, Gedächtnis, Lernen, Planen. u.s.w. ).

Glossary:

1. phenomenon; known or perceived by the senses rather than the mind.
2. parapsychic; mental phenomena which are beyond the scope of normal physical explanation.
3. The mental act or process by which knowledge is acquired, including perception, intuition, and reasoning.

# **Parapsychic Beliefs in Iran and Germany**

## **Gender and age differences in two countries**

### **Introduction**

Beliefs about the nature of reality shared by members of a group. Culture gives us a sense of are living in a meaningful universe, and it provides social roles that make us feel significant members of that universe. It also allows us to defy symbolically or literally, by believing in parapsychic phenomenon. Differences and similarity between women and men, or between girls and boys, can reliably be found for some behavior, at some ages, in some situation and place. Are these differences and similarities formed by social influences? Or biological? However, men and women are sometimes influenced by different biological and social factors such small factors include the secretion of a hormone, stressful situations, or hemispheric asymmetry, different experiences and stimuli, or learning procedures in different cultures and their religions.

The main goal of our study in biological influences is to form an understanding of the role of brain lateralization on the one hand, and of the social influences and their contribution across age, on the other hand, and to confirm that women may be more parapsychic than men. There are empirical facts to believe that all over the word women tend to be more parapsychic than men (Haraldson, 1985; Messer & Griggs, 1989; Clark, 1991; Euler & Adolph, 1993; Yyse, 1997; Lillqvist & Lindeman, 1998).

From an evolutionary perspective, all living organisms have ancestors who successfully solved survival and reproductive problems. According to this view, living organisms have to find adequate solutions for the problems with which they are confronted. Some solutions are anatomical and physiological, and some are psychological mechanisms. It is assumed that in any culture, women have experienced more stressful social events than men. So parapsychic beliefs in women act as mechanisms through which stressful social events can be coped with or adapted to.

The parapsychic phenomena assessed in this study were telepathy, fortune – telling, psychokinesis, U F Os, life after death, clairvoyance, astrology, contact with the deceased, esoteric instruction, reincarnation, effects of prayer, interpretation of drawings, amulet, miracles, field lines, dowsing Rods, life on other planets and the influence of the moon phases. According to the definition of Encyclopedia (Britannica, 1993 ) any of several types of events that can not be accounted for by natural law or knowledge apparently acquired by other than usual sensory abilities. A phenomenon is said to be paranormal if, according to accepted notions of what is physically possible, it ought not to occur. And

covers instances where information of some kind is supposedly transmitted from the source (or target) to the receiver (or subject ) in a way other than through any of the known sensory channels. It is assumed that parapsychic beliefs were used to influence domains that were incalculable, unknown and uncertain. We all live in a world of uncertainty, and some of the events in our lives are completely unpredictable. But our reaction to uncertainty is determined by the content of our beliefs which come from our culture, our psychological experience of things around us, and by our biological ability and vulnerability. From these variety of stimuli, some of us will respond to uncertainty with parapsychic beliefs. In other words, with these beliefs we are trying to understand, to take control of life events, and to get alleviate of stress. Furthermore, these beliefs often do reduce the anxiety associated with unknown and uncontrollable events. However, our understanding of the natural world does not support the validity of these beliefs. Epstein, (1994) defines parapsychic beliefs as a system of beliefs to which people resort to when they feel helpless in dealing with critical life events. These beliefs afford the individual a better understanding of what is happening to him or her, in his or her environment.

## **Stress**

In human societies, stress response is continuous, sometimes with little room for relaxation. Stress becomes an abnormally dangerous physiological condition when it is maintained for long periods of time without relaxation (Dohrenwend, 1998). It may be caused by the increased electrical flow of information along neurons, as well as by the increased release of hormones from the endocrine system. The causes of stress may come from an individual's cognitive systems or from the external environment. The strong social and cultural aspects of human society make human stress adaptation varied, and the continua of adjustment strategies has also been various. These adaptations include constructive and anti-stress behaviors such as group association, athletics, and self-imposed anti-stress strategies. Nevertheless, certain adaptations may create other problems: Overeating, smoking, alcohol and drug abuse are stress adaptations that may contribute to further stress (D S M – IV, 1994).

Self-imposed anti-stress strategies include methods such as meditation and biofeedback. Meditation involves disciplining one's mind and logically dealing with stress and stressful situations (Geißler, & Rückert, 2000 ). The biofeedback technique involves the monitoring of some physiological condition such as blood pressure within one's own body with an appropriate instrument and mental concentration to control the condition. Such functions for the most part are involuntary, they are unconsciously controlled by the central nervous system of the individual. Biofeedback research has showed that many such involuntary processes can be consciously regulated to a significant extent to the benefit of the well-being of the individual (Zeier, 1997). In some ways, parapsychic beliefs meet this aspect of stress adaptation. Now we turn our attention in this study to the presence of a stressful situations as a potential moderating variable in parapsychic belief.

Keinan, (1994) clarified the impact of the presence of psychological stress on parapsychic beliefs. He hypothesized that the greater stress experienced by those living in the more dangerous areas would encourage parapsychic beliefs. He conducted a study during the Persian Gulf war on a people who lived in high and low danger areas. His hypothesis was confirmed. Those living in the more dangerous areas had higher levels of stress and showed more parapsychic beliefs than people living in safe areas. Additional results from his research showed that people who hold parapsychic beliefs are often aware that their thoughts are unreasonable and irrational. It was interesting that significant difference was not seen between the male and female groups under conditions of high stress. This meant that both genders have had parapsychic beliefs as adapting strategies in high stress conditions. Also, elderly people have shown more parapsychic beliefs than young people. In the direction of our definition, about the role of stress in parapsychic beliefs Lillqvist,& Lindeman, (1998) have designed the assumption that people in stressful situations possibly feel that believing in astrology has helped them to form an understanding of events.

## **Cognition**

Human cognitive systems responses are also adapted from environmental and social interaction. Normally, our information–processing chooses among alternatives and designs on the basis of how well they function. This system needs stimulus, and information to function. What is going to happen to this system when it suffers a lack of information? We think that the continua of processing strategies could be various. These processing strategies may include rational, irrational and pathological thinking, such as imagination, dreams, fantasy, loving, illusion, delusions, parapsychic beliefs, hypothesis, logical, mathematical, and scientific thinking. Would it be correct, then, to assert that the history of thinking is a struggle between reason and unreason, science and superstition?

Epstein, (1994) assumes that people have two systems for processing information, a rational system and experiential system. These two systems of reasoning are assumed to work simultaneously within the same person, and often influence each other. Parapsychic beliefs come from the intuitive, experiential system. In other research Epstein, Lipson, Holstein and Huh (1992) have found considerable support for the relationship between parapsychic beliefs and several personality dimensions such as higher levels of neuroticism, depression, anxiety, low self – esteem, and low ego strength which causes a negative response to a stressful or threatening situation.

A different viewpoint was presented by Howard, (1991). He has defined all human’s information-processing as story-telling. He has no belief in the two separate processing strategies, such as a rational or experiential system. He believes that, when human thought turns to such questions as “what caused something to occur?”, many people agree that scientific stories give the best analysis available. But we want to know the answers to such questions as “what is the good life? Or what is the moral?” and, under these

circumstances, it would be better to answer with other nonscientific stories like philosophy, literature, religion, and parapsychic beliefs. Taylor, (1983) has designed a theory of cognitive adaptation to stressful and threatening situations. She argued that the adaptation occurred via three processes : 1- Search for meaning in the experience, which involves the need to understand how and why this conflict happened. 2 – To find a sense of control. 3 – And to restore self-esteem. People try to successfully resolve these three processes with the ability to form and maintain a set of parapsychic beliefs.

## **Ageing**

In addition to our unique level of cognitive abilities, humans have unusually long life spans. Average life expectancy has increased in our century. The old, those over 60 years of age, are the fastest growing segment of our population. These changing demographics make the cognitive abilities of older individuals an issue of great social and cultural importance. There is a large and growing literature describing the many psychobiological changes associated with ageing (Mc Farland; Ross & Giltrow, 1992; Sterns & Miklos, 1995; Salthouse, 1991; Cavanaugh & Whitbourne, 1999; Morgan & Kunkel, 1998).

Life span development for most biological functions shows an increase in functioning in early life and a decrease in late life. These periods of increasing and decreasing function are commonly referred to as maturation, or growing old. It is clear that as we grow older we can expect to experience a number of physiological changes, e. g. decline in muscle strength, lung capacity, pumping capacity of the heart, elasticity of skin and blood vessels (Elias & Elias, 1990). What can be said of psychological function, particularly of our information-processing abilities? In the absence or any clear pathology, do cognitive function show senescent decline? What about gender differences? What can be said about our parapsychic beliefs?

We are responding to the meaning that states our life cycle in social context. The socio-cultural perspective, that we live in will form our interests, needs and cognitive system from early life. In the opinion of Morgan & Kunkel, (1998) the physiological and psychological research on ageing shows that ageing only causes a small reduction in our physical and mental functioning until about 60 years old. But the meaning, that culture and society emphasize, is sometimes different from these changes. For example, in retirement, an old man who perceives his new restriction in society may experience more parapsychic beliefs than before.

Clark, (1991) found that although some correlations between age and beliefs in the parapsychic phenomena were significant, they indicated only slight tendencies. The older the respondent, the stronger was the belief in telepathy, biorhythms and body auras and the stronger the disbelief in ghosts and devils, since correlation coefficients measure only the strength of linear relationships, the correlation between age and beliefs did not show non-linear differences across the three age groups. For example, 1.44% of the oldest group believe in precognition and 45% in life after death, in contrast to between 56% and 61% of the youngest and middle-aged groups for these phenomena. The oldest group, however,

did have the largest percentage of believers in psychic healing (53%), when compared to the young people (39%).

In contrast to these findings, Haraldson, (1985) has provided data for telepathy, precognition and psychic healing by gender and age from a 1980 representative Swedish survey. Belief in telepathy in a New Zealand sample was comparable to that of the Swedish survey in terms of its distribution across gender and its distribution across age groups. More Swedish people expressed some disbelief and strong disbelief than New Zealanders for both genders and across all age groups. About beliefs in parapsychic phenomena (Messer & Griggs, 1989) reported a mutual effect between gender and parapsychic phenomenon among college students in the context of their introductory psychology course. Women believed significantly more in astrology and biological rhythms. In all cases, except for extra-terrestrial visitation, women had higher mean belief scores than men. In seven further phenomena (for example out of body experience, tarot cards, reincarnation) women achieved higher rates than men, although the differences were not statistically significant.

## **Laterality**

In studying organs, it can be seen that each organ has been adapted for performing a function. For example, the ear has been regulated for hearing, but it is not suitable for smelling. The nose is suitable for this purpose but not for hearing. We can assimilate the organs of the body as the parts of a machine in that each one is set for conducting special functions. Therefore, it would be correct to assert that information-processing of the mind and brain is not exceptional to this rule. The information-processing ability of humans has been studied for centuries. The most widely accepted idea is that the left hemisphere is specialized for analytic processing, and the right for holistic processing (Hellige, 1990).

The most obvious behavioral asymmetry is the right-handedness of approximately 90% of the population. The conception of left hemisphere dominance (in right-handers) came to be applied not only to analytic and holistic processing but was also extended to other aspects of behaviour and cognition, such as hemispheric dominance for speech and inductive and deductive information processing in the two halves of the brain. Since Aristotle's time, the inductive has been understood as a method of reasoning from the particular to the general, and deduction has been referred to as the method of reasoning from the general to the particular. Let us consider an interesting piece of experimental research which was performed in deductive and inductive cognitive processing by Bianki, (1988) on 586 white wistar rats. Bianki found deductive reasoning processes in the left-hemisphere of these animals. The results raise the possibility of a left hemisphere for analytic processing and a right for holistic processing in humans.

Whether humans with left or right hemispheres differ in information-processing is a question of considerable interest from both theoretical and applied perspectives. Although many researcher's have addressed this question (e. g., Eccles, 2000, Bianki, 1988; &

Hellige, 1990), until now no systematic research has been carried out on whether the right hemisphere plays a dominant role in the production and perception of parapsychic beliefs, except by Ehrenwald, (1984) who believes that the location of parapsychic phenomena (Psi) is in the right-hemisphere of the brain.

## **Aim of the Study**

Psychosocial variables like gender roles and different rewards for males and females are turning into gender similarities all around the world, but we still have some cultural repression of females, especially in some countries. Women are still growing up in a psychologically and socially male dominated culture, which for example causes pressures to achieve academic education for females. This makes it difficult to get them into good jobs; they have economic dependence and they are being exposed to more social stresses. The major focus in this research is the possibility of comparing two culturally different countries: Iran and Germany, Some religious traditional beliefs seem related to some parapsychic beliefs. The primary goals of interest in this study are understanding gender differences in parapsychic beliefs' tendency in a cross-cultural sample (Iranian and German). In addition, I offer a cross-sectional study for the developmental examination of the extent to which gender differences found in parapsychic beliefs depend on age. The ages have been divided into two subgroups:

16 to 40 year olds;  
those 60 years old and older.

These age groups correspond roughly to college students and old age. In addition, in the light of some research, we examined whether the right hemisphere had a dominant role in the production and perception of parapsychic beliefs.

## **Hypotheses of the present study**

1- The right hemisphere plays a dominant role in the production and perception of parapsychic beliefs. Ehrenwald, (1984) argued that Psi is a right-hemispheric activity. Approximately 95% of all right-handed people maintain speech and language control in their left hemisphere (Halpern, 1992). In particular, the right hemisphere co-ordinates movement for the left half of the body and the left hemisphere co-ordinates movement for the right half of the body. A right-hander is (usually) left-hemisphere dominant and a left-hander is (often) right-hemisphere dominant (Hellige, 1990). Although there has been social pressure placed on natural left-handers to write or eat with their right hand, there are no social pressures to change foot preference, because foot preference is usually in agreement with hand preference (Halpern, 1992). A better way to indicate hemispheric dominance is with a PET scan. With this technology it becomes possible to identify with some precision where in the brain different cognitive processes occur. It was however too expensive for our research budget.

2- Iranian females are more superstitious than German females. A statistically significant difference between Iranian females and German females was that Iranian women in particular were hypothesized to be more superstitious than German

women. As previously mentioned, Iranian women are still growing up psychologically and socially in a male dominated culture than German women. For this reason, they were expected to be more superstitious than German women.

**3- Men's beliefs remain relatively constant until the old age phase, then their tendency changes towards parapsychic beliefs, but women's parapsychic belief remain relatively constant through different ages.** Several aspects of psychological functioning are affected by normal brain ageing, which may affect older adults' adaptation to the environment (Whitbourne, 1987). After birth, males die an average of approximately 6 to 7 years earlier than females (Halpern, 1992). There are several health-related factors that tend to favour women. Some researchers argue that because women in many societies live out their lives mainly in domestic settings, they face fewer difficult transitions in old age (Keith, 1990). For example, the household tasks that women perform in many societies may be more easily adapted with age than the tasks men perform. The basis for women improving status within many societies appears to be the separation of the domestic and public spheres (Cavanaugh, 1993). That is, young women in these societies are greatly restricted in what they are allowed to do with most of their duties focused on domestic tasks, with increasing age. These structures however dissipate and women are allowed to assume roles of authority and power similar to those held by men. He stated - and most researchers agree - that women in societies age with less difficulty than men (Keith, 1990).

## **Method**

### **Subjects**

The sample used in the present analyses was drawn from two studies: the pilot study and the principal study. Both studies used the same procedure. The pilot study was conducted to gain validation evidence for a parapsychic phenomenon questionnaire ( WM ). Based on the analysis of the pilot study data, the principal study was conducted.

There were four separate groups of samples in both countries: Two younger groups and the two older groups. First, pilot groups and second, study groups. The individuals in both groups (pilot and study groups ) were divided into two subgroups:

16 to 40 year olds;  
those 60 years old and older.

They correspond roughly to college students and old age in both countries. The total number of subjects was 1587 from four separate groups in both countries; pilot sample 461 and study groups 1126. The pilot sample from Iranian younger (student ) groups was 61 male, and 67 female, and from older groups 53 male, and 39 female. The pilot sample from German student groups was 111 male, and 80 female. And from older groups 22 male, and 28 female. The Iranian principal study groups consisted of 734 male and female in total two age groups, student groups 191 male, and 265 female. And from older groups 193 male, 85 female. The German principal study groups consisted of 392 male and female in total two age groups, student groups 150 male, and 95 female. From older groups 47 male, and 100 female.



Table 1  
Principal study groups ( N = 1126 )

Variable	Iran			Germany		
	Women	Men	Total	Women	Men	Total
Gender	350	384	734	195	197	392
In %	32%	34%	65%	17%	18%	35%
Old	85	193	278	100	47	147
In %	8%	17%	24%	9%	4%	13%
Young	265	191	456	95	150	245
In %	23%	17%	40%	8%	13%	22%
Left – handed	24	36	60	11	10	21
In %	2%	3%	5%	1%	1%	2%
Right – handed	273	330	603	182	130	302
In %	24%	29%	54%	16%	12%	27%

The younger samples in both of these groups and in both countries were approached individually at the university's cafeteria and dormitories, and asked to complete a questionnaire. On the recommendation of the staff, we thanked the subjects for their participation by providing the Iranian participants with coupons and the German with 5 DM. With the same method, the older persons in the German samples were approached individually at a local recreation center for senior citizens, senior groups in church, and an old people's home in Hannover. The Iranian samples, we approached people individually at the old people's home in Teheran. We thanked the Iranian subjects for their participation by given them a post card from Germany and like – versa for the German participants. The average age of subjects in the pilot study in younger groups was 24 (ranging between 16 and 40 years ), and the average age of subjects in the older groups was 67 (ranging between 60 and 80 years ). In the study groups, the average age of individuals in the younger group was 26 (ranging between 16 and 40 years ), and the average age of subjects in the older groups was 68 years ( ranging between 60 and 92 years ).

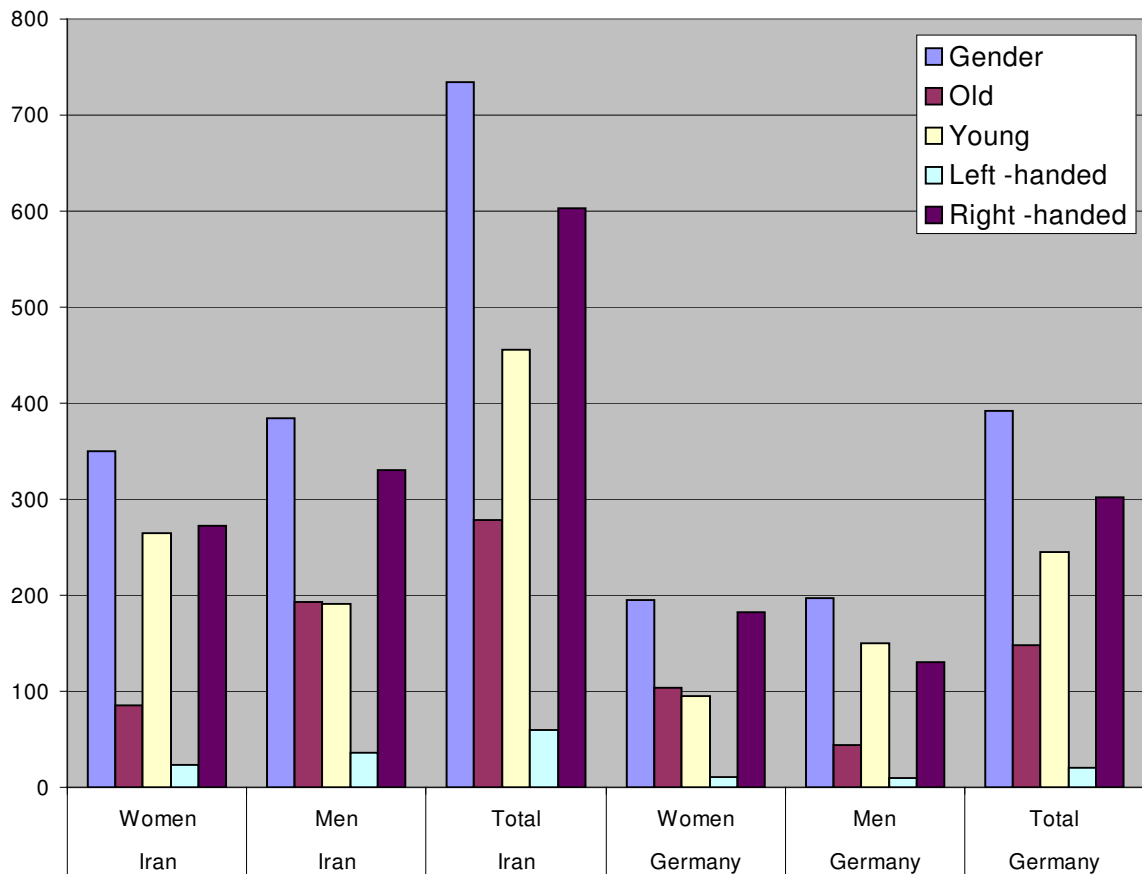


Figure 1. Principal study groups( N = 1126 )

### Procedure

On the first page of the questionnaire, subjects were informed that the purpose of the study was to assess their beliefs in parapsychic phenomena. They were asked to rate their answers on the 5- point Likert - type rating scales. The individuals in the pilot groups completed questionnaires concerning their preferred characteristics only about parapsychic phenomenon which stem from the Euler and Adolph, (1993 ) questionnaires. Initially, to find out the efficiency of this questionnaires for application in Iran, we offered these questionnaires to assess the reliability of the test. Analyses of the pilot study revealed significant reliability in the questionnaires. Then, to explore the pattern of the underlying dimensions of the questionnaire, I conducted the 18 parapsychic phenomena in questionnaire to principal components analysis.

In principal study groups, for the purpose of testing our first hypotheses, we used two more tests. First, to assess hand preferences, we used, a revision of Annett's, (1967 ) hand preference questionnaire. Annett's questionnaire was originally written in English. It was translated into the German and Persian languages. The parapsychic phenomenon which stem from Euler and Adolph's questionnaire were originally written in German. Therefore, it was translated by Iranian groups into Persian. Both of the translated material were then translated back into English and German (Annett's & Euler's ). There were no discrepancies between the different versions. A handedness score can be obtained by assigning two points to "always" responses, one point to "usually", and none to "no preference". Scoring left preferences as negative and right preferences as positive gives a range of scores from -24 for the most left-handed to +24 for the most right handed. The authors arbitrarily called persons receiving scores between +9 and above right-handed, those with scores between -9 to +8 were called mixed-handed, and scores from -9 to -24 indicated left-handedness.

To achieve more accuracy in my study, I offered one more test. A group test for the assessment of performance between the hands. Subjects were informed on the third page of the questionnaire to place dots in circles as rapidly as possible. This test was developed as one which could easily be given to large groups of subjects, and which provided a reliable continuous measure of hand preference (Tapley, & Bryden, 1985 ). On the first page of the questionnaire participants were assured of the anonymity of their responses and were encouraged to ask questions if they encountered any problems. The instructions appear to have been quite clear, no subjects reported any difficulties in understanding the task.

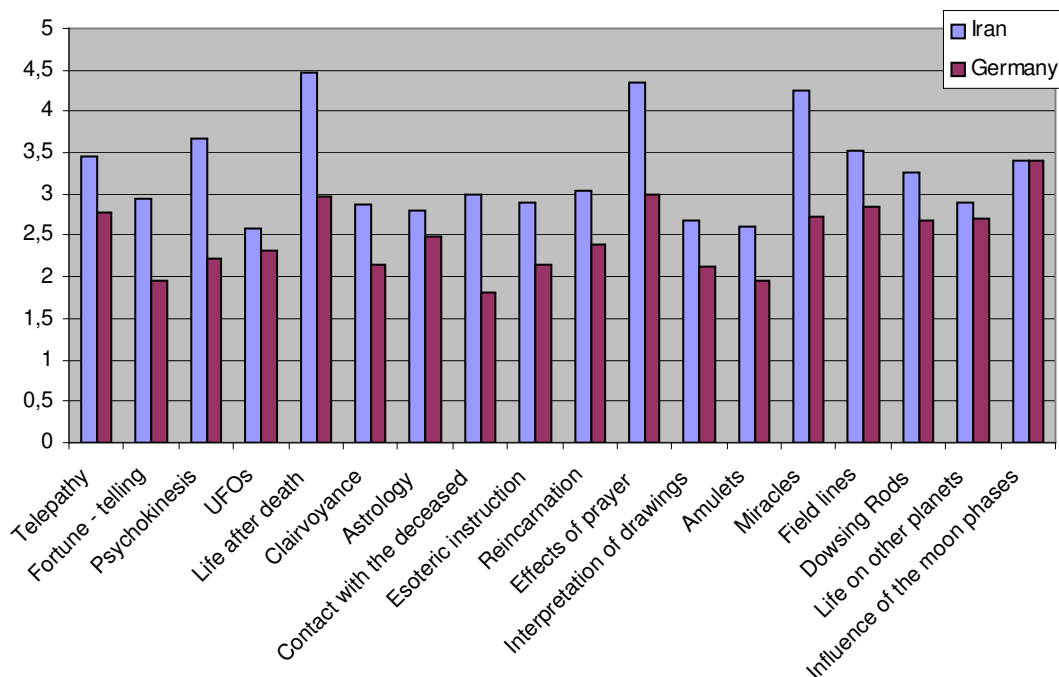


Figure 2. Mean differences between the two pilot sample groups (Iran & Germany )

## Results

To examine the reliabilities of the parapsychic phenomenon questionnaires (WM – Fragebogen II & III ), I conducted a pilot study in both countries.

The Means and Standard Deviations for these items can be seen in Table 2

Table 2 presents Alpha and Split – half reliability coefficients for the questionnaire in both countries. Alpha and Split – half reliability coefficients in the German sample were ,87 and ,86, and for the Iranian sample ,80 and ,71.

Table 2  
Alpha and Split – half reliabilities for the ( WM ) questionnaire

WM questionnaire	N of Cases	Alpha reliability coefficients	Split – half reliability coefficients
Iran	220	,80	,71
Germany	241	,87	,86
Both countries	461	,88	,85

Although the questionnaire in Germany was slightly more reliable, the differences were small enough to accept it as a reliable questionnaire in both countries. Table 3 presents Means and Standard Deviations only for Iranian samples and German pilot sample groups. It is in my interest to compare the Means and Standard Deviations, for any phenomenon in both countries. In figure 2; A comparative results in belief in different parapsychic phenomena between two sample groups are presented. Among the different parapsychic phenomena, life after death, effects of prayer and miracles which stem from religion were obviously high in the Iranian sample.

Table 3  
Means and Standard Deviations for parapsychic phenomena (WM ) in Iran & Germany

Parapsychic phenomenon	IRAN		Germany	
	M	S. D	M	S. D
Telepathy	3,45	1,13	2,78	1,21
Fortune - telling	2,94	1,11	1,95	,96
Psychokinesis	3,66	1,09	2,23	1,29
UFOs	2,59	1,05	2,33	1,21
Life after death	4,47	,88	2,97	1,24
Clairvoyance	2,88	1,19	2,14	1,09
Astrology	2,79	1,01	2,50	1,24
Contact with the deceased	2,99	1,19	1,81	1,03
Esoteric instruction	2,89	1,13	2,16	1,19
Reincarnation	3,04	1,39	2,39	1,17
Effects of prayer	4,34	1,03	3,00	1,38
Interpretation of drawings	2,67	1,27	2,12	1,11
amulets	2,61	1,18	1,95	1,07
Miracles	4,25	,94	2,72	1,34
Field lines	3,52	,96	2,85	1,29
Dowsing Rods	3,26	1,01	2,69	1,28
Life on other planets	2,90	,99	2,70	1,30
Influence of the moon phases	3,40	,93	3,41	1,27

## Principal Components Analysis

A general understanding of parapsychic phenomena in the questionnaire requires a framework within which empirical findings can be interpreted. To explore the pattern of the underlying dimensions of the questionnaire, I conducted the 18 parapsychic phenomena in questionnaire to principal components analysis, completed for a total sample of 1126, which revealed three components. With these analysis, I have reduced the dimensionality of the questionnaire from 18 parapsychic phenomena to 3 uncorrelated dimensions and thus considerably simplified the structure of the questionnaire. Steps in principal component include selecting and measuring a set of variables, preparing the correlation matrix, extracting a set of factors from the correlation matrix, determining the number of factors, rotating the factors to increase interpretability, and, finally, interpreting the results. To conceive 18 items related to parapsychic phenomenon principal components analysis split 18 items into 3 latent dimensions. The first component has to extract as much variance as possible from the original variables, the second and third component as much as possible from the remaining variance, until all variance is used up. According to Epstein, Lipson, Holstein, and Huh (1992), findings about relationships between parapsychic beliefs and some personality dimensions, I would like to formulated the component analysis results for the all of the eighteen items in cognitive and personality dimensions. For example: Telepathy, Fortune – telling, psychkinesis, contact with deceased, esoteric instruction, as sense of control over one’s environment.

In the other dimensions, astrology, interpretation of drawings, amulets, field lines, dowsing Rods, the influence of the moon phases, UFOs, and life on other planets are classed as lack of control or that one is controlled by his or her environment. In the third dimension, is the effects of prayer, miracles, life after death and somehow reincarnation which stem from religious beliefs.

As we see, in Table 4 the three principal components for the total sample explained 51% of total variance, which used 15 of the 18 items. The first component explained about 32% of the total variance. The second principal component, accounted for about 10% of the total variance. And the third, component explained 8% of the total variance. Principal component analysis used a varimax rotation, and only those items were included in the components which had above .50. The first component, related to 8 parapsychic phenomena (fortune – telling, psychokinesis, contact with the deceased, clairvoyance, esoteric instruction, amulets, astrology, interpretation of drawings). One of the functions of our cognitive system is to enable us to predict the occurrence of events and to create the means for exercising control over those that affect our daily lives. These phenomena except in last three items (amulets, astrology and interpretation of drawings) can be reflected in the belief of being able to have control over one's environment. However, such a sense of control can lead to unrealistic optimism or to positive illusions (Taylor, 1983).

The second component occurred on the 3 questions: 1 - Life after death. 2 – Effects of prayer. 3 – Miracles. These phenomena come to us as part of our religious beliefs. The third component, indicated 4 items (influencing by field lines, dowsing Rods, influence of moon phases and life on other planets ). The last comparison is between the cognition that one has a sense of control, which by the first component, versus the other cognitive systems that one is controlled by that which is accounted for the by third component. As can be seen, cognitions about these parapsychic beliefs varied from gender, age, geographical differences (Iran & Germany), and hemispheric asymmetry. Table 4 presents the results obtained during the investigation.

Table 4  
Principal components of total sample (N=1126)

Factor	First component	Second component	Third component
Fortune - telling	.71		
Psychokinesis	.70		
Contact with the deceased	.67		
Clairvoyance	.66		
Esoteric instruction	.64		
Amulets	.63		
Astrology	.60		
Draw interpretation	.56		
UFOs	.44		
Life after death		.81	
Effects of prayer		.78	
Miracles		.72	
Field lines			.77
Dowsing Rods			.75
Influence of the moon phases			.68
Life on other planets			.57
Variance (in %), total variance 50%	32 %	10 %	8 %

Note. Varimax rotation and eigenvalues 1,5. Loadings of .50 & more than .50.

To explore the more about dimensionality of the questionnaire about gender differences, I analyzed the eighteen phenomena with principal components analysis between males and females. The male group (N = 581) revealed three components. The first component, related to 9 parapsychic phenomena (psychokinesis, fortune – telling, clairvoyance, amulets, esoteric instruction, contact with the deceased, interpretation of drawings, UFOs and astrology). This explained about 32% of the total variance. The second component, indicated 3 items: Life after death, Effects of prayer and Miracles, which accounted for about 11% of the total variance. The third component about 9% of the total variance and was related to 4 parapsychic phenomena: Influencing by field lines, Dowsing Rods, Influence of moon phases and Telepathy. Table 5 shows the results.

Table 5  
Principal components for males (N=581)

Factor	First component	Second component	Thrid component
Psychokinesis	.72		
Fortune - telling	.69		
Clairvoyance	.69		
Amulets	.66		
Esoteric instruction	.63		
Contact with the deceased	.63		
Interpretation of drawings	.53		
UFOs	.51		
Astrology	.50		
Life after death		.84	
Effect of prayer		.81	
Miracles		.72	
Field lines			.78
Dowsing Rods			.74
Influence of the moon phases			.72
Telepathy			.50
Variance (in % ), total variance 52%	32%	11%	9%

Note. Varimax rotation and eigenvalues 1,5. Loadings of .50 & more than .50.

The female group ( N=545 ) revealed only two components. The first component, related to 13 phenomena (astrology, esoteric instruction, fortune – telling, influencing by field lines, psychokinesis, life on other planets, contact with the deceased, dowsing Rods, amulets, UFOs, clairvoyance, interpretation of drawing and influence of the moon phases ). This explained about 34% of the total variance. The second component, showed 4 items: Life after death, Miracles, Effects of prayer and Reincarnation, which accounted for about 9% of the total variance.

Table 6 presents the results.



Table 6  
Principal components for females (N=545)

Factor	First component	Second component
Astrology	.67	
Esoteric instruction	.66	
Fortune - telling	.62	
Field lines	.62	
Psychokinesis	.62	
Life on other planets	.61	
Contact with the deceased	.57	
Dowsing Rods	.55	
Amulets	.53	
UFOs	.52	
Clairvoyance	.52	
Interpretation of drawings	.52	
Influence of the moon phases	.51	
Life after death		.76
Miracles		.73
Effects of prayer		.72
Reincarnation		.54
Variance (in %), total variance 43%	34%	9%

Note. Varimax rotation and eigenvalues 1,5. loadings of .50 & more than .50.

Here we consider the fact that 18 parapsychic phenomena along with the subject's gender have been shown to differ. For example, in Table 5 and 6 between the male and females. In the male group, a set of 18 parapsychic phenomena is transformed in 3 uncorrelated components: The first component, have more sense of control than those factors which were accounted for the third component. The second principal component come to us as part of our religious beliefs. But in the female group it was transformed into 2 uncorrelated components. The first component, related to both phenomena, there was a sense of control and a sense of being controlled by their environment. The second component was as part of religious belief.

In an attempt to achieve comparability between the two age groups: In the old group (N=426 ) revealed were two components. The first component, related to 8 parapsychic phenomena (esoteric instruction, fortune – telling, amulets, psychokinesis, astrology, contact with the deceased, clairvoyance, UFOs). This explained about 31% of total variance. The second component accounted for about 10% of the total variance, and related to 5 phenomena (life after death, miracles, dowsing Rods, effects of prayer, Field lines). Table 7 shows the results.

Table 7  
Principal components for old group(N=425)

Factor	First component	Second component
Esoteric instruction	.74	
Fortune – telling	.73	
Amulets	.72	
psychokinesis	.69	
Astrology	.68	
Contact with the deceased	.66	
Clairvoyance	.65	
UFOs	.64	
life after death		.73
Miracles		.72
Dowsing Rods		.60
Effects of prayer		.59
Field lines		.52
Variance (in %), total variance 41%	31%	10%

Note. Varimax rotation and eigenvalues 1,5. Loadings of .50 & more than .50.

The young group (N = 701) showed two components. The first component accounted for about 33% of the total variance and related to 8 phenomena (life after death, contact with the deceased, miracles, effects of prayer, fortune – telling, clairvoyance, esoteric instruction and reincarnation). The second component, which accounted for about 11% of the total variance, related to 5 phenomena (influence of the moon phases, life on other planets, field lines, dowsing Rods and UFOs). Table 8 presents the results.

Table 8  
Principal components for young group(N=701)

Factor	First component	Second component
Existence after death	.78	
Contact with the deceased	.75	
miracles	.73	
Effects of prayer	.72	
Fortune – telling	.67	
Clairvoyance	.60	
Esoteric instruction	.54	
Reincarnation	.50	
Influence of the moon phases		.71
Life on other planets		.64
Field lines		.63
Dowsing Rods		.62
UFOs		.55
Variance (in %), total variance 44%	33%	11%

Note. Varimax rotation and eigenvalues 1,5. Loadings of .50 & more than .50.

Component analyses revealed that the old group except for amulets, astrology and UFOs had more tendency in the following phenomena (can be seen in Table 7). These phenomena, can be reflected in the belief of being able to exert control over one's environment. The second component, showed those items which stem from religious beliefs which come together with other phenomena. For example, dowsing Rods and field lines. These phenomena can be explained as a lack of control. On the other hand, the young group in the first component showed those factors which come from religious beliefs together with others, which were revealed as a sense of control. In the second component, they showed those factors which can be reflected as lack of control.

To understand more about these items related to geographical location and different social and cultural context (Iran & Germany), I factor analyzed the eighteen phenomena: the German group (N =392) showed two components. The first component, related to 12 items: Esoteric instruction, psychokinesis, fortune – telling, field lines, influence of the moon phases, dowsing Rods, interpretation of drawings, UFOs, astrology, amulets, life on other planets and clairvoyance. This explained about 30% of total variance. The second component, accounted for about 12% of the total variance and related to 4 items: life after death, effects of prayer, miracles and reincarnation. Table 9 showed the results.

Table 9  
Principal components for German group(N=392)

Factor	First component	Second component
Esoteric instruction	.69	
psychokinesis	.65	
Fortune - telling	.65	
Field lines	.64	
Influence of the moon phases	.61	
Dowsing Rods	.60	
Interpretation of drawings	.60	
UFOs	.60	
Astrology	.60	
amulets	.60	
Life on other planets	.58	
Clairvoyance	.52	
Life after death		.78
Effects of prayer		.78
Miracles		.65
Reincarnation		.55
Variance ( in %), total variance 42%	30%	12%

Note. Varimax rotation and eigenvalues 1,5. Loadings of .50 & more than .50.

The Iranian group (N = 734) revealed three components: The first component explained about 27% of the total variance and related to 7 items: Psychokinesis, contact with the deceased, fortune – telling, clairvoyance, esoteric instruction, astrology, amulets. The second component accounted for about 10% of the total variance and related to 4 items: Field lines, dowsing Rods, influence of the moon phases, life on other planets. The third component accounted for 9% of the total variance and related to 3 items: life after death, miracles, effects of prayer. Table 10 presents the results.

Table 10  
Principal components for the Iranian group(N=734)

Factor	First component	Second component	Third component
Psychokinesis	.76		
Cotact with the deceased	.70		
Fortune – telling	.68		
Clairvoyance	.65		
Esoteric instruction	.62		
Astrology	.60		
amulets	.59		
Field lines		.80	
Dowsing Rods		.75	
Influence of the moon phases		.61	
Life on other planets		.51	
Life after death			.79
miracles			.74
Effects of prayer			.72
Variance ( in %), total variance 46%	27%	10%	9%

Note. Varimax rotation and eigenvalues 1,5. Loadings of .50 & more than .50.

In Table 9 and 10, results are given obtained from 392 German males and females with regard to 734 Iranian males and females. Here we consider that some parapsychic beliefs along with the subject's nationality have been shown to differ. For example, in the German group, the first component, showed both factor which I explained as a sense of control or uncontrollability in the first component. The second component showed those factors which could be explained as religious beliefs. On the other hand, the Iranian group, as the first component, showed those factors which were interpreted as a sense of control, versus other cognitive systems that one is controlled by which accounted for the third component. In the second component, similar to the German group, those factors which were explained as religious beliefs. Finally, I turn to the relationship between the two hemispheric asymmetries. The left handed group (N = 81) revealed three components. The first component accounted for 31% of the total variance, and related to 5 phenomena (esoteric instruction, contact with the deceased, fortune – telling, life after death and psychokinesis). The second component, accounted for about 12% of the total variance and related to 5 factors (amulets, interpretation of drawings, astrology, clairvoyance and UFOs). The third component, accounted for 9% of the total variance and related to 4 factors: Field lines, dowsing Rods, influence of the moon phases and miracles. Table 11 presents the results.

Table 11  
Principal components for the left handed (N=81)

Factor	First component	Second component	Third component
Esoteric instruction	.81		
Contact with the deceased	.79		
Fortune - telling	.69		
Life after death	.62		
Psychokinesis	.54		
Amulets		.76	
Interpretation of drawings		.71	
Astrology		.65	
Clairvoyance		.59	
UFOs		.50	
Field lines			.86
Dowsing Rods			.72
Influence of the moon phases			.63
Miracles			.51
Variance (in %), total variance 52%	31%	12%	9%

Note. Varimax rotation and eigenvalues 1,5. Loadings of .50 & more than .50.

In the right handed group (N = 905) both males and females showed three components. The first component accounted for about 33% of the total variance and related to 9 items (psychokinesis, fortune – telling, reincarnation, clairvoyance, esoteric instruction, amulet, astrology, interpretation of drawings and UFOs). The second component accounted for 9% of the total. variance and related to 3 factors: Life after death, effects of prayer, miracles. The third component, accounted for 8% of the total variance and related to 4 items: Field lines, dowsing Rods, influence of the moon phases, life on other planets. Table 12 presents the results.

Table 12  
Principal components for right handed (N=905)

Factor	First component	Second component	Third component
Psychokinesis	.72		
Fortune - telling	.70		
Reincarnation	.69		
Clairvoyance	.66		
Esoteric instruction	.64		
Amulets	.63		
Astrology	.58		
Interpretation of drawings	.56		
UFOs	.50		
Life after death		.78	
Effect by praying		.77	
Miracles		.73	
Field lines			.76
Dowsing Rods			.75
Influence of the moon phases			.68
Life on other planets			.53
Variance ( in % ), total variance 50%	33%	9%	8%

Note. Varimax rotation and eigenvalues 1,5. Loadings of .50 & more than .50.

Hemispheric asymmetries have been known to exist for centuries (Hellige, 1990). Individuals show a strong and consistent side preference. It is of interest to understand information processing differences between the two hemispheres, and in particular, to know more about some aspects of hemispheric asymmetry such as whether the right hemisphere plays a dominant role in the production and perception of parapsychic beliefs.

### **Hypothesis 1: The right hemisphere plays a dominant role in the production and perception of parapsychic beliefs.**

As formulated in my first hypothesis by investigating the most obvious behavioural asymmetry, left and right-handedness. The study was performed on 81 left-handed and 905 right-handed people of both genders. Although the regression equation is a linear equation, we can include nonlinear relationships in the analysis by redefining independent variable. Curvilinear relationships, can be made available for analysis by creating a new independent variable that is a cross product of two or more original independent variables and including it with the originals in the analysis. As I explained principal components for a total sample explained 51% of total variance, the first component, related to 8 parapsychic phenomena (fortune – telling, psychokinesis, contact with the deceased, clairvoyance, esoteric instruction, amulets, astrology, interpretation of drawings) as first dependent variable. The second dependent variable occurred on the 3 phenomena ( life after death, effects of prayer, miracles). These phenomena come to us as part of our religious beliefs. The third dependent variable, indicated 4 phenomena ( influencing by field lines, dowsing Rods, influence of moon phases and life on other planets ). Inferential tests were performed through multiple regression separately for 3 components of the 18 parapsychic phenomena in the questionnaire as the dependent variable and left handed versus right handed as first predictor. Analysis revealed that only the left handed had significantly more tendency towards all 3 components: First and second components were significant at the  $P < .01$ . And the third component was significant at the  $p < .05$ .

Table 13

Multiple regression analyses on left – handed (N =81) versus right – handed (N =905)

Variable	bo	B1	2 R	F	Level of significant
C1	-15,88	.8389	.005	5,87	.01**
C2	-3,95	.2827	.005	5,79	.01**
C3	- 6,15	.2870	.004	4,45	.03*

\*\* = P < .01

\* = P < .05

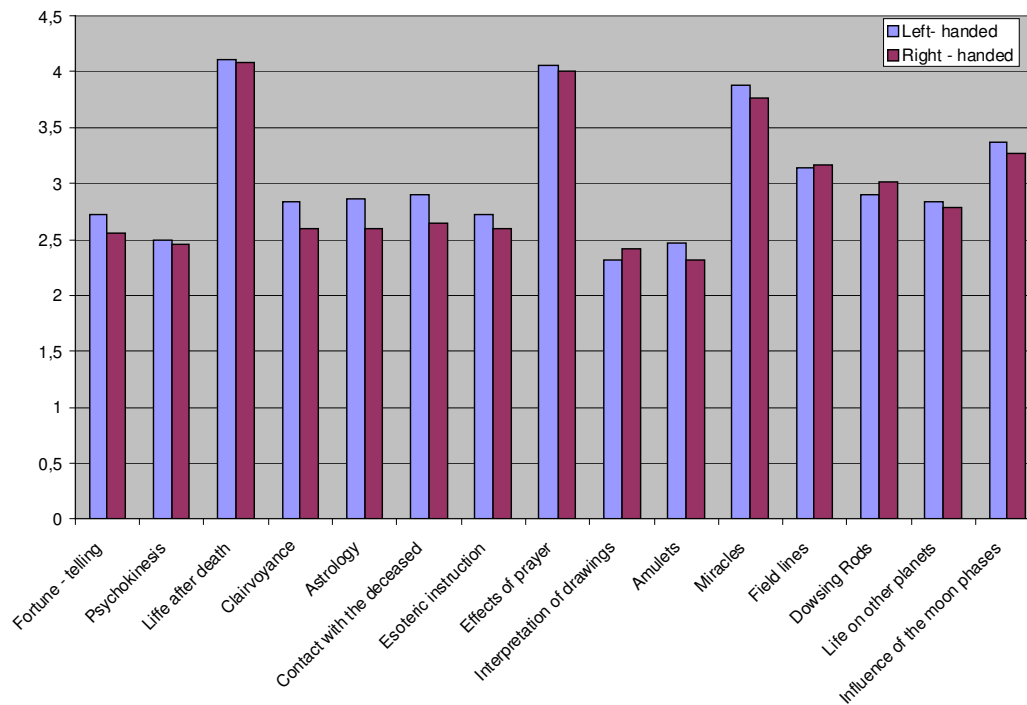


Figure 3. A comparative results in belief in different parapsychic phenomena between left and right-handedness

Simultaneously, we can compare these parapsychic phenomena in the form of principal component analysis.



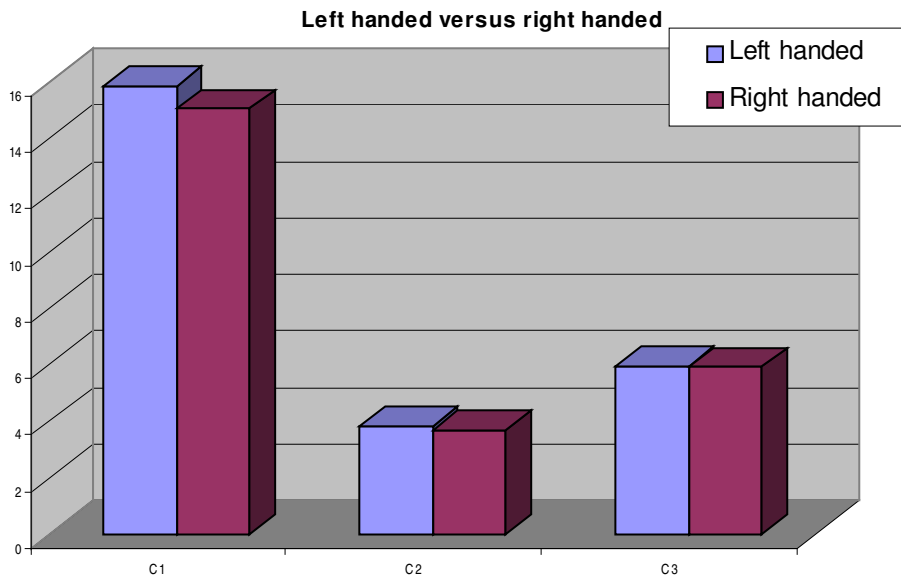


Figure 3-1. A comparative results in 3 principal components between left and right – handedness

Individuals can differ widely in aspects of hemispheric asymmetry. In order to determine whether laterality is related to gender differences, I was interested to know whether male or female showed more parapsychic beliefs with his or her dominant hemispheric asymmetry. So, first I analyzed the 15 phenomena with multiple regression in the male group. Table 14 presents the results obtained during the investigation.

Table 14  
Multiple regression for both left (N =46) and right – handedness (N =460) of males

Variable	bo	B1	2 R	F	Level of significant
C1	-19.320	2.2764	.017	8.90	.003**
C2	-4.0817	.2556	.002	.87	.352
C3	-6.7264	.2916	.002	.89	.89

\*\* = P < .01

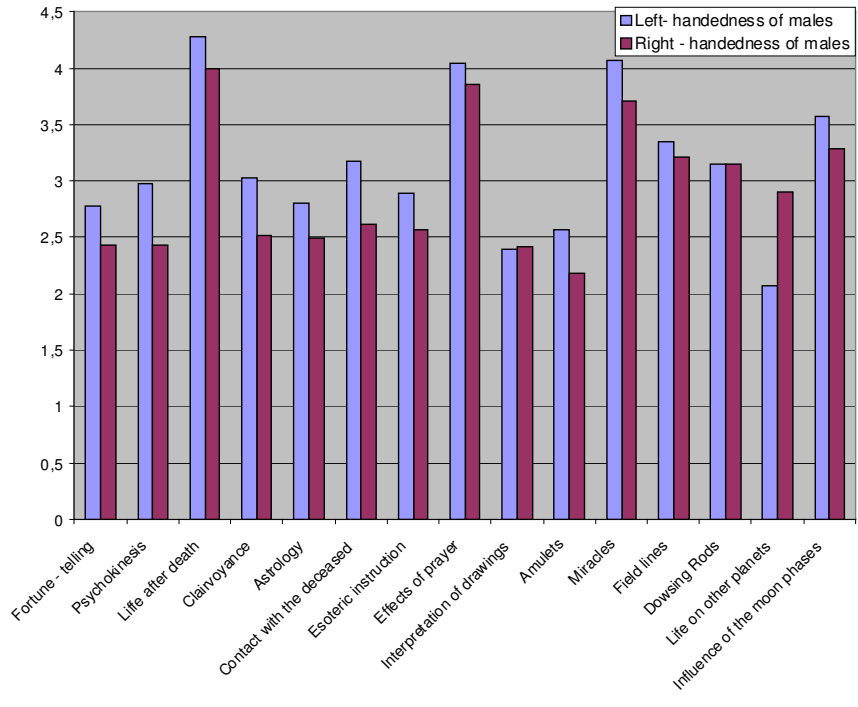


Figure 4. Means between the left and right handedness of males

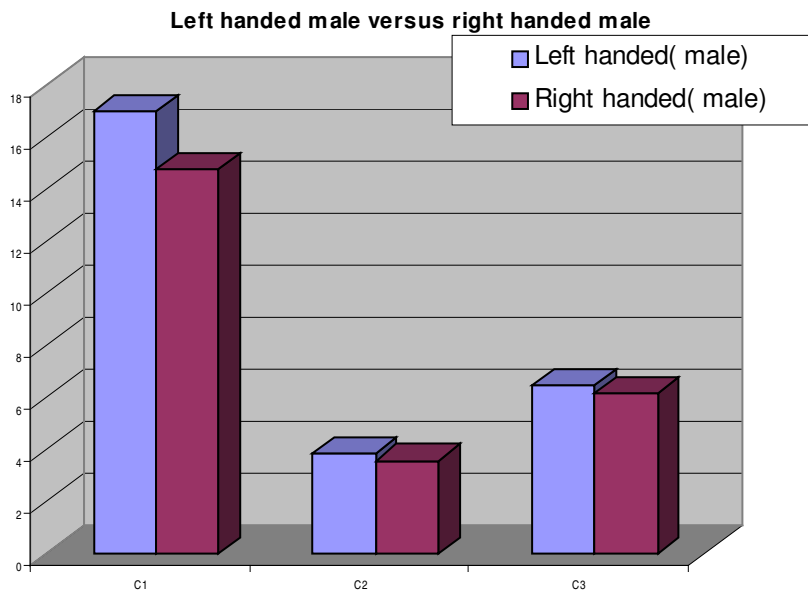


Figure 4-1. Means in 3 principal components between left and right handedness of males

The second analysis, related to the female group. Table 15 presents the results obtained during the investigation.

In Table 15: the multiple regression results for the all of the 15 items - for females.

Table 15

Multiple regression for both left ( N = 35 ) and right-handedness ( N = 455 ) of females

Variable	bo	B1	2 R	F	Level of significant
C1	-13.207	-1.07	.003	1.22	.269
C2	-3.8865	.0294	.000	8.5E – 03	.927

In Table 14 and 15, results of these analyses are given as obtained from 46 male left handers and 466 male right handers with regard to 35 female left handers to 455 female right handers. Here I consider that some parapsychic beliefs along with the subject's gender have been shown to differ. For example, in Table 14 left handed males indicated a higher level of belief in parapsychic phenomena. Only first component was significant at, the  $P < .01$  level. Second and third components were nonsignificant. Conversely, in Table 15 between female left versus right handers, all of the 2 components were nonsignificant. As I noted, in Table 6 parapsychic phenomena along with the subject's gender have been shown to differ. For example, in the male group, a set of 18 phenomena is transformed in 3 uncorrelated components. But in the female group it was transformed into 2 uncorrelated components.

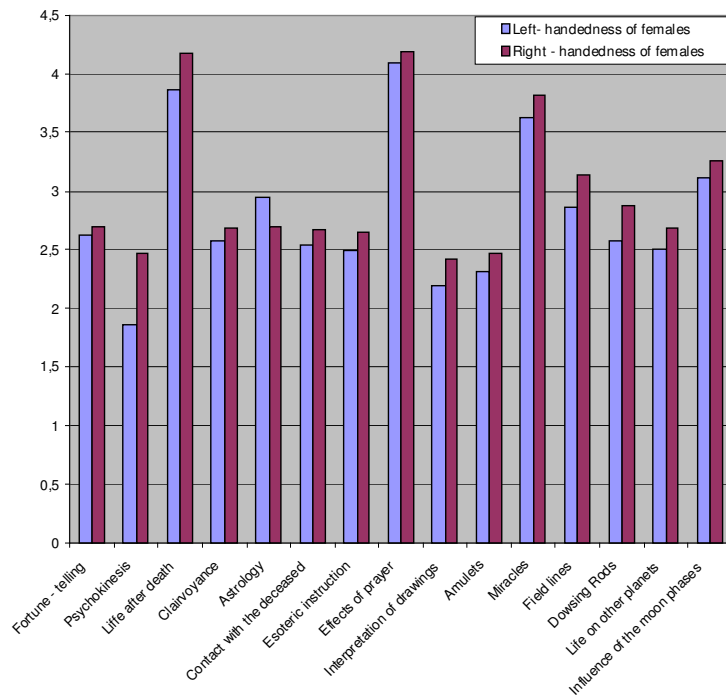


Figure 5. , A comparative results in belief in different parapsychic phenomena between left and right-handedness in females

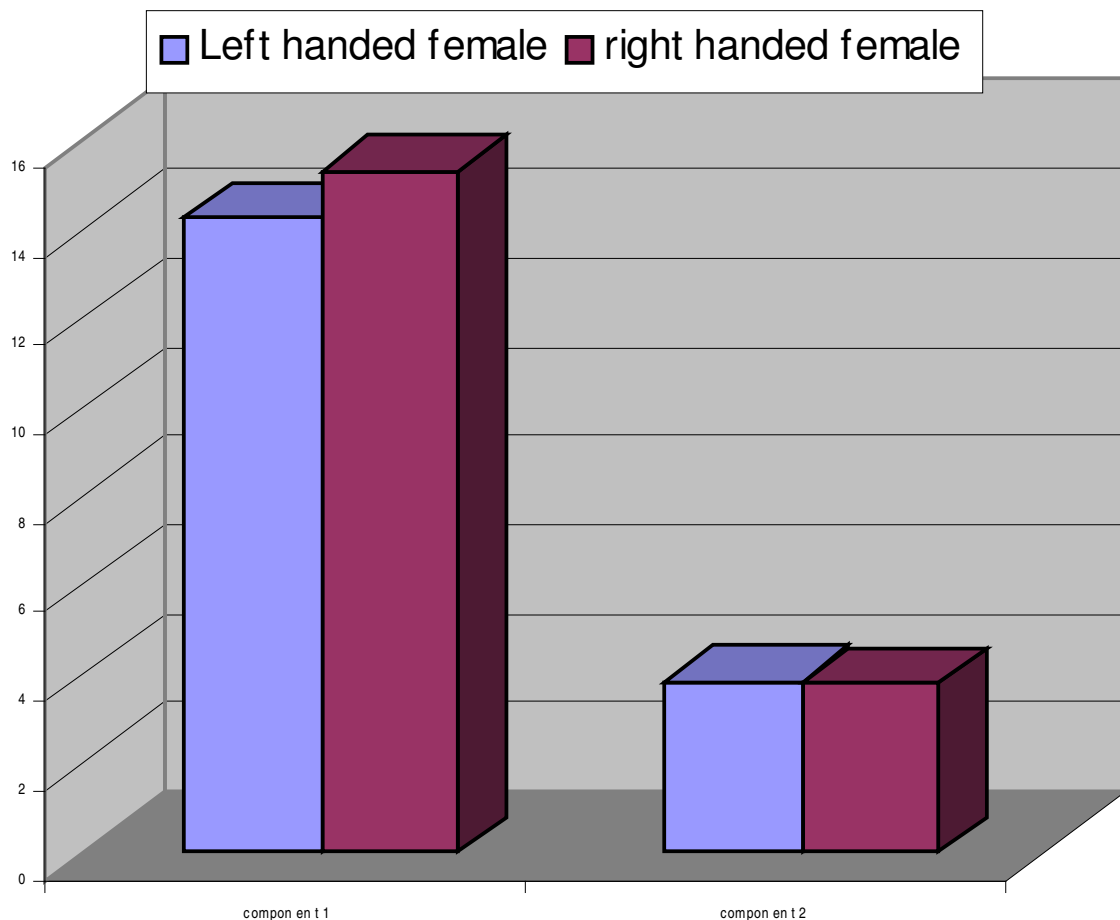


Figure 5-1. A comparative results in 2 principal components between left and right – handedness in females

The second hypothesis of this study was to examine whether Iranian females are more superstitious than German females. Furthermore, I explored a statistically significant difference between Iranian sample groups and German sample groups. Table 16 presents the results obtained during the investigation. My confidence in these findings is increased by the fact that the Iranian group indicated a higher level of belief in all of the 2 components. The Multiple regression results in first and second components were significant at the  $P < .001$  level. Third component was significant at the  $P < .05$  level.

Table 16

Multiple regression for both sample groups, Iran (N =734) versus Germany (N =392)

Variable	bo	B1	2 R	F	Level of significant
C1	- 12,322	-4,1016	.139	180.72	.000***
C2	- 3.0663	- .9064	.059	70.07	.000***
C3	- 5.6735	- .2761	.004	4.59	.032*

\*\*\* = P < .001

\* = P < .05

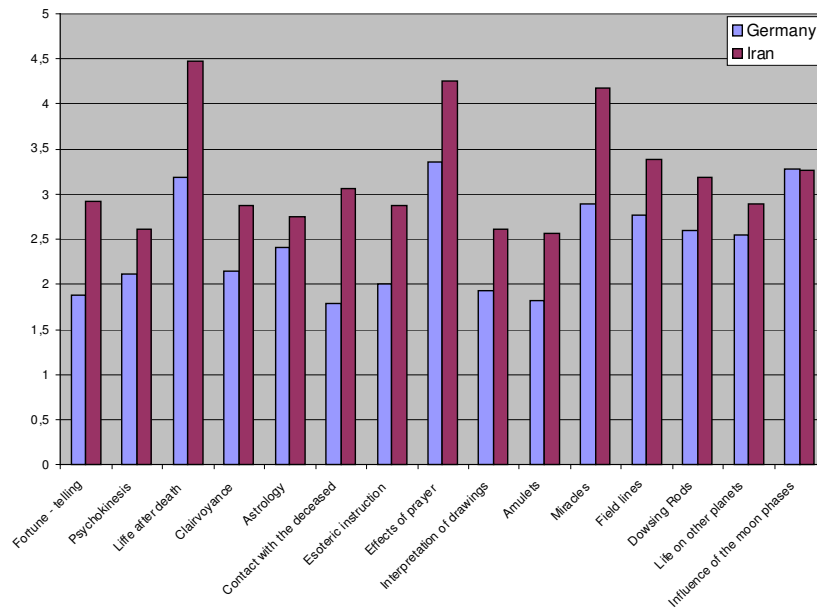


Figure 6., A comparative result in belief in different parapsychic phenomena between two sample groups from, Iran and Germany

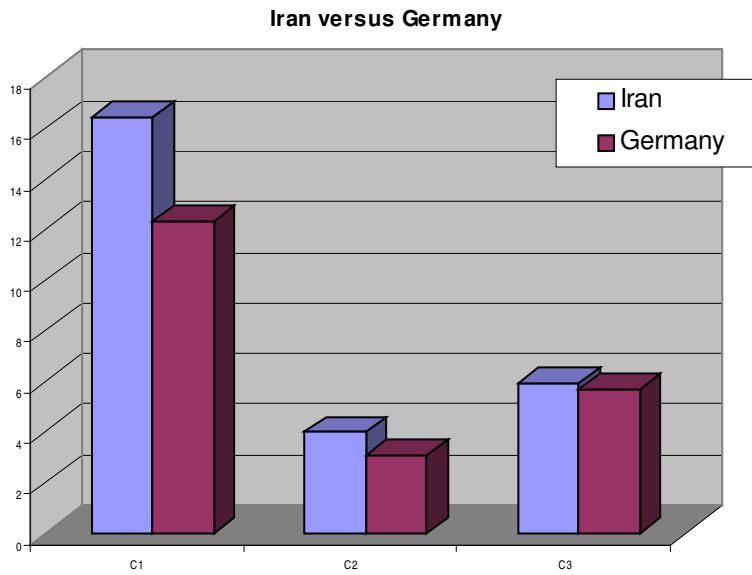


Figure 6-1. A comparative result in 3 principal components between two sample groups from, Iran and Germany

Figure 6 shows the results of the analyses obtained from the Iranian sample groups and German sample groups. To explore the pattern of differences between Iranian females and German females in social and cultural context, and to investigate these possibilities, I first conducted a multiple regression between gender differences about parapsychic beliefs in Germany. The multiple regression results can be seen in Table 17.

Table 17

Multiple regression results in belief in different parapsychic phenomena between both females ( N = 195 ) and males ( N = 197 ) in Germany ( Total N. = 392 )

Variable	bo	B1	2 R	F	Level of significant
C1	- 13. 885	1. 0375	. 011	4. 27	. 04*
C2	- 6. 7481	. 7176	. 021	8.47	. 004**

\* = P < .05

\*\* = P < .01

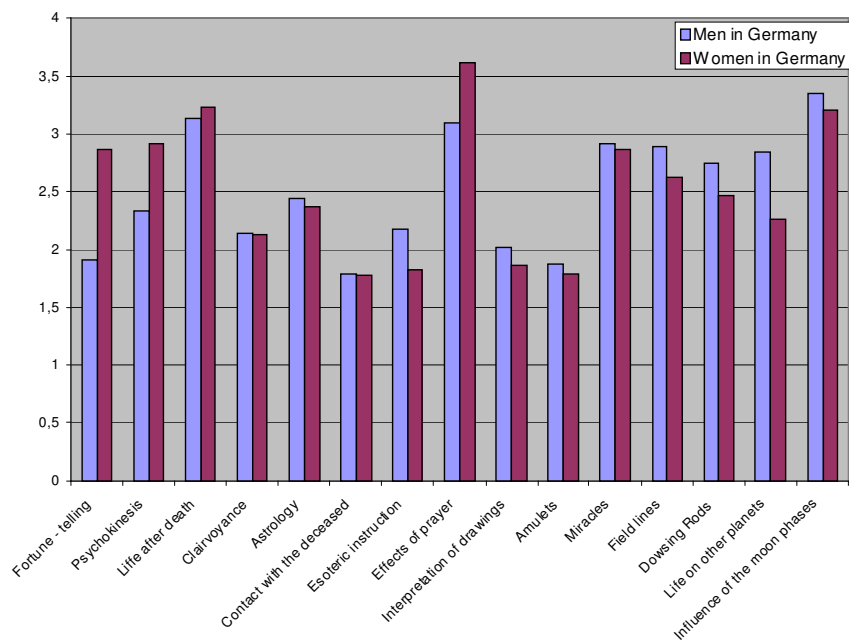


Figure 7, the results of these analyses are given in obtained from males and females in Germany



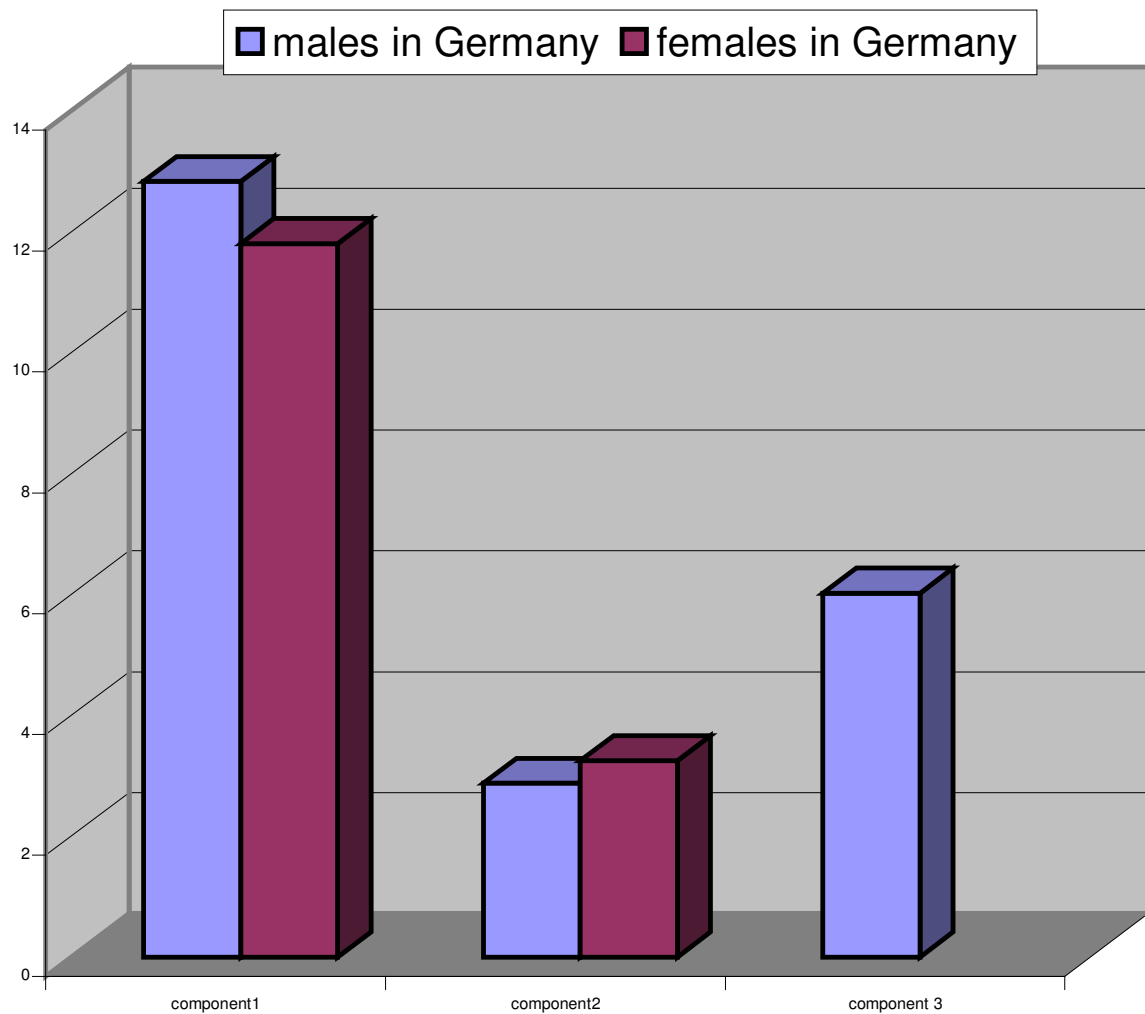


Figure 7-1. the results of 2 principal components analyses are given in obtained from males and females in Germany

To explore more about parapsychic phenomena related to gender in social and cultural context, I analyzed the 3 components with multiple regression between males and females in Iran. Table 18 presents multiple regression results between gender differences in parapsychic beliefs in Iran.

Table 18

Multiple regression results in belief in different parapsychic phenomena between both females ( N = 350 ) and males ( N = 384 ) in Iran( Total N. = 734 )

Variable	bo	B1	2 R	F	Level of significant
C1	- 14. 728	- 1. 1543	. 014	10. 66	. 001***
C2	- 6. 5654	. 4170	. 013	9. 86	. 002*

\*\* = <.01

\*\*\* = <.001

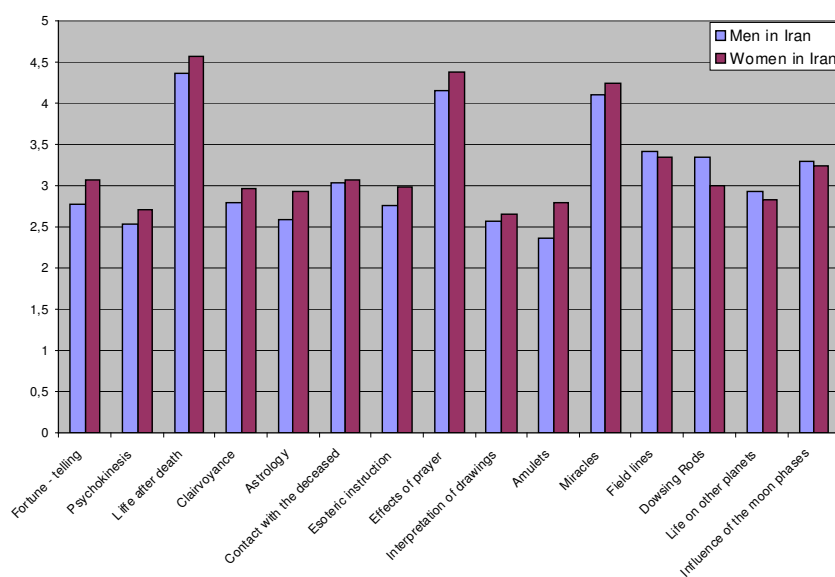


Figure 8: A comparative results in belief in different parapsychic phenomena between males and females in Iran

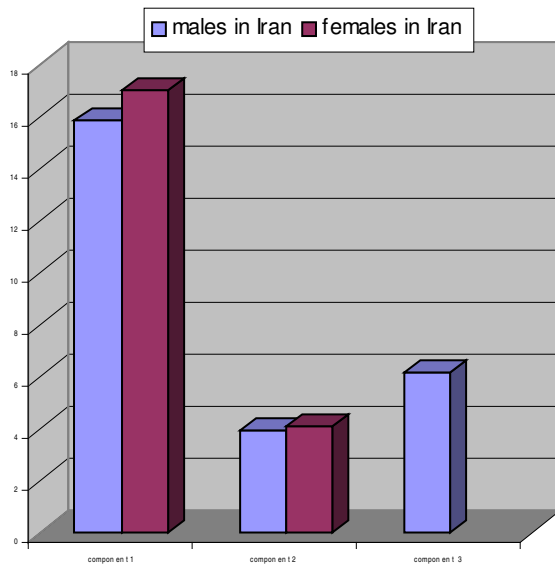


Figure 8-1. A comparative results in 2 principal components between males and females in Iran

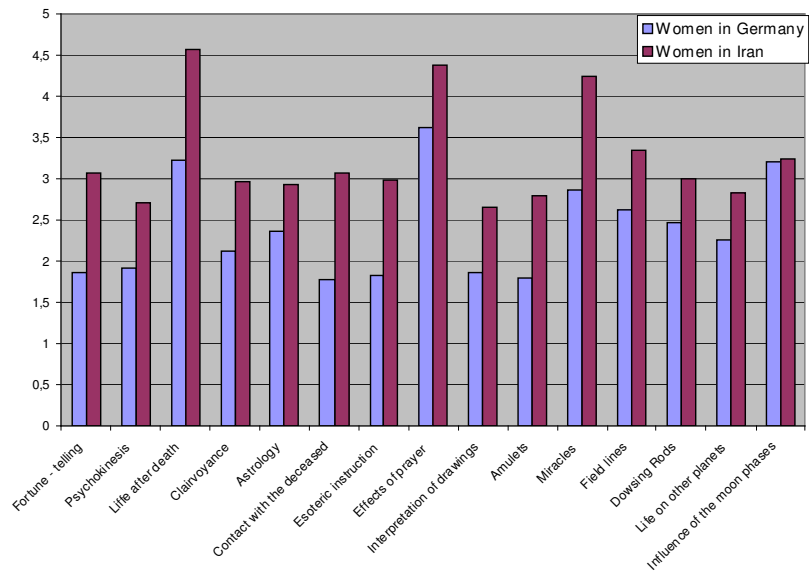
significantly more tendencies towards the following components. First and second components were significant at the  $P < .05$  and  $P < .01$  levels. Then, in an attempt to achieve comparability between the two countries, I performed a multiple regression between males and females in Iran. Analysis revealed ( can be seen in Table 18 ) significant differences between females and males. The female group indicated a significantly higher level on first and third components at the  $P < .001$  and  $P < .01$  levels.

These findings lend support to and help refine my second hypothesis. On the basis of the research reviewed above and theoretical models about the affect of stress in increasing of parapsychic beliefs, I have argued that Iranian females are more superstitious than German females. I analyzed the 2 components as a dependent variable with multiple regression between Iranian females and German females as a independent variables. Results can be seen in Table 19.

Table 19  
Multiple regression results between Iranian females(N =350) and German females(N =195)

Variable	bo	B1	2 R	F	Level of significant
C1	- 11. 810	- 5. 2269	. 205	139. 66	.000***
C2	- 3. 2513	- . 8087	. 046	26. 31	. 000***

\*\*\* =  $P < .001$



In diagrams of Figure 9, a comparative results in belief in different parapsychic phenomena between Iranian females and German females

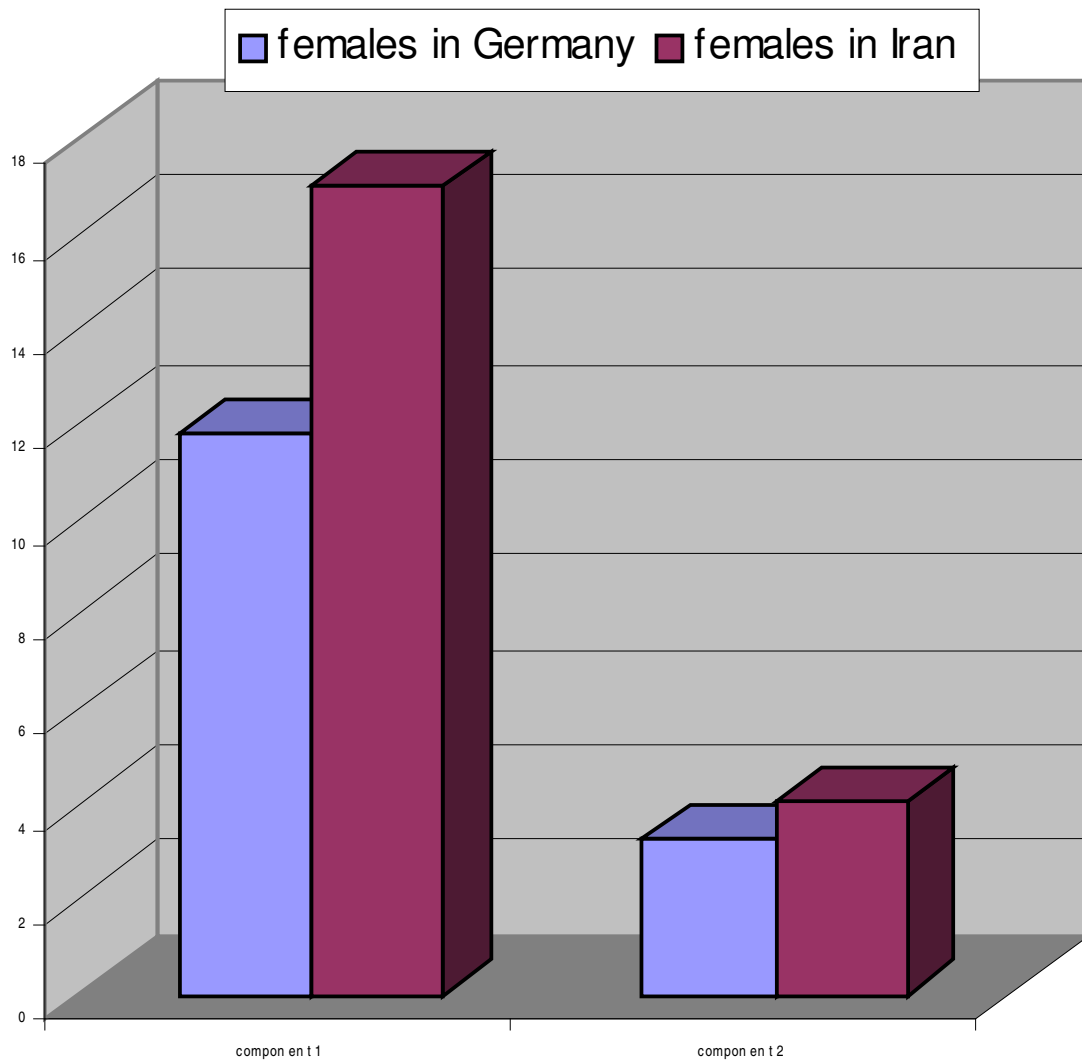


Figure 9-1. A comparative results in 2 principal components between Iranian females and German females

## **HYPOTHESIS 2 : A STATISTICALLY SIGNIFICANT DIFFERENCE BETWEEN IRANIAN FEMALES AND GERMAN FEMALES.**

Support for this hypothesis was derived from a Multiple regression analysis. My confidence in these findings was increased by the significant differences between Iranian females and German females. I computed multiple regression analysis separately for any of the 2 components (see Table 19 ). These analyses revealed that all of the 2 components were significantly higher with the Iranian females.

## **Hypothesis 3: Men’s beliefs remain relatively constant until the old age phase, then their tendency changes towards parapsychic beliefs, but women’s parapsychic beliefs remain relatively constant over different ages.**

Finally, I turn to the relationship between gender and age and to the question of whether there is an age-related continuity in the relation between parapsychic beliefs and gender differences. The first predictor contrasted, to explore age differences in both gender, I performed multiple regression for each phenomenon, to examine whether there was a significant difference between the younger and older beliefs. The differences related to the 3 components which sub – divided into age groups are shown in Table 20. The younger groups were significantly higher only in first component. None of the others were significant.

Table 20  
Multiple regression results between younger(N =701) and older groups in both countries(N =426)

Variable	bo	B1	2 R	F	Level of significant
C1	- 13. 704	- 2. 0929	. 037	43. 64	. 000***
C2	- 3. 6643	. 0115	. 000	. 01	. 917
C3	- 5. 7183	- .2174	. 003	2. 95	. 08

\*\*\* = P < .001

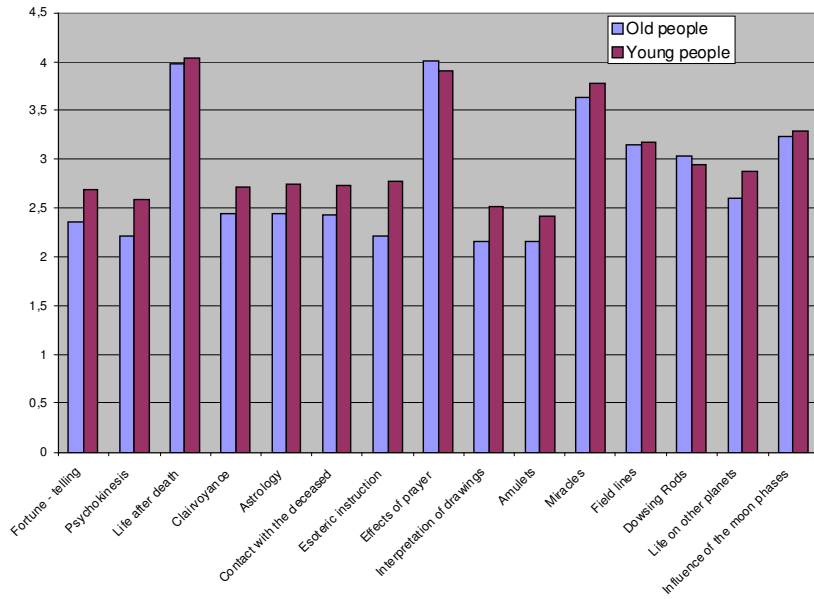


Figure 10: A comparative results in belief in different parapsychic phenomena between younger and older groups in both countries ( Iran and Germany )

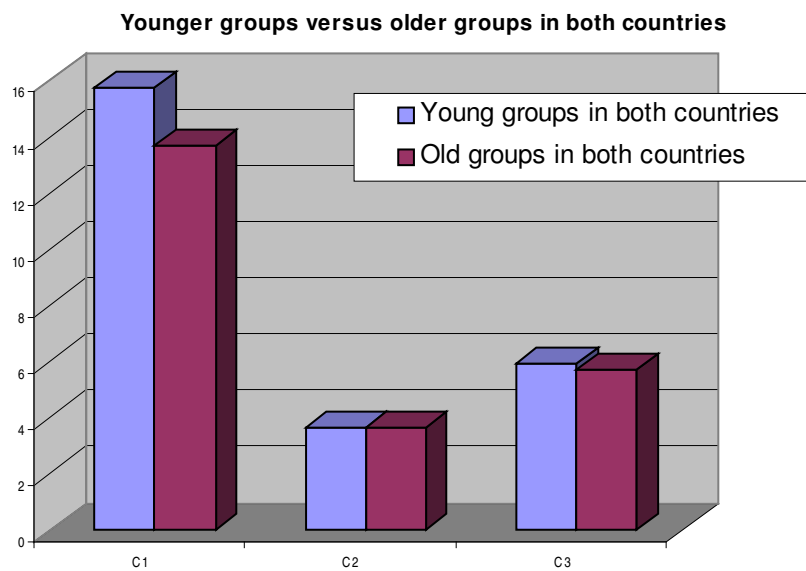


Figure 10-1. A comparative results in 3 principal components between younger and older groups in both countries ( Iran and Germany )

Then, in an attempt to achieve comparability between the two age groups, I performed a multiple regression analysis separately by gender. Thus, I examined whether there was a significant difference between the beliefs young females and older females in different parapsychic phenomena in both countries. The age differences obtained in the 3 components are presented in Table 21.

Table 21  
Multiple regression results between younger and older females in both countries(N =549)

Variable	bo	B1	2 R	F	Level of significant
C1	- 20. 942	4. 3116	. 136	85. 36	. 000***
C2	- 6. 7173	. 8478	. 039	22. 03	. 000***

\*\*\* = P < .001



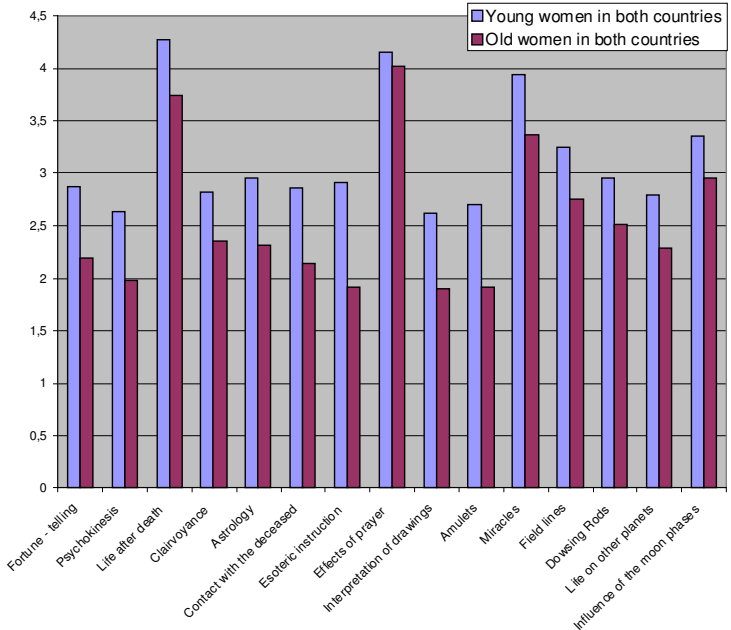


Figure 11: A comparative results in belief in different parapsychic phenomena between younger and older females in both countries (Iran and Germany )

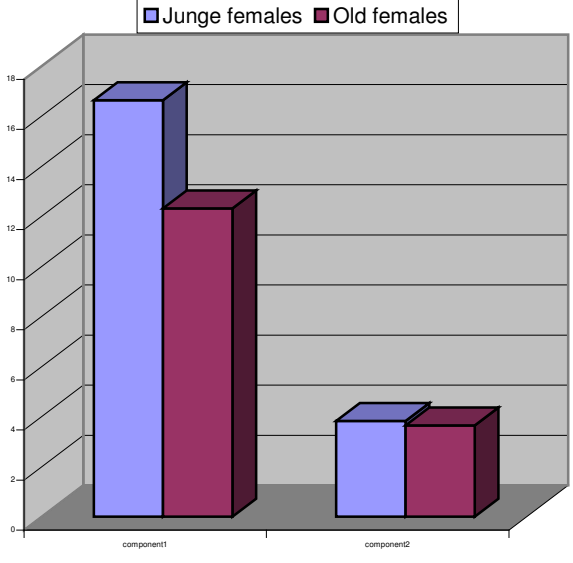


Figure 11-1. A comparative results in 2 principal components between younger and older females in both countries ( Iran and Germany )

Support for my third hypothesis was derived from these analyses. My confidence in these findings was increased by the significant differences between younger groups and older groups. The younger groups were on a significantly higher level with first and third components. And second component was nonsignificant. As I explained, the second component occurred on 3 phenomenon: 1 – Life after death. 2 – Effects of prayer. 3 – Miracles. These phenomenon come to us as part of our religious beliefs.

Furthermore, I examined whether there was a significant difference between the younger males and the older males' beliefs in parapsychic phenomena. Thus, I can compare age and gender differences in parapsychic beliefs. The age and gender differences obtained with the 3 components are presented in Table 21 and 22. Table 22 presents the results obtained during the investigation. Conversely, none of the components was significant.

To explore the pattern of differences between the two cultures, I computed a multiple regression analysis separately between the Iranian and German groups. First, I examined both German gender groups. Table 23 shows that the Multiple regression results between German's young and old females. Significantly analysis revealed that younger females showed a greater tendency towards these 3 components.

In an attempt to achieve comparability between the two genders, I performed a multiple regression to examine whether there was a significant difference between the younger and the older males' beliefs in parapsychic phenomena in Germany. The age differences obtained in the 3 components are presented in Table 24.

Table 22  
Multiple regression results between younger( N =341) and older males(N =237)

Variable	bo	B1	2 R	F	Level of significant
C1	- 15. 062	. 1471	. 000	. 12	. 7225
C2	- 3. 2572	- . 2075	. 003	1. 97	. 161
C3	- 5. 7587	- . 2472	. 004	2. 04	. 154

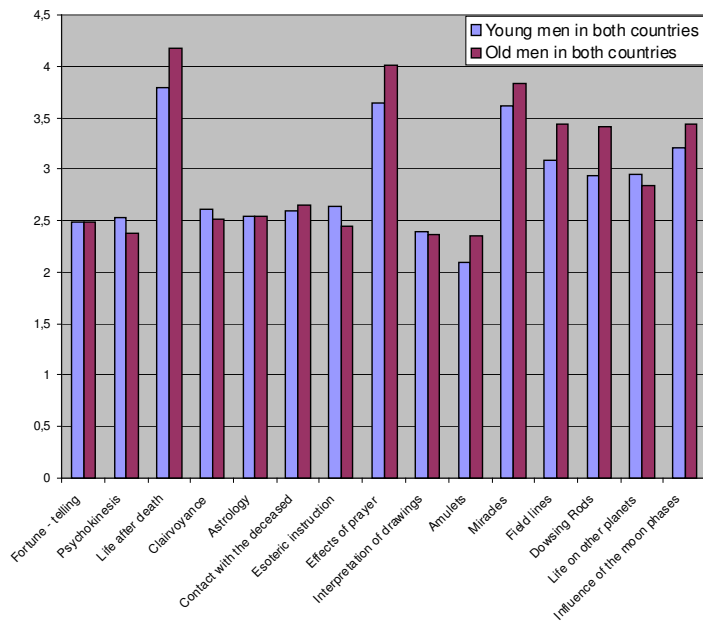


Figure 12: A comparative results in belief in different parapsychic phenomena between young men and old men in both countries ( Iran and Germany )

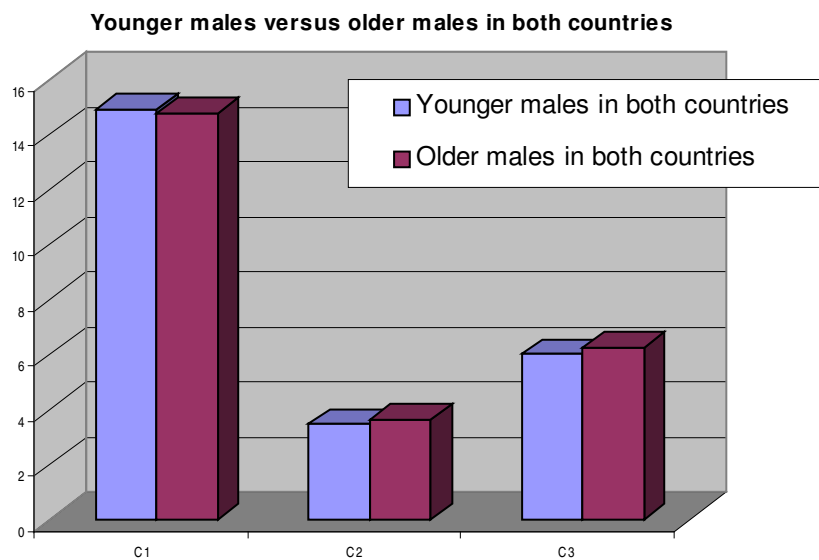


Figure 12-1. A comparative results in 3 principal components between young men and old men in both countries ( Iran and Germany )

Table 23

Multiple regression results between younger(N =95) and older(N =104) females in Germany

Variable	B0	B1	2 R	F	Level of significant
C1	- 17. 618	3. 8389	. 133	29. 55	. 000***
C2	- 1. 6716	-1. 0442	. 063	13. 05	. 000***

\*\*\* = P < .001

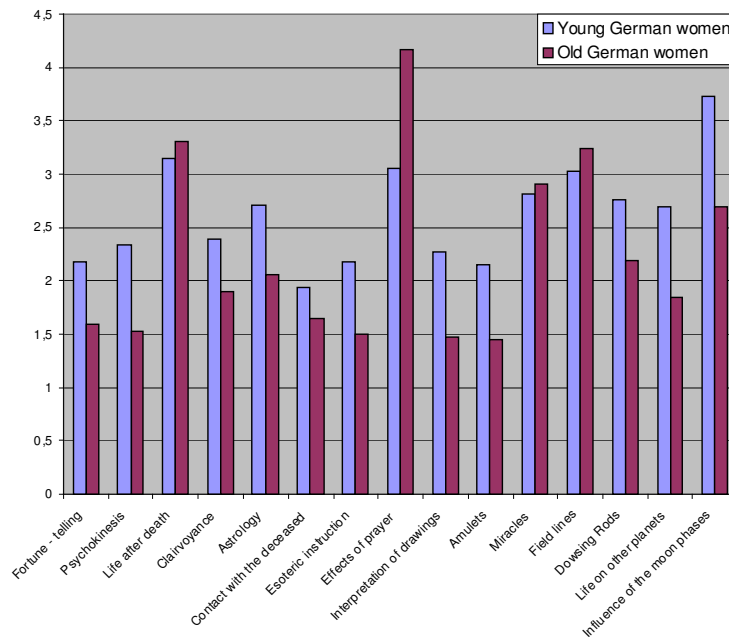


Figure 13: A comparative results in belief in different parapsychic phenomena between younger and older females in Germany

To explore age differences between and within the two countries, I first conducted a multiple regression between young and old females in Germany. The multiple regression results showed that the younger group indicated a higher level in all 3 components ( at the  $P < .001$  ).

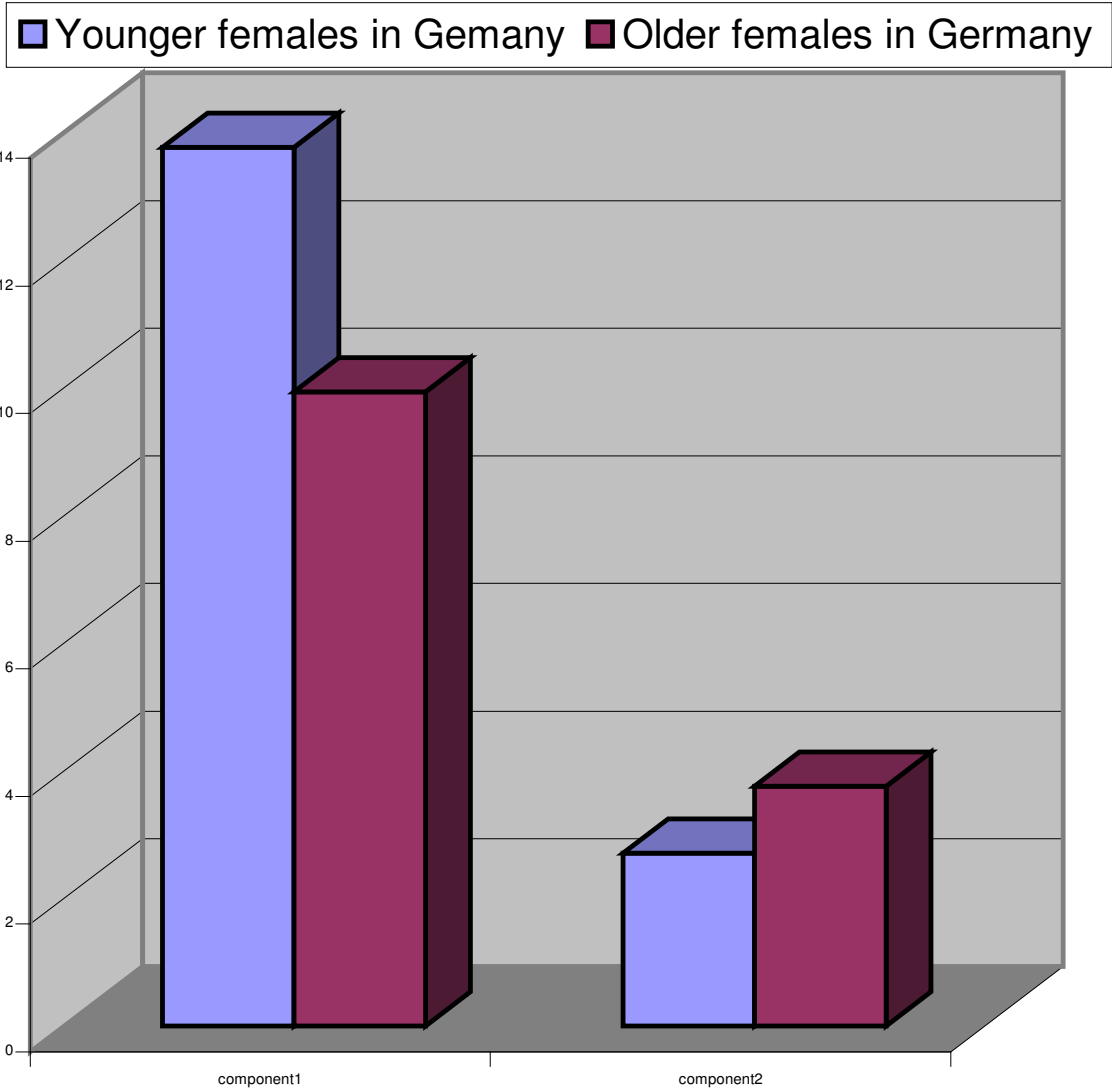


Figure 13-1. A comparative results in 2 principal components between younger and older females in Germany

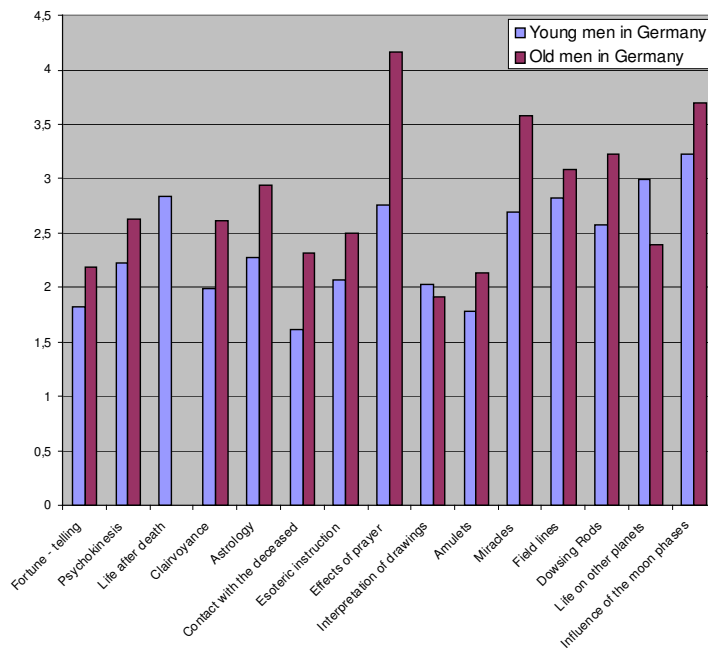
The age differences obtained on the 2 components are presented in figure 13 – 1.

Table 24

Multiple regression results between older (N =44) and younger (N =150) males in Germany

Variable	B0	B1	$R^2$	F	Level of significant
C1	- 9. 5485	- 2. 6528	. 060	12. 53	.001***
C2	- 1.4923	- 1. 1184	. 062	12. 78	.000***
C3	- 5. 7037	- .2627	. 002	. 44	. 509

\*\*\* = P < .001



In diagrams of Figure 14 , shows the results of the analyses obtained from younger and older males in Germany

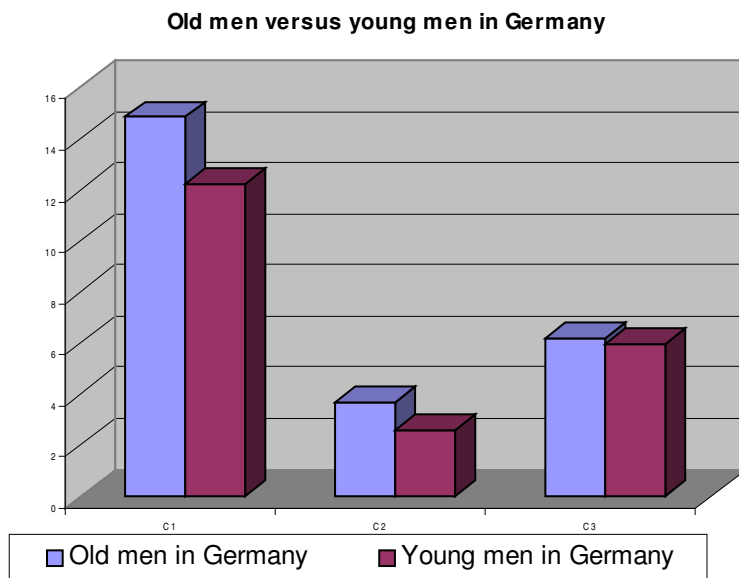


Figure 14-1. shows the results of 3 principal components analyses obtained from younger and older males in Germany

To showed gender differences in Germany, I also conducted a multiple regression between young and old males. Table 24 and Figure 13 present the results obtained during the investigation. Results findings with Iranian groups. My data present about the same picture. For each phenomenon indicated that the older group showed a higher level in: First and second components ( at the  $P < .001$  level ). But the third component was nonsignificant. It is important to compare these findings with Iranian groups, I performed a multiple regression to examine whether there was a significant difference between the Iranian younger and older females. Table 25 presents the results obtained during the investigation.

I computed a multiple regression analysis separately for each of the 2 components (see Table 25 ).

To explore the gender differences in social context, I also examined whether there was a significant difference between the younger males and the older males' beliefs. The age differences obtained in the 3 components are presented in Table 26.

Table 25

Multiple regression results between younger(N =265) and older( N =85) females in Iran

Variable	B0	B1	2 R	F	Level of significant
C1	- 20. 942	4. 3116	. 136	85. 36	. 000***
C2	- 6. 7173	. 8478	. 039	22. 03	. 000***

\*\*\* = P < .001

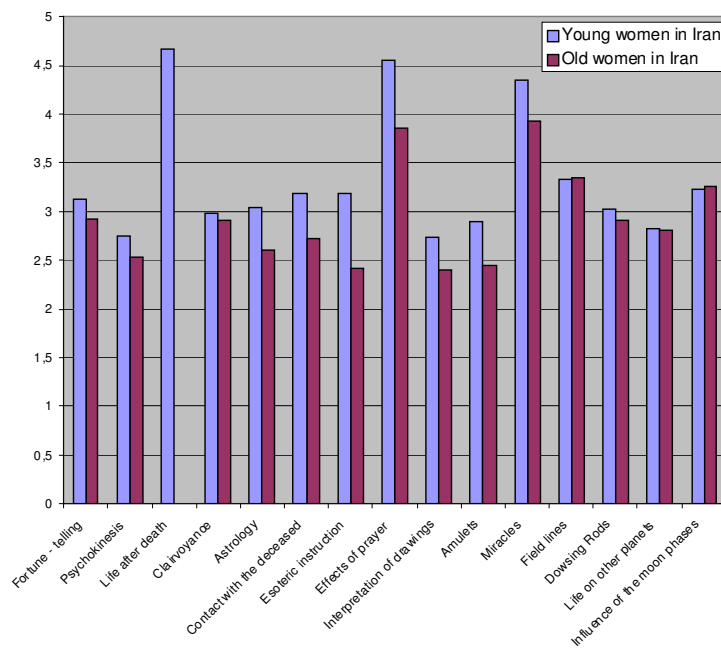


Figure 15: A comparative results in belief in different parapsychic phenomena between younger and older females in Iran



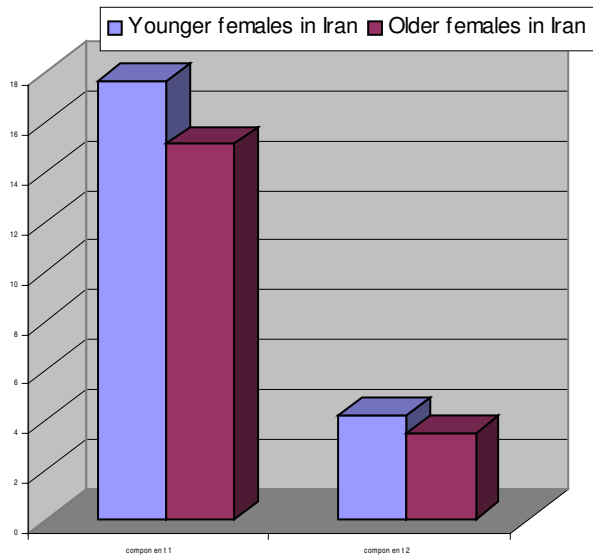


Figure 15 – 1: A comparative results in belief in different parapsychic phenomena between younger and older males and females in Iran

Table 26

Multiple regression results between younger(N =191) and older(N =193) males in Iran

Variable	B0	B1	2 R	F	Level of significant
C1	- 15. 062	. 1471	.000	. 12	. 725
C2	- 3. 2572	- .2075	.003	1. 97	. 161
C3	- 5. 7587	- .2472	.004	2. 04	. 154

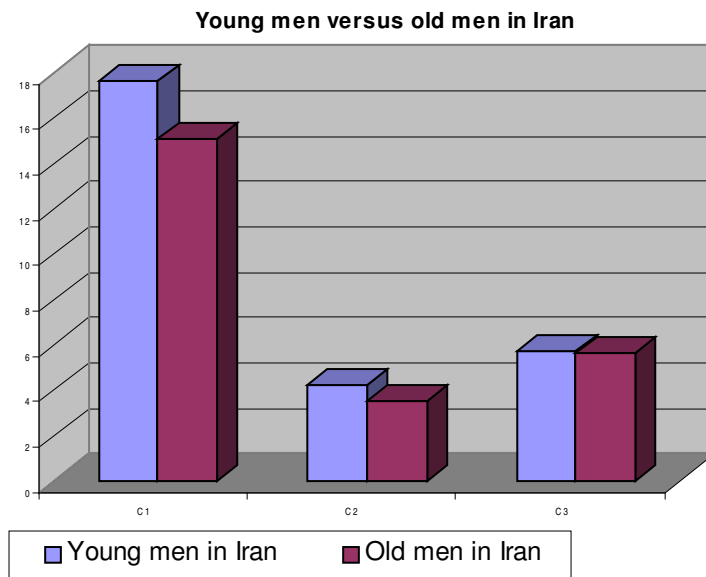


Figure 16. A comparative results in 3 principal components between younger and older males in Iran

Finally, I turn to the differences between old men and old women and to the question of whether there is an age-related continuity in the differences between parapsychic beliefs and gender in old age. I analyzed the 3 components with multiple regression(see Table 27 ).

Table 27

Multiple regression results between old males(N =581) and females(N =545)

Variable	B0	B1	2 R	F	Level of significant
C1	- 17. 216	2. 4487	.055	24.70	. 000***
C2	- 7. 4846	1. 2315	.086	40. 07	. 000***

\*\*\* = P < .001

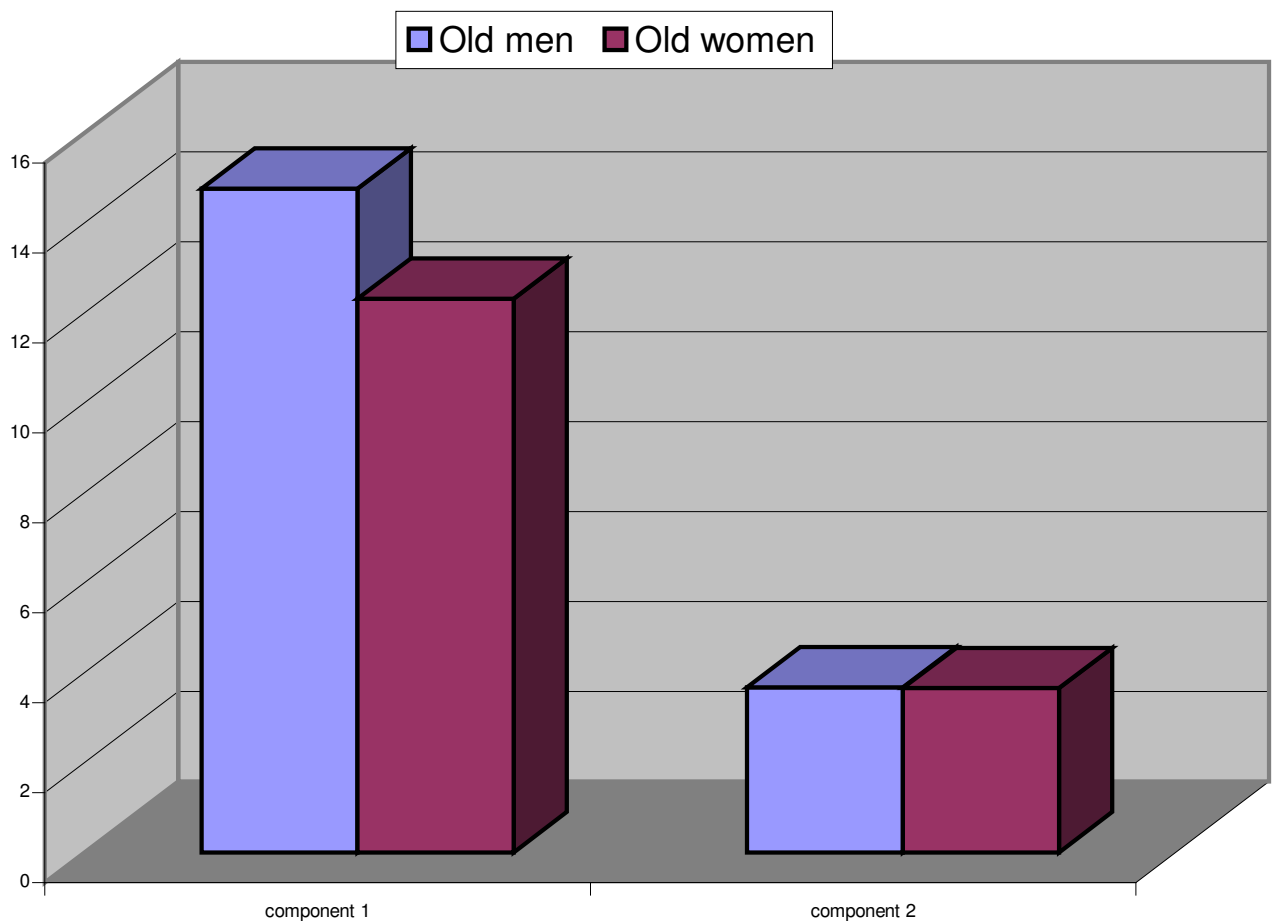


Figure 17. A comparative results in 2 principal components between old males and old females

For each phenomenon, I performed a multiple regression to examine whether there was a significant difference between the old men's beliefs and the old women's beliefs. Gender differences obtained in the 2 components are presented in Table 27. Gender differences during the old age phase were analyzed by multiple regression. Analyses revealed that older men had more of a tendency towards the first and second components at the level  $P < .001$ .

To obtain more detail, I needed to assess the groups separately: First, German old males and females. Second, Iranian old males and females. These two analyses were designed to explore the social and cultural influences on the beliefs in parapsychic phenomena during old age. Thus, for each component, I performed a multiple regression to examine whether there was a significant difference between the old men and old women in Germany. Gender differences obtained in the 2 components are presented in Table 28.

Multiple regression analyses revealed that older men had more of a tendency towards the first component:

Second, in an attempt to achieve comparability between the two countries ( Iran and Germany ) I performed a multiple regression to examine whether there was a significant difference between the older females and the older males' beliefs in Iran. The gender differences in cultural context obtained in the 2 components are presented in Table 29.

Table 28  
Multiple regression results between old males(N =44) and old females(N =104) in Germany

Variable	B0	B1	2 R	F	Level of significant
C1	- 13. 885	1. 0375	. 011	4.27	. 04*
C2	- 2. 5152	- . 3680	.008	3.28	. 071

\* =  $P < .05$

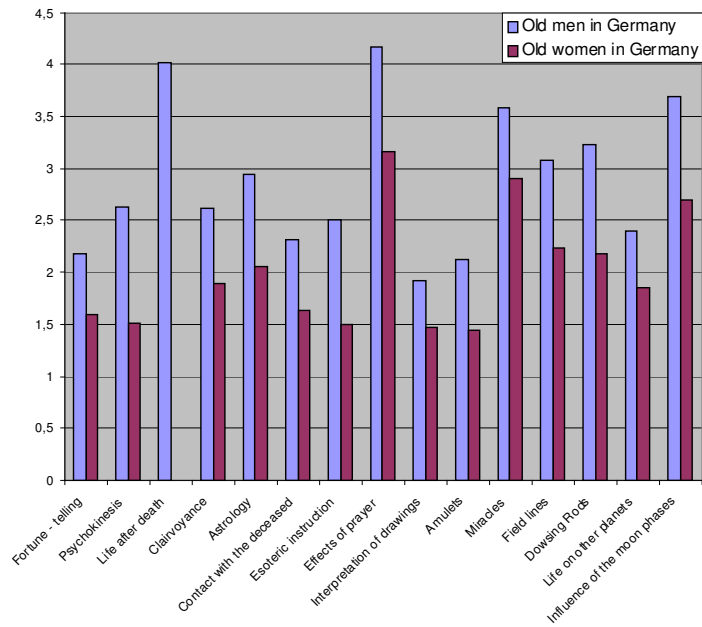


Figure 18: A comparative results in belief in different parapsychic phenomena between old males and old females in Germany

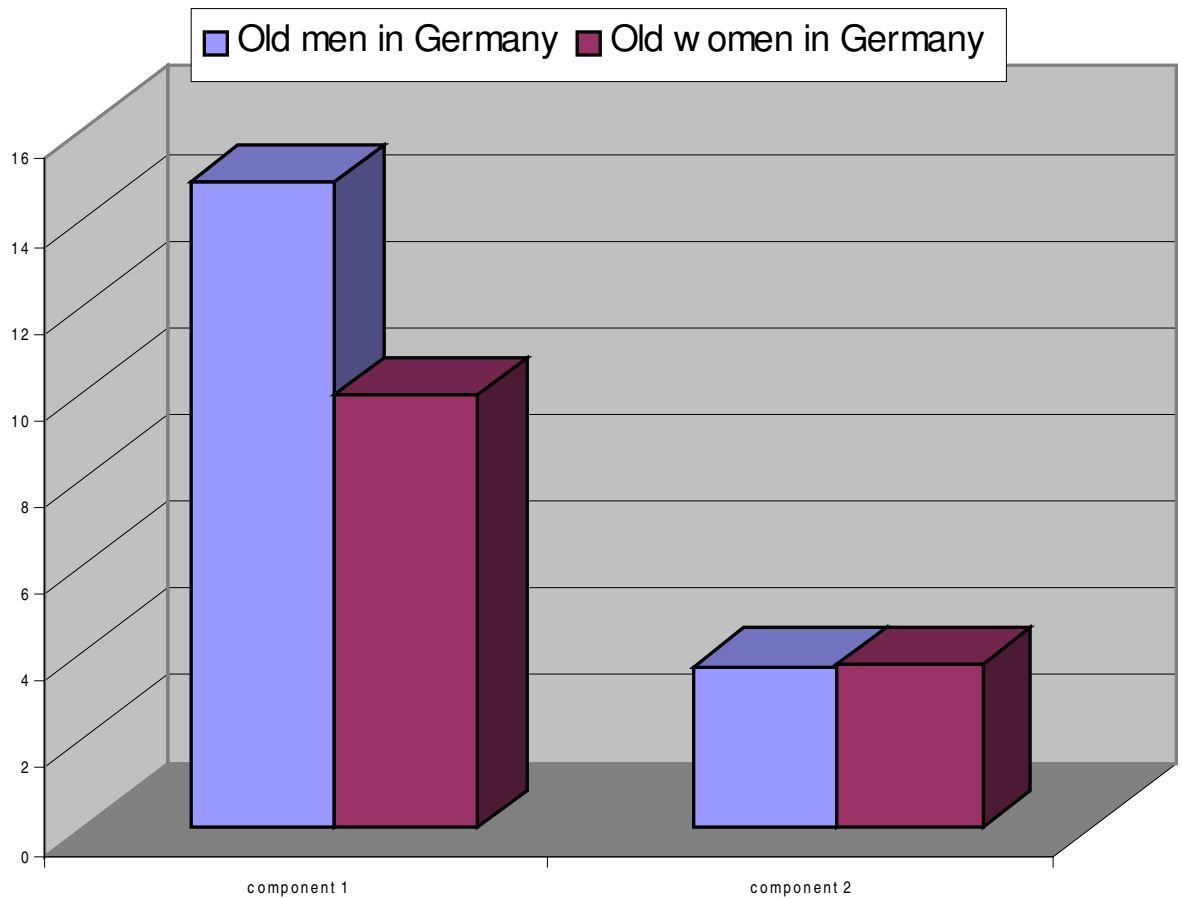


Figure 18-1. A comparative results in 2 principal components between old males and old females in Germany

Table 29  
Multiple regression results between old males(N =193) and old females(N =85) in Iran

Variable	B0	B1	2 R	F	Level of significant
C1	- 19. 768	4. 9142	. 170	29. 97	. 000***
C2	- 7. 9483	1. 7192	. 113	18. 67	. 000***

\*\*\* = P < .001

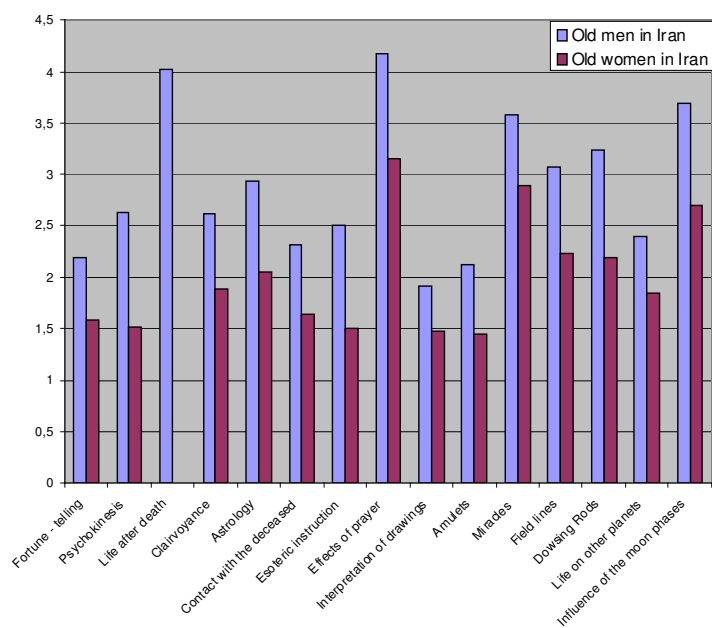


Figure 19, shows the results of the analyses obtained from: old males and old females in Iran

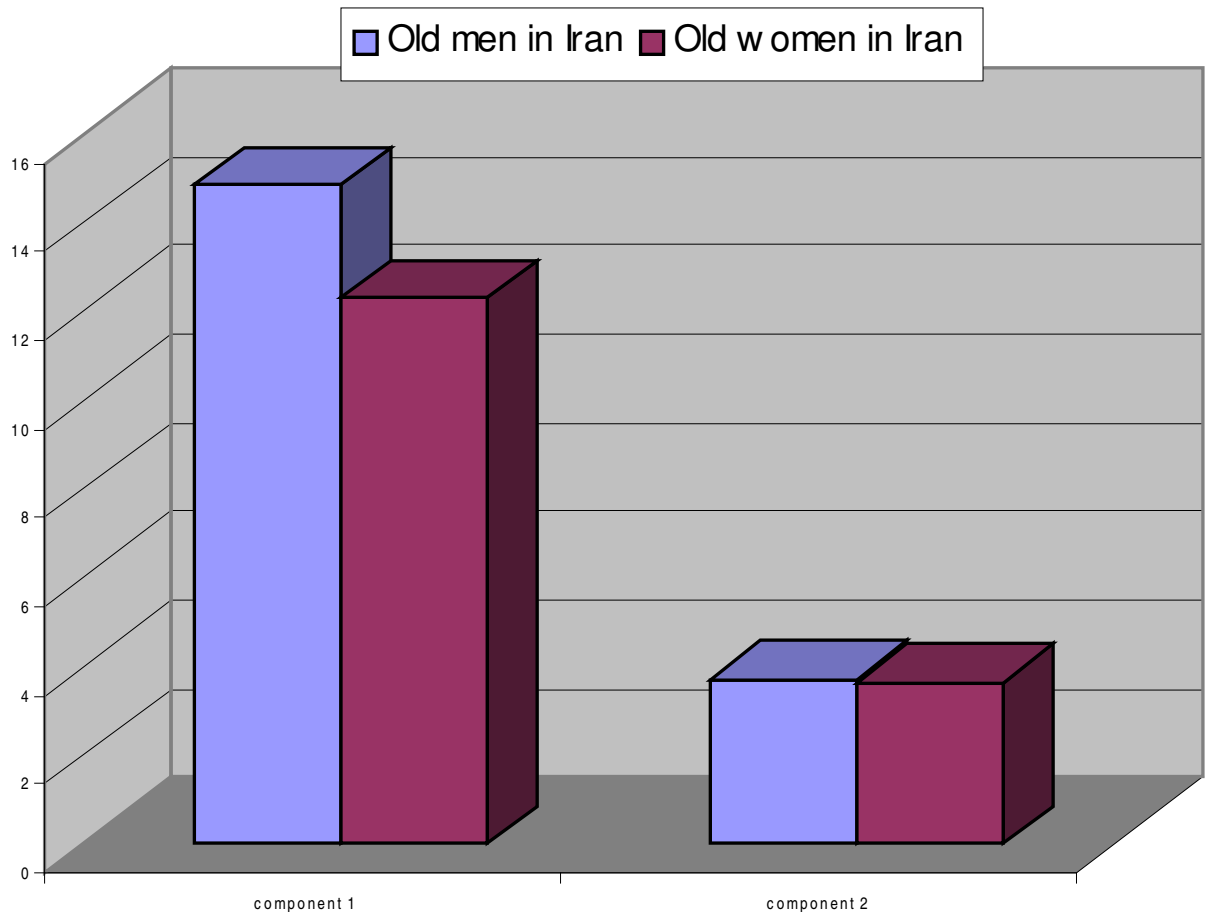


Figure 19-1. shows the results of 2 principal components analyses obtained from old males and old females in Iran

Although these results may seem surprising, in the light of the analyses reported above, they are explore the impact of social and cultural differences between two countries. The results of these analyses were comparable to those based on the second hypothesis multiple regression analyses revealed that females had more of a tendency towards first and third components.



## Discussion

It seems reasonable to consider that, we are the products of both our biologies and our past and present environments, simultaneously and inseparably. Before attempting to determine gender and age differences in parapsychic phenomena, I defined these phenomena as our cognitive ability to understand reality in an unusual way. And conceiving of the brain as the capacity's model that include, at one end, rational thinking and, at the other end, irrational beliefs. From a component analysis of questionnaire, I have found two personality dimensions from the total sample (see Table 4). A sense of control versus sense of uncontrollability over one's environment. We humans construct highly redundant sociocultural environments, probably in order to make the world even more predictable and less threatening. Our social structures and habitats are certainly highly predictable given that one has grown up within a particular culture and has experienced the natural groupings, values, and norms that make the community function smoothly. A direct – perception position is to argue that certain phenomena as they naturally occur under ecologically conditions require that the perceiver go beyond the information given. That should exist information in the unfolding of social events to reveal underlying reason.

As I explained, Epstein, Lipson, Holstein, and Huh, (1992) have found a relationship between parapsychic beliefs and some personality dimensions such as low self – esteem and low ego strength. Component analysis of the eighteen different parapsychic phenomena revealed some more detail about personality dimensions. Analysis of gender differences indicated that males showed a higher level of sense of control than females ( see Table 6 and 7 ). Tobacyk, and Shrader, (1991) have found that greater belief in paranormal thinking were related to lower self – efficiency; however, the relationship held only for women, not for men.

From experimental and theoretical studies it has become evident that some part of the brain has been adjusted for the performing of a special function. It is of interest in this study to understand about the information – processing differences between the two hemispheres. So I formulated my first hypothesis by investigating the most obvious behavioural asymmetry, left and right handedness. Hypothesis 1: The right hemisphere plays a dominant role in the production and perception of parapsychic beliefs. The results favor the hypothesis in all 3 components(see Table 13 ). First and second components were significant at the  $P < .01$  level, and the third component was significant at the  $P < .05$  level.

The evidence reviewed here suggests that left – handed individuals have more of a tendency to these 3 components and confirmed the first hypothesis just around these 3 components. The present study was the first to investigate gender and age differences in parapsychic beliefs and also dimensions of individual differences in hemispheric asymmetry. Therefore, despite a lack of comparability with previous research, the link between left – handedness and the right – cerebral control of some different behavior has often been a dominant role in the production and perception of emotion (Bowers, Bauer, Coslett, Heilman, 1985; Davidson, Wheeler, and Doss, 1992 ).

About information processing differences between the two hemispheres (Hellige, 1990). Furthermore, studies of gender differences between the left and right hemisphere, show that females have less lateralized brains than males, because knowing whether the lesion is on the right or left provides more predictive power about the nature and extent of neuropsychological defeat in males than in female patients ( Levy, & Heller, 1992 ). In order to determine whether laterality is related to gender differences in parapsychic beliefs, I analyzed the all components with a multiple regression between male and female groups separately ( Table 14 and 15 present the results obtained during the investigation ).

Results showed that some parapsychic beliefs along with subject's gender have been shown to differ. The present results may be related to the idea that information processing differences between two hemispheres differ between males and females. Cultural variation between and within gender differences in a variety of social psychological phenomena have been documented by many researchers (Smith, & Bond, 1994; Williams, & Best, 1990 ). There seems to be considerable cultural variation not only between the two gender but also within each gender.

Although, all human behavior must have a physiological or neurological basis, but social and culture affects brain physiology and functioning. Culture is an emergent property of individuals and groups interacting with their natural and human environment and also provides meaning and direction to its members. Differences in cultures exist because we have focused on and developed different aspects of our environment and attached different meanings and values to them. Learning about cultures is of great benefit to the learner if for no other reason that such knowledge may prepare the individual for more effective intercultural interaction. We have used it to understand, explain, and predict cultural similarities and differences across a wide variety of human behavior. In cultural differences between Iran and Germany, generally, we can identified two different definition: In Iranian groups values more emphasize to tradition and conformity. They are tend to be more sensitive to social rejection, lower in uniqueness, and higher in affiliation. In view of principal components analysis, they tend to change more themselves to fit in rather than try to change environment. Conversely, German groups are more self – direction and they try to change the environment rather than themselves (see Table 9 and 10 ).

For example, the second hypothesis of this study was to examine whether the Iranian females were more superstitious than the German females. First, to clarify cultural differences, I analyzed both genders between the two countries. Table 16 presents the results obtained during the investigation. The Iranian sample groups indicated a significantly higher level of belief in parapsychic phenomena. And supports the idea that gender differences may be culturally bound. In speculating on these matters, as I noted, Keinan, (1994) reported that superstition and magical thinking emerged more frequently in people living in highly stressful conditions than in those under low – stress conditions. On the other hand, it may also be important to emphasize that some items in the questionnaire study stem from religious beliefs. And it seems also reasonable to argue that Iranian groups are more religious than German groups. Can be seen in figure 1.

Among the different parapsychic phenomena, life after death, effects of prayer and miracles which stem from religious beliefs were obviously higher in the Iranian sample. We can also see in figure 6-1. The second component occurred on these 3 phenomena.

In order to clarify the social and cultural context between males and females in both countries, first, I analyzed the 3 components between the two gender in Germany. The results showed here suggest that females have a significantly higher tendency than males in first and third components ( see Table 17 ). However, a second analysis revealed also significant differences between females and males in Iran. The female group indicated a higher level in all of the 3 components. The multiple regression results in first and second components were significant at the  $P < .001$ . Third component was significant at the  $P < .05$  level. These findings lend support to the belief that in any culture, females experience more stressful social events than males. In German groups, females because of their some different physiological function, they are less interest to work at industry than males. Conversely, Iranian females, because of their conflict between conformity with social tradition and social reality.

In speculating the developed countries, for example, the U. S. A. in a 1990 Gallup poll, 43% of the male respondents and 54% of the female respondents indicated that they preferred a man as a boss, where's only 12% of the women and 15% of the men indicated that they preferred a woman as a boss. The Equal Employment Opportunity Commission (EEOC, 1993) indicate that women are still facing difficulties on the job. The impact of differences can be found in a differential of salary levels. On the basis of the research reviewed above and the theoretical models about the affect of stress on the increasing of parapsychic beliefs, Analysis of the present study revealed that Iranian females were significantly more superstitious than German females.

Hypothesis 3: Men's beliefs should remain relatively constant until the old age phase, then their tendency changes towards parapsychic beliefs, but women's parapsychic beliefs should remain relatively constant over different ages. In this study, I chose to test the third hypothesis using the cross – sectional method. The key feature of this approach is that we used the younger group's current standing as a representation of what the older group was like at a younger age, and simultaneously with gender differences. To find support for this hypothesis, I need to clarify the relationship between and within gender differences and to the question of whether there is an age – related continuity in the relationship between parapsychic beliefs and gender differences.

First, to examine whether there was a significant difference between the younger and older beliefs. In the direction of hypothesis, analysis showed that the younger groups indicated a significantly higher level only in first component. None of the others were significant. (can be seen in Table 20). People may want to believe that they become better adjusted with age and thus construct a past that allows them to see an improvement in themselves. Then, to clarify within gender, I analyzed the younger and older females' beliefs (see Table 21). Analysis revealed that younger groups indicated a significantly higher level in first and third components. On the other hand, support for this hypothesis

was derived from findings that only older males' groups showed a significantly higher level in first and third components. And second component was nonsignificant. As I explained, the second component occurred on 3 phenomena: 1 – Life after death. 2 – Effects of prayer. 3- Miracles. These phenomena come to us as part of our religious beliefs. The second component, in most analysis revealed nonsignificant. These findings lend support to and help refine the differences between second component and other parapsychic phenomena in both first and third components.

To revealed social and cultural context, shows Table 24 that younger German females showed a significantly higher level in all 3 components ( at the  $P < .001$  ). Between younger and older males in Germany (see Table 24 ). Analysis revealed that older males indicated significantly higher level in the first and second components ( at the  $P < .001$  ). In contrast, Table 25 shows that younger Iranian females indicated a significantly higher level in the first and third components. In contrast, second component which stem from religius beliefs was nonsignificant. And between younger and older males in Iran (can be seen in Table 27), the younger group showed a significantly higher level in the first and third components.

Finally, to explore the social and cultural influences on beliefs in parapsychic phenomena during old age. According to the analysis derived by comparing old men and old women in both countries, support for the third hypothesis was derived from findings that the old man showed a significantly higher level on first and third components. To obtain more detail, I analyzed the both groups separately: The first analysis showed that older German males revealed a significantly higher level than in older German females only on first component (see Table 28 ). In contrast to the first analysis, the second analysis revealed that older Iranian females showed a significantly higher level than older Iranian males on first and third components. It is of considerable interest, although the results of this analysis did not support my hypothesis, but these differences that I found were consistent with those that were predicted by both evolutionary theory and the sociocultural perspective. It will be helpful here to emphasis one of the considerable differences between the two cultures. Iranian people have more respect from society when they getting old. Gender also shapes the pattern of age differences found in these results. Perhaps, the older women got, the less respect, and older men got more.

## **Conclusions, Implications, and Limitations**

To summarize, the findings of this study have implications for several issues of interest with respect to research in stress, coping, laterality and ageing. Some important findings emerge from the findings of this study. Firstly, the results of hemispheric asymmetry and also to see the impact of gender differences lend support to and help refine the theoretical model. Secondly, the comparison of both the gender and age differences between two culturally different countries ( Iran and Germany). Thirdly, the investigation of the relationship between ageing, gender and sociocultural factors.

## Limitations

Two limitations in this research should be noted: It is important to discuss two aspects of my research that may limit the generality of the results. There are at least two methodological concerns in the present study. First, the scales constructed for use in the right – handed as a left – cerebral hemisphere dominance, have not been thoroughly validated. Although, I have introduced it as a valid hand preference questionnaire, the fact that we must not forget is that, not all humans are right – handed is represented predominantly in the left – cerebral hemisphere. We must therefore be careful to avoid the implication that the 12% or so who are left – handed, have a somewhat smaller minority with bilateral or right – cerebral ( Corballis, 1989). Unfortunately, it remains impossible to distinguish accurately either a right or left cerebral dominance. It would be useful to replicate my findings using a PET scan. With this technology it is possible to identify with some element of precision where in the brain different cognitive processes occur. It was however too expensive for my research budget.

The second limitation of this and similar studies in behavioral sciences involves the nature of the social and cultural context differences between two countries (Iran and Germany). I sampled older participants in Germany not only from old people's home, like the older participants in Iran, but also at a local recreation center for senior citizens, and senior groups in church. This would probably have biased the results in comparison with the older Iranian participants. I had two restriction in my sampling: First, it was impossible to get permission from all of the old people's homes, where selected at random in Hannover / Germany. Second in Iran, are not any special senior groups centers like there are in Germany.

## References

Annett, M. (1967). The binomial distribution of right, mixed, and left handedness. *Journal of experimental psychology*. Vol. 19, pp. 327 – 333.

Bianki, V. (1988). *The right and left hemispheres of the animal brain. Cerebral lateralization of function*. London, Gordon and Breach science publishers.

Bowers, D. , Bauer, R. M. , Coslett, H. B. , Heilman, K. M. (1985). Processing of face by patients with unilateral hemisphere lesions. Dissociations between judgements of facial affect and facial identity. *Brain, Cognitive*. Vol. 4, pp. 258 – 272.

Britannica (1993). *The new encyclopedia britannica*, Vol. 9, Encyclopedia Britannica, Inc. 15 th edition.

Cavanaugh, J. C. (1993). *Adult development and aging*. California, Brooks & Cole Publishing Company.

Cavanaugh, J. C. & Whitbourne, S. K. (1999). *Gerontology: An interdisciplinary perspective*. New York, NY: Oxford university press.

Clark, D. (1991). Belief in the paranormal: A New Zealand survey. *Journal of the society for psychical research*. Vol. 57, pp. 412 – 425.

Corballis, M. C. (1989). Laterality and human evolution. *Psychological review*. Vol, 96. No. 3, pp. 492 – 505.

Davidson, R. J. , Wheeler, R. E. & Doss, R. C. (1992). Individual differences in anterior brain asymmetry and fundamental dimensions of emotion. *Journal of personality and social psychology*. Vol. 62, No. 4, pp. 676 – 687.

Dohrenwend, B. P. (1998). *Adversity, stress, and psychopathology*. London, Oxford university press.

D S M – IV (1994). *The fourth edition of the diagnostic and statistical of manual of mental disorders*. American Psychiatric Association.

Eccles, J. C. (2000). *Das Gehirn des Menschen: das Abenteuer der modernen Hirnforschung*. München, Piper Verlag.

EEOC (1993). Equal employment opportunity commission. Fiscal year 1989 annual report; Washington, DC: U. S. Government printing office.

Ehrenwald, J. (1984). Right versus left hemispheric approach in psychical research. *Journal of the American Society for Psychical Research*. Vol. 78, pp. 29 – 40.

Corballis, M. C. (1989). Laterality and human evolution. *Psychological Review*. Vol. 96, No. 3, pp. 492 – 505.

Elias, E. & Elias, J. (1990). *The development of spatial cognition*. Lawrence Erlbaum Associates, Inc.

Epstein, S., Lipson, A., Holstein, C. & Huh, E. (1992). Irrational reactions to negative outcomes: Evidence for two conceptual systems. *Journal of Personality and Social Psychology*. Vol. 62, No. 2, pp. 328 – 339.

Epstein, S. (1994). Integration of the cognitive and the psychodynamic unconscious. *American Psychologist*. Vol. 49, No. 8, pp. 709 – 724.

Euler, H. A. & Adolph, H. (1993). *Zur Struktur der psychologischen Geschlechtsunterschiede*. Gesamthochschule Kassel in press.

Gallup, G. (1990). *The Gallup poll: public opinion 1990*. Wilmington, DE: Scholarly resources.

Geißler, P. & Rückert, K. (2000). *Mediation die neue Streitkultur, Kooperatives Konfliktmanagement in der Praxis*. Gießen: Psychosozial – Verlag.

Haraldson, E. (1985). Representative national surveys of psychic phenomena. Iceland, Great Britain, Sweden, U. S. A. and Gallup's multinational survey. *Journal of Society for Psychical Research*. Vol. 53, pp. 145 – 158.

Halpern, D. F. (1992). *Sex differences in cognitive abilities*. Lawrence Erlbaum Associates, Publishers.

Hellige, J. B. (1990). Hemispheric asymmetry. *Annual reviews of psychology*. Vol. 41, pp. 55 – 80.

Howard, G. S. (1992). Cultural tales: A narrative approach to thinking, *Cross – cultural psychologist*. Vol. 46, No. 3, pp. 187 – 197.

Keinan, G. (1994). Effects of stress and tolerance of ambiguity on magical thinking. *Journal of personality and social psychology*. Vol. 67, No. 1, pp. 48 – 55.

Keith, J. (1990). Age in social and cultural context: Anthropological perspectives, in. R. H. Binstock & L. K. George (Eds.). *Handbook of ageing and the social sciences* (3 rd. pp. 91 – 111). San Diego, Academic Press.

Levy, J. & Heller, W. (1992). Gender differences in human neuropsychological function. In Gerall, AA; Moltz, H. & Ward, II. (1992). *Handbook of behavioral neurobiology: Sexual differentiation*. New York: Plenum. pp. 245 – 273.

Lillqvist, O. & Lindeman, M. (1998). Belief in astrology as a strategy for self – verification and coping with negative life – events. *European psychologist*. Vol. 3, pp. 202 – 208. Hogrefe & Huber publishers.

MC Farland, C. , Ross, M. & Giltrow, M. (1992). Biased recollections in older adults: The Role of implicit theories of ageing. *Journal of personality and social psychology*. Vol. 62, No. 5, pp. 837 – 850.

Messer, W. S. & Griggs, R. A. (1989). Student belief and involvement in the paranormal and performance in the introductory psychology. *Teachings of psychology*. Vol. 16, pp. 187 – 191.

Morgan, L. & Kunkel, S. (1998). *Ageing: The social context*. Pine Forge press.

Salthouse, T. A. (1991). *Theoretical perspectives, cognitive aging*. Hillsdale, NJ: Erlbaum.



Smith, P. B. , & Bond, M. H. (1994). *Social psychology across cultures: Analysis and perspectives*. Boston: Allyn & Bacon.

Sterns, H. L. & Miklos, S. M. (1995). The aging worker in a changing environment: Organizational and individual issues. *Journal of vocational behavior*. Vol. 47, pp. 248 – 268.

Tapley, S. M. & Bryden, M. P. (1985). A group test for the assessment of performance between the hands. *Neuropsychologia* Vol. 23, No. 2, pp. 215 – 221. Printed in Great Britain.

Taylor, S. E. (1983). Adjustment to threatening events: A theory of cognitive adaptation. *American psychologist*. Vol.38, pp. 1161 – 1173.

Tobacyk, J. , & Shrader, D. (1991). Superstition and self – efficacy. *Psychological Reports*. Vol. 68, pp. 1387 – 1388.

Vyse, S. A. (1997). *Believing in magic: The psychology of superstition*. Oxford university press, Inc.

Withbourne, S. K. (1987). Personality development in adulthood and old age : Relationships among identity style, health and well being. In: Schaie, K. W. (Ed.): *Annual review of gerontology and geriatrics*. Vol. 7, pp. 187 – 216. New York: Springer.

Williams, J. E. & Best, D. L. (1990). *Sex and psyche: Gender and self viewed cross – culturally*. Newbury park, CA: Sage.

Zeier, H. (1997). *Biofeedback. Physiologische Grundlagen Anwendungen in der Psychotherapie*. Huber.

## بسمه تعالی

خواهران و برادران گرامی؛

محترماً" بعرض می رساندکه پرسشنامه مزبور جهت تحقیق علمی در بخش روانشناسی دانشگاه کاسل آلمان تنظیم گردیده است. پرسشنامه ها بدون ذکر نام و کاملاً" محفوظ مورد بررسی و تحلیل آماری قرار خواهند گرفت و بدیهی است آزمودنی ها در شرکت و یا عدم شرکت در تحقیق کاملاً" آزاد می باشد. از همکاری شما صمیمانه سپاسگزاری می شود.

جنسیت: مرد  زن 

سن:

شاخص چپ دستی یا راست دستی	معمولاً" دست چپ	همیشه دست چپ	بدون ترجیح	معمولاً" دست راست	همیشه دست راست
نوشتن نامه ای خوش و خوانا					
پرتاب توپ برای زدن هدفی					
بازی که با راکت انجام گیرد					
برای جارو کردن با جارو دستی					
استفاده از بیل برای جابجا کردن خاک					
کبریتی را روشن کردن					
استفاده از قیچی برای بریدن کاغذ					
برای نخ کردن سوزنی					
برای تقسیم و پخش مجموعه ای کارت					
کوبیدن میخ در چوب					
استفاده از مسواک جهت شستشوی دندان					
برای بازکردن درب شیشه ای (برای مثال: شیشه مربا، ترشی و...)					

از والدین شما آیا فردی چپ دست میباشد؟ بله  خیر  کدامیک ؟ .....چند خواهر و برادر دارید؟ خواهر  برادر چند تن از خواهر و برادر شما چپ دست می باشند؟ خواهر  برادر معمولاً" از کدام چشم برای نگاه کردن به تلسکوپ یا سوراخ کلید استفاده میکنید؟ چپ  راست آیاتا کنون آسیب مغزی شدیدی داشته اید؟ بله  خیر





## Fragebogen für Forschungszwecke an der Universität Kassel

Sehr geehrte Damen und Herren,

auf dieser und den folgenden Seiten befinden sich eine Reihe von Fragen, welche für die wissenschaftlichen Untersuchungen im Fachbereich Psychologie an der Universität Kassel notwendig sind. Ihre Antworten finden nur für den Zweck der Forschung Verwendung und bleiben selbstverständlich anonym. Die Daten werden nach der statistischen Auswertung vernichtet.

Für Ihre Mitarbeit bedanken wir uns herzlich.

Geburtsjahr ? \_\_\_\_\_ Geschlecht ? weiblich ( ), männlich ( )

(Bitte die richtige Antwort ankreuzen !)

Welche Hand wird bevorzugt?	immer links	gewöhnlich links	keine Vorliebe	gewöhnlich rechts	immer rechts
Um einen Brief leserlich zu schreiben ?					
Beim Werfen eines Balles, um ein Ziel zu treffen ?					
Um ein Spiel zu spielen, das die Benutzung eines Schlägers erfordert?					
Um einen Besen beim Ausfegen am oberen Stielende zu halten ?					
Um beim Sandschaufeln die Schaufel am Ende des Schaufelstieles zu halten ?					
Um beim Anzünden ein Streichholz zu halten ?					
Um die Schere beim Papierschneiden zu halten ?					
Um den Faden beim Einfädeln in eine Nähnadel zu halten ?					
Um beim Kartenspiel die Karten auszuteilen ?					
Um einen Nagel einzuschlagen ?					
Um die Zahnbürste beim Zähneputzen zu halten ?					
Um ein Glas aufzuschrauben ?					

Ist ein Elternteil von Ihnen Linkshänder ? Wenn ja, Vater ( ) oder Mutter ( ).

Wieviel Geschwister mit welchem Geschlecht haben Sie ? männlich \_\_\_\_\_, weiblich \_\_\_\_\_

Wieviel davon und mit welchem Geschlecht sind Linkshänder ? männlich \_\_\_\_\_, weiblich \_\_\_\_\_

Welches Auge benutzen Sie, wenn Sie nur eines gebrauchen (z.B.: Teleskop, Schlüsselloch) ?

links \_\_\_\_\_, rechts \_\_\_\_\_

Hatten Sie jemals eine schwere Kopfverletzung ? ja ( ), nein ( )

Machen Sie so schnell wie möglich einen Punkt in jedem dieser Kreise. Folgen Sie dabei dem Muster. Der Punkt muß sich genau innerhalb des Kreises befinden und darf nicht auf der Linie oder außerhalb sein. Ansonsten Kann er nicht gewertet werden. Für jeden der vier Blöcke stehen Ihnen genau zwanzig Sekunden zur Verfügung.

Benutzen Sie die Hand, mit der Sie schreiben.

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äußerliche Wesen

Beeinflussung durch

Mundpharen

Wie sehr erscheinen Ihnen folgende Dinge glaubwürdig?

	absolut unglaubwürdig	unglaubwürdig	ungewiß	glaubwürdig	absolut glaubwürdig
7 Gedankenübertragung					
Wahrsagerei					
Telekinese (etwas nur durch Willenskraft bewegen)					
Ufos					
Leben nach dem Tod					
Hellseherei					
Astrologie					
Kontakt mit Verstorbenen ( über Medien)					
esoterische Lehren					
Wiedergeburt					
Wirkung von Gebeten					
Zeichendeutung (bspw: Tarot, Ging)					
Amulette					
Wunder					
Erdstrahlen					
Wünschelruten					
außerirdische Wesen					
Beeinflussung durch Mondphasen					

Name \_\_\_\_\_ Sex \_\_\_\_\_ Age \_\_\_\_\_

Indicate hand preference	Always left	Usually left	No preference	Usually right	Always right
1. To write a letter legibly					
2. To throw a ball to hit a target					
3. To play a game requiring the use of a racquet					
4. At the top of a broom to sweep dust from the floor					
5. At the top of a shovel to move sand					
6. To hold a match when striking it					
7. To hold scissors to cut paper					
8. To hold thread to guide through the eye of a needle					
9. To deal playing cards					
10. To hammer a nail into wood					
11. To hold a toothbrush while cleaning teeth					
12. To unscrew the lid of a jar					

Are either of your parents left-handed? If yes, which? \_\_\_\_\_

How many siblings of each sex do you have? Male \_\_\_\_\_ Female \_\_\_\_\_

How many of each sex are left-handed? Male \_\_\_\_\_ Female \_\_\_\_\_

Which eye do you use when using only one (e.g., telescope, keyhole)? \_\_\_\_\_

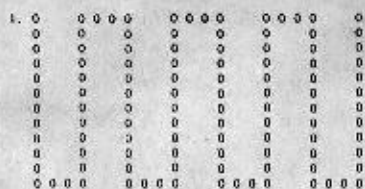
Have you ever suffered any severe head trauma? \_\_\_\_\_

Fig. 8-3 The handedness inventory. (Modified from Annett, 1967. Source: Briggs and Nebes, 1975)



Machen Sie so schnell wie möglich einen Punkt in jedem dieser Kreise. Folgen Sie dabei dem Muster. Der Punkt muß sich genau innerhalb des Kreises befinden und darf nicht auf der Linie oder außerhalb sein. Ansonsten kann er nicht gewertet werden. Für jeden der vier Blöcke stehen Ihnen genau zwanzig Sekunden zur Verfügung.

Benutzen Sie die Hand, mit der Sie schreiben.



Benutzen Sie die Hand, mit der Sie nicht schreiben.



Benutzen Sie die Hand, mit der Sie nicht schreiben.



Benutzen Sie die Hand, mit der Sie schreiben.

