The Relationship of Conformity and Memory

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Abstract

Some theorists believe that the brain was evolved under the influence of the community and for the community. So it seems that social function has priority on pure cognitive in the brain. The purpose of this research was to study the relationship between conformity and general memory. The current study is a descriptive-correlational research by using prediction (regression) method. For doing this, 167 students were selected via the multistage cluster method from Bonab and Tabriz Payam Noor universities. For gathering data, the Conformity L-72 Test and general memory Questionnaire (PRMQ) were used. The data were analyzed by using Pearson's Correlation test and Liner Regression methods. According to the results, the predictive role of conformity for errors in the general memory was confirmed (P<0/01). So that conformity explained 46% of general memory errors variance. Based on these results, it seems that social and cognitive functions of the brain are linked together to meet common goals.

Keywords: conformity, general memory, social brain, cognition

Introduction

Social influence is one of the topicsstudied insocial psychology which includesobedience and conformity. Social influence refers to changes in attitudes, beliefs, values, and behaviordue to the interaction with others (Schneider, Gruman, & Coutts, 2005, as cited in Alizadeh Fard, 2010). Conformity is defined as an agreement with an external data source (Berns et al., 2005). Conformitytakes a relatively large area and usually refers to a form of yielding to group influence (Aronson, 1999/2006). Conformity sometimes seems in the form of efforts to limit the freedom of the individual and fading sense of mastery over life (Salimi & Davari, 2007). Herlong (2005) believes that conformity can be considered as a form of personal behaviordeveloped as a result of group pressure. However this pressure and imposition is not as a direct request.

Some researchers consider conformity as a function of situational factors. In contrast, others consider individual and personality characteristics important and effective in development of conformity. Pourafkari (2006) stated that conformity has three distinct patterns including: a) behavioral, willing to cope with the group andcomply with the majority; b) attitudinal,

change in attitudes and beliefs affected by others that may lead to changes in behavior or not; and c) personality trait, when implicitly reflects the personality trait of the person who created the ability to accept one of the above two cases. Among the effective situational factors in the studies of the first group, we can point to the difficulty of the test (Bond & Smith, 1996), size of the group (Bond, 2005), face to face relation (Shiv, Loewenstein, Bechara, Damasio, & Damasio, 2005), and form of test materials (Bond & Smith, 1996). Although situational factors are important, in fact, the effects of individual factors on the occurrence of conformityare very important and fundamental and the results of recent researches show great individual differences in the incidence of conformity. For example, the need for social approval (Lavine & Snyder, 1996), having a sense of inferiority, severe self-control, feelings of dependence, the desire to blame, and low self-esteem (Cialdini & Goldstein, 2004), the desire for uniqueness (Imhoff & Erb, 2009), commitment and ego, i.e., the attitudes linked to self (Taylor, Paplau, & Sears, 2000), agreeableness of personality (Litzky, Eddleston, & Kidder, 2006), having female gender (Capra & Li, 2006), the presence of incompatible person in the group (Fusedleech, 2008), highself-awareness (Kurosawa, 2000), having severe anxiety (Spohn, 2007), high confidence in the group (Schneider & Watkins, 1996), belonging a person to a collectivist society (Bond & Smith, 1996), and high similarity of the person and majority group (Abrmas et al., 1990) can increase the rate of conformity.

Although conformity in individuals leads to better compatibility with environment and group, this feature, in some cases, may cause harm to oneself or others. For example, the researches indicated that memory conformity, in some cases, may cause errors. For example, according to Bonder, Musch, and Azad (2009), sometimes witnesses report the details of the event that only obtained from other witnesses. Bonder et al. (2009) reevaluated the impact power of memory conformity and how witnesses may believe and report the details of criminal event heard from other witnesses, as if they have seen it themselves. Error in eyewitness testimony can haveserious consequences, especially for people who are wrongfully convicted. Therefore, identifying characteristics of conformity in individuals and its effect on assessment, judgment, memory, reasoning, etc. is essential.

While, researches on conformity and its related factors show that few studies have examined the basic cognitive correlates of conformity, such as memory. Memory, as one of the most important cognitive component, is associated with many individual, personal, and situational characteristics. Memory includes the process of acquiring, recording or coding, accumulation, and finally, the information retrieval and it can be classified in different ways (Nikdel, Karami Nouri, & Arabzadeh, 2009). Karami Nouri (2004) considers memory as the processes of acquiring, recording or coding, accumulation, and finally, the information retrieval. So far, in the studied researches, the effects of conformity on recognition and recall memory are more studied.

While, these studies have been conducted in laboratory environments, but in the real world, conformity features of individuals determines their behavior.

The aim of the present study, however, with regard to the lack of available studies on the characteristics of conformity and its impact on different types of memory, was to examine the correlation of conformity with general memory. The previous studies about the relationship of conformity and memory were based on memory conformity, a concept that is about the impact of others' memories on the memories of the person. But in this study the conformity and memory were consider as a two distinguish abilities in the persons.

Method

The method of the present study is descriptive-correlational research by prediction (regression) method. The statistical population of the study consisted of all male and female students in MA degree of two centers of Payam Noor University who studied in these universities in all available majors in 2014-15 academic years. The sample of the study was selected via the multistage cluster method. In this regard, in the first step, all majors of these universities were identified and then, among these, some majors were randomly selected, finally, among selected majors, required number of classes were identified and the questionnaires were among the students of the classes. After removing distortive questionnaires, the questionnaires of 167 students (72 males, 95 females) were remained in order to study and analyze data. For measuring the rate of conformity, the Conformity L-72Questionnaire and for measuring general memory the Prospective Retrospective Memory Questionnaire (PRMQ) were used.

Conformity L-72 Questionnaire

This test can measure the amount of conformity in real life. The cases in which subjects respond them, doesn't allocated to an artificial situation. But it refers to revealing the behaviors and beliefs that experienced in a long period and real groups. In this questionnaire, like laboratory, conformity assessment is not limited to the specific situation in order to cause damage in the rate of findings decidability. For exampleparticipants were asked to respondto questions such as "*I always try my behavior be favorite for others*". In answering the questionnaire items, it is not necessary, as experimental conditions, the subject accept one of the opposite responses (acceptance or rejection of group influence), but s/he can choose own response in a continuum of four-option choices. But, it can be concluded that conformity is not the function of all-or-none law, so, we cannot consider someone as a completely conformable or non-conformable person.

As the scale of answering to the Conformity L-72 Questionnaire (disagree, almost agree, agree, and strongly agree) do not have neutral answer option (I don't know) and the opposite answer is given zero score, Therefore, the scores obtained from this test only shows the amount

of conformity, and unlike other scales such as Likert scale, the scores of different subjects doesn't have different meaning and the subjects can be easily compared with each other and the statistical indicators can be used in order to analyze obtained data. The cutting line of 43/87 of the questionnaire means that the lower scores indicate the lack of conformity and high scores show complete conformity. The cutting line in the questionnaire was calculated by using standard error of measurement and confidence intervals. So that the upper limit of the confidence interval is considered as the cut-off point (Lotfi, 2002, as cited in Shamsai, Karimi, Jadidi, & Nikkhah, 2009). In the study of Shamsai et al. (2009), the validity of the questionnaire was obtained.91 by using Cronbach's alpha. In the present study, Cronbach's alpha for this scale was obtained.91 (see Table 1).

General Memory Questionnaire (Prospective/ Retrospective Memory Questionnaire (PRMQ)

This test is a pencil and paper test developed by Crawford et al. in 2003 and consisted of 16 items. The subject answers to each question based on a five-degree scale. Participants were asked to respondto questions such as*"Do you fail to recall things that have happened to you in the last few days?"* that assess retrospective/long term/self-cued memories. This tool involves a main sub scale titled prospective/retrospective memory and two subsidiary subscales with the main sub scale called short-term/long-term/self-cued/environ-cued and finally it has a total scale titled general memory developed by sum of the scales. This test, in fact, assesses the rate of total memory error and its sub scales. Therefore, high score in the index refers to the presence of weak function of memory components. Crawford et al. (2006) reported the reliability of the test as.89, respectively, by internal consistency (Cronbach's alpha) in general memory (Zahednezhad, Poursharifi, & Babapour, 2012). In Zahednezhad, Poursharifi, and Babapour's study (2012), Cronbach's alpha coefficient of the questionnaire for general memory obtained .88, respectively.

Table 1
Cronbach's alpha coefficient related to conformity and general memory

Factors	No. of People	No. of Questions	Cronbach's Alpha Coefficient
Conformity	167	55	.91
General Memory	167	16	.89

In the present study, the reliability of the conformity questionnaire and general memory test were examined by calculating Cronbach's alpha and study of internal consistency of the tool which indicates the good and acceptable reliability of both tools (see Table 1). The data were analyzed by Pearson's correlation test, linear regression analysis, and independent-groups t-test.

Results

In the present study, the mean age of all students was 25.19, male students 25.6, and female students 24.9.

Table 2
Mean, standard deviation, and independent t-test to compare the participants' mean scores in according to gender in conformity and general memory

Variable	Gender	Number	M	SD	Independent T-test	
					t	P
Conformity	Male	72	68.83	19.36	-1.8	.078
	Female	95	74.62	22.04		
	Total	167	72.12	21.06		
General Memory	Male	72	119.25	34.32	1.07	.288
	Female	95	114.01	27.23		
	Total	167	116.27	30.50		

According to Table 2, there is no significant difference between male and female students in none of the studied variables. Pearson's correlation test was used in order to study the reciprocal relationship between research variables (see Table 3).

Table 3
The correlation coefficient between Conformity and General Memory

Variable		General Memory
Conformity	Pearson Correlation	**.466
	P	< .001
	N	167

According to the results of Table 3, there was significant correlation between conformity and general memory (P<0.01). Linear regression analysis results were studied in order to examine conformity contribution in predicting general memory (see Table 4).

According to the results of linear regression analysis in Table 4, the predictive role of conformity in general memory were confirmed (p<0.01). So that, conformity can explains47% of general memory variance. It means that, as the measurement tools of memory in this study, in fact, measures malfunctions of general memory and its factors, it is expected that by increasing one unit of conformity feature, general mem ory reduces about 0.47units.

Table 4
Simple linear regression to predict general memory based on conformity

Predictive Variable	Criterion Variable	r	r^2	B	SEB	Beta	t
Conformity	General Memory	.47	.217	.675	.10	.47	**6.77

** p<0.01

Discussion

In the present study with the aim of examining the relationship between conformity feature and general memory, the results indicated that general memory had a reverse significant relationship with conformity features with 99 percent confidence and conformity feature had considerable and significant contribution in predicting errors of general memory. So, whatever conformity feature increases in an individual, memory performance decreases.

In explanation of these findings it can be stated that, it seems that when a person has high conformity feature, due to the influence of environmental conditions and the world around, the reliance of person on basic cognitive

processes such as memory decreases and conformity as a basic mechanism of social brain, will be determinant. In other words,a person who has more willing to use the conformity ability, less uses the basic cognitive abilities such as memory that has characteristic of self-confidence. Another explanation of this finding could be that, people who have low performance in the memory are more dependent on the ability of social conformity, but the first explanation has more research foundations.

The previous researches were focused on the effect of individual conformity with group on cognitive variables such as memory. The previous studies about the relationship of conformity and memory were based on memory conformity, a concept that is about the impact of others' memories on the memories of the person. In these previous studies, the materials were given to people that study the ability of memories such as recall and recognition in the intergroup experimental condition. In other words, the person deals with memory conformity influenced by the memory of others. In fact, memory conformity refers to the effect of others presence on the individual memories. On the other hand, memory conformity occurs when the individual memory reporting affect someone else's memory reporting (Horry, Palmer, Sexton, & Brewer, 2011). Studies done with this approach have examined the effect of conformity on recall and recognition memory especially in the groups and eyewitnesses (e.g., Axmacher, Gossen,Elger, & Fell, 2010; Carol, Carlucci, Eaton, & Wright, 2013). The results of Horry et al.'s (2011) study indicated that even safely stored memories are influenced by external resources.

But, in this research, the relationship of these two abilities as social and cognitive functions of memory in people away from group effect was examined. The results of the present study suggest that paying attention to the external resources and using them may decrease the priority of relying on internal resources and using them. According to the social brain hypothesis, big brains in primates emerged for the management of complex social systems (Dunbar, 2009). On the other hand, brain development followed by basic cognitive functions, are served the requirements of the social environment. The study of Carol et al. (2013) show that in the interactions that need to be reminded in a conformity situation, memory conformity occurs. In other words, social conformity effects on the actual contents

of the memory and in fact, somehow, determines the memory.

According to the findings of Wright, Memon, Skagerberg, & Gabbert (2009), researchers suggest that how people combine information about their own memory with memories of other people based on factors such as confidence, perceptual expertise, and social cost of disagreement with others. People forget the information, mistake aspects of different events, and are influenced by what others say. In their study with the focus on how eyewitness are affected by others' words and the phenomenon of memory conformity or social superiority of memory occurs, it was observed that in social situations, people reporting things that do not believe them in order to conform to the group norms and obtain social acceptance. According to Wright et al. (2009), an eyewitness could response according to the words of other witness by three reasons: he would not disagree with another person;he thinks that the other individual is right; and he creates his own memory on what the other person says. It seems that in individuals with high conformity that attention to the environment and conformity with it distort and incomplete the memory, cognitive distortions dedicated to the memory will be more. According to Carol et al. (2013), memory can be widely considered as a social phenomenon. Both memory encoding and retrieval can be influenced by external factors such as diversions and distractions during encoding and recalling details of an event with co-witness during retrieval. Such an outcome has been repeated in the study of Mori and Kishikawa (2014). They indicated that the effects of memory conformity also exist even when the initial data is in the form of auditory. During discussions with co-witnesses, details that they had heard (audio witness) were also distorted memory.

Conclusion

According to the available literature and the research findings, it can be concluded that conformity and memory perform in order to meet common goals and complete each other and theory of mind can be considered with greater emphasis. However, the present study like other researches has limitations to generalize the results. It seems that the most important limitation of the study was the measurement tools used to measure research variables. It may seem if the research variables measure by other tools, we can interpret the results with more confidence. Therefore, for developing these findings, we can act as a theory and design more researches.

References

Abrams, D., Wetherel, M., Cochrane, S., Hogg, M.A., & Turner, J.C. (1990). Knowing what to think by knowing who you are. *British Journal of Social Psychology, 29,* 97-119.

Alizadeh Fard, S. (2010). Effect of gender and social status on conformity. *Psychological Research, 13*(1), 30-50.

Aronson, A. (2006). *Social psychology*(H. Shekarshekan, Trans.). Tehran: Roshd Publication. (Original work published 1999).

Axmacher, N., Gossen, A., Elger, C.E., & Fell, J. (2010). Graded effects of social conformity on recognition memory. *PLoS ONE, 5*(2), e9270.

Berns, G. S., Chappelow, J., Zink, K. F., Pagnoni, G.,Martin-Skurski, M. E.,& Richards, J. (2005). Neurobiological correlates of social conformity and independence during mental rotation. *Bio Psychiatry, 58*, 245–253.

Bond, R. (2005). Group size and conformity. *Group Processes and Intergroup Relation, 8(4),* 331-354.

Bond, R., & Smith, P.B. (1996). Culture and conformity: A meta-analysis of studies using Asch`s Line Judgment task. *Psychological Bulletin, 119*, 111-137.

Bonder, G.E., Musch, E., & Azad, T. (2009). Reevaluating the potency of the memory conformity effect. *Memory & Cognition, 37(8),* 1069-1076.

Capra, C.M.,& Li, L. (2006). *Conformity in contribution games: Gender and group effects*. Working Paper, Emory University.

Carol, R.N., Carlucci, M.E., Eaton, A.A., & Wright, D.B. (2013). The power of a co-witness: When more power leads to more conformity. *Applied Cognitive Psychology, 27*(3), 344-351.

Crawford, J.R., Henry, J.D., Ward, A.L., & Blake, J. (2006). The prospective and retrospective memory questionnaire (PRMQ): Latent structure,normative data and discrepancy analysis for proxy-ratings. *British Journal of Clinical Psychology, 45,* 83–104.

Dunbar, R. I. M. (2009). The social brain hypothesis and its implications for social evolution. *Annals of Human Biology, 36(*5): 562-572.

Fusedleech. (2008).*Conformity.* RetrievedJun 30, 2012 from http://www.studymode.com.

Ghoshuni, M. (2005). *Quantification of brain signal (ERP) during the process of episodic memory*. MA Dissertation, Medical engineering (Bioelectric), Islamic Azad University of Mashhad.

Herlong, R. (2005). *Influence of conformity*. Retrieved Jun 30, 2012 from http://www.studymode.com.

Horry, R., Palmer, M. A., Michelle, L. Sexton, M. L., & Brewer, N. (2011). Memory conformity for confidently recognized items: The power of social influence on memory reports. *Journal of Experimental Social Psychology, 4*(4C), 1-4.

Imhoff, R.,& Erb, H. P. (2009). What Motivates nonconformity? Uniqueness seeking blocks majority influence. *Personality and Social Psychology Bulletin, 35(3),* 309-320.

Karami Nouri, R. (2004). *Psychology of learning and memory with the cognitive approach*. Tehran: Samt Publication.

Kurosawa, K. (2000). *The effects of self-consciousness and self-esteem on conformitytoa majority.* Available at: www.ncbi.nlm.nih.gov/pubmed.

Lavine, H., & Snyder, M. (1996). Cognitive processing and the functional matching effect in persuasion: The mediating role of subjective perceptions of message quality. *Journal of Experimental Social Psychology, 32*, 580-604.

Litzky, B. E. Eddleston, K., & Kidder, D. L. (2006). The good, the bad and the misguided: How managers inadvertently encourage deviant behaviors, *Academy of management perspectives, 20*, 91-103.

Mori, K., & Kishikawa, T. (2014). Co-witness auditory memory conformity following discussion: A misinformation paradigm. *Perceptual and Motor Skills, 118*(2), 1-15.

Nikdel, F., Karami Nouri, R., & Arabzadeh, M. (2009).The effect of memory self-efficacy on episodicand semantic memory. *Advances in Cognitive Science, 11*(2), 19-26.

Pourafkari, N. A. (2006). *Comprehensive dictionary of psychology-psychiatry and related issues*. Tehran: Farhang.

Schneider. F. W., Gruman, J. A., & Coutts, L.M. (2005). *Applied social psychology: Understanding and addressing social and practical problems*. Thousand Oaks, CA: Sage Publications.

Shamsai, M. M., Karimi, Y., Jadidi, M., & Nikkhah, H. R. (2009). Conformity: Its correlates with the big five personality traits, sex, and marital status.*Applied Psychology Quarterly, 1*(9), 67-82.

Shiv, B., Loewenstein, G., Bechara, A., Damasio, H.,& Damasio, A.R. (2005). Investment behavior and the negative Side of Emotion. *Psychological Science, 16*(6), 435-439.

Spohn, C. (2007). The deterrent effect of imprisonment and offenders` stakes in conformity. *Criminal Justice Policy Review, 18*, 31-50.

Taylor, S.E., Peplau, L.A.,& Sears, D.O. (2000). *Social psychology* (10thed.). New Jersey: Prentice Hall.

Wright, D. B., Memon, A., Skagerberg, E. M., & Gabbert, F. (2009). When eyewitnesses talk. *Current Directions in Psychological Science, 18*, 174-178.

Zahednezhad, H., Poursharifi, H., & Babapour, J. (2012). Relationship between health locus of control, memory, and physician-patient relationship with satisfaction of treatment in type II diabetic patients. *Journal of Shahid Sadoughi University of Medical Sciences, Yazd,2*(2), 249-258.