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# The effect of scarcity on group-joining behavior

Matthew C. Pendo  
*San Jose State University*

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THE EFFECT OF SCARCITY ON GROUP-JOINING BEHAVIOR

A Thesis

Presented to

the Faculty of the Department of Psychology

San Jose State University

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

by

Matthew C Pendo

December, 1999

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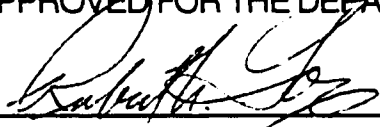
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APPROVED FOR THE DEPARTMENT OF PSYCHOLOGY

  
\_\_\_\_\_

Dr. Robert Fox-Thesis Chairperson


  
\_\_\_\_\_

Dr. Dale Wise-Thesis Committee Member

  
\_\_\_\_\_

Dr. Arlene Asuncion-Thesis Committee Member

APPROVED FOR THE UNIVERSITY

  
\_\_\_\_\_

## ABSTRACT

### THE EFFECT OF SCARCITY ON GROUP-JOINING BEHAVIOR

by Matthew C Pendo

The purpose of the present study was to determine the effects of perceived scarcity on group-joining behavior. Scarcity theory asserts that opportunities appear to be more valuable when their availability is limited. Participants, 140 student volunteers from undergraduate psychology courses at San Jose State University, were assigned randomly to the scarcity or no scarcity groups. After being given the opportunity to join a group under scarcity or no scarcity conditions, participants were tested for their desire for group membership.

It was hypothesized that desire to be included in a group would increase when participants perceived that opportunity to join the group was limited. Participants in the scarcity conditions did not exhibit significantly more desire for group membership than did those in the no-scarcity conditions; thus, the hypothesis was not supported.



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The Effect of Scarcity on Group-Joining Behavior

Matthew C. Pendo

San Jose State University

GROUP SCARCITY

## Abstract

The purpose of the present study was to determine the effects of perceived scarcity on group-joining behavior. Scarcity theory asserts that opportunities appear to be more valuable when their availability is limited. Participants, 140 student volunteers from undergraduate psychology courses at San Jose State University, were assigned randomly to the scarcity or no scarcity groups. After being given the opportunity to join a group under scarcity or no scarcity conditions, participants were tested for their desire for group membership. It was hypothesized that desire to be included in a group would increase when participants perceived that opportunity to join the group was limited. Participants in the scarcity conditions did not exhibit significantly more desire for group membership than did those in the no-scarcity conditions; thus, the hypothesis was not supported.

### The Effect of Scarcity on Group-Joining Behavior

In ancient times, the Roman poet Ovid wrote, "Easy things nobody wants, but what is forbidden is tempting"(Ovid, 1957, p. 65). Centuries later, the Scottish philosopher Adam Smith wrote, "...the merit of an object, which is in any degree either useful or beautiful, is greatly enhanced by its scarcity, or by the great labor which it requires to collect any considerable quantity of it..."(Smith, 1937, p.172). Despite their greatly differing back-grounds, both of these men clearly perceived and succinctly described the basic concept of scarcity, as defined by modern scarcity theory. Few concepts in social psychology have implications that are more wide-ranging than those of scarcity theory. This theory has been demonstrated to apply to issues as diverse as purchasing of consumer products, court-room outcomes, consumption of literature, choice of romantic partners, and even global politics. Scarcity theory states that opportunities appear to be more valuable to us when their availability is limited. Scarcity theory is actually only a specific subclass of psychological reactance theory, a concept developed by Brehm to explain data related to the human response to a diminishing state of personal control (Brehm, 1972; Brehm & Brehm, 1981).

Central to the theory of scarcity is the concept of

psychological reactance. According to psychological reactance theory, whenever an individual's freedom of choice is limited or threatened, the need to retain freedom (and the goods or services associated with it) makes that individual desire these goods or services more than he or she otherwise would. Whenever an individual's freedom is threatened, the exercising of that freedom increases in value and attractiveness. This increase in value is the result of the participant reacting against the loss of personal freedom and becoming motivated to restore that freedom. Psychological reactance can be conceptualized as a set of motivational consequences that can be expected to occur whenever an individual's freedoms are lost or threatened. Scarcity theory applies to the special cases of psychological reactance in which the threatened freedom involves limited availability (or scarcity) of an item or opportunity (Brehm, 1972; Wicklund, 1974). Scarcity theory is applied to group-joining behavior when the opportunity to become a member of a group is threatened.

Previous studies have explored many theoretical and practical ramifications of scarcity theory. Research has demonstrated that scarcity can influence the individual's perception of the desirability of potential romantic partners (Pennebaker, 1979). Scarcity has

also been shown to influence desire for, and perceived attractiveness of, existing romantic partners (Driscoll, Davies, & Lepitz, 1972). Scarcity influences toy selections of young children (Brehm & Weintraub, 1977) and the public's choice of consumer products (Mazis, 1975; Mazis, Settle & Leslie, 1973). The response to the banning or censoring of information (which results in scarcity) is consistently to desire that information more than before (Worchel & Arnold, 1973; Worchel & Baker, 1975). The effect of scarcity, in the form of censorship, also has been demonstrated in relation to literature (Zellinger, 1974). Similar effects have been demonstrated with time scarcity (Karau & Kelly, 1992). Newly discovered scarcity evokes especially powerful desire for the scarce product or service (Worchel, Lee & Adewole, 1975). Scarcity also has been shown to influence courtroom outcomes (Broeder, 1959) and aspects of academic performance (Gordon, 1994). Social scientists have even theorized that the relative power of newly experienced scarcity can play an important role in political unrest and turmoil (Davies, 1962).

Recent research has combined scarcity theory with other models and constructs to create more encompassing theoretical models (Grewal, 1995; Worchel, 1992; Wright, 1992). Theorists disagree about whether scarcity theory is compatible with business

oriented theories such as commodity theory (Brock & Brannon, 1992; Lynn, 1991; Worchel, 1992). Applied business issues have recently become a focus of scarcity research (Folkes, Martin, & Gupta, 1993; Grewal, 1995; Verhallen & Robben, 1994; Wayne & Rubinstein, 1992). Some researchers have concluded that the individual's need for uniqueness plays a role in the scarcity effect (Brock & Brannon, 1992; Lynn, 1991; Snyder, 1992).

Although many aspects and applications of scarcity theory have been delineated by previous research, its effects on group-joining behavior remain unknown. The effects of scarcity on group-joining behavior could influence an extremely wide range of groups, including groups as diverse as social clubs, political parties, religious organizations, consumer co-ops and charismatic cults. The purpose of the present study is to determine the effects of scarcity on group-joining behavior. Theory and existing research suggest that increased perception of scarcity should be associated with increased desire for group membership. It was hypothesized that desire to be included in a group would increase when participants perceived that opportunity was limited.

To test this hypothesis, participants were given the opportunity to join groups under scarcity or no scarcity conditions, and then

were tested for their desire for group membership. Half of the participants were in scarcity conditions and half were in no-scarcity conditions. Participants were randomly assigned to conditions and the sequence of administration was counterbalanced to avoid confounding from order effects.

Participants in all conditions were told that they had the opportunity to participate in one of two experiments. Both experiments described to the participants were totally fictitious; this deception was necessary to create the perception of groups that participants could potentially become members of. One fictitious experiment was presented as obviously more attractive. It was the participant's desire to be included in this attractive group that was manipulated with scarcity and evaluated. Inclusion of the unattractive (and also fictitious) experiment was necessary only to justify to the participants why some of them must be excluded from the attractive study. Participants in the scarcity conditions were told that they could not be guaranteed membership in the attractive experiment; this manipulation created the perception of scarcity. Comparison of posttests indicated if desire to be included in the attractive group increased when participants perceived that opportunity for membership was limited.



## Method

### Participants

Participants consisted of 140 student volunteers from undergraduate psychology courses at San Jose State University. Participants earned credits in their psychology courses for participating in the experiment.

### Procedure

Upon arrival, participants were randomly assigned to one of four conditions in a 2X2 factorial design. One independent variable was the presence or absence of scarcity. The second independent variable was the order of administration; for half of the participants the scarcity condition was manipulated first and for half of the participants the no scarcity condition was manipulated first.

Participants in the no-scarcity conditions were told that the experimenters were studying the effectiveness of new math programs that are designed to be inherently fun as well as more effective. They were told that the present investigation compares math performance using a fun, game-oriented method to math performance using the traditional, tedious, repetition-oriented method. Participants were told that they had the option of taking part in one of two experimental groups. They were told that the first

experiment (the attractive experiment) involved playing an entertaining game in which tokens are bet and won or lost. Participants were told that the second experiment (the unattractive experiment) involved the boring task of counting the number of syllables in a series of paragraphs and then performing a series of math equations without pencil or paper.

After they had heard the instructions, participants were administered a posttest to measure their desire for group membership. This posttest consisted of 11 questions utilizing a five-point Likert scale format. One of these questions assessed the degree to which the respondents desired to participate in the attractive study. This question was placed on the pretest among 10 unrelated and neutral questions utilizing the same format. Participants were given 5 minutes to complete the posttest.

All procedures executed with the no-scarcity conditions were repeated as they had been with the scarcity conditions, with one exception; after hearing the instructions, participants in the scarcity conditions were told that they could not be guaranteed admittance into the attractive experiment. It was explained that because there must be an equal number of participants in each group, not everyone can be included in the attractive experiment.

At the conclusion of the experiment, all participants were thoroughly debriefed. When all of the participants' questions had been answered, the experiment was concluded. The questionnaire responses were then tabulated and recorded.

### Results

Tabulation of the responses to the 5-point Likert scale questionnaire indicated that the no-scarcity/order2 condition scored the highest on desire for group membership ( $M = 4.89$ ,  $SD=2.53$ ), followed by the scarcity/order1 condition ( $M = 4.31$ ,  $SD=.63$ ), the scarcity/order2 condition ( $M = .4.2$ ,  $SD=.72$ ), and no-scarcity/order1 condition ( $M = 4.11$ ,  $SD=.72$ ). A 2X2 Factorial design was utilized to analyze the data. One independent variable was the presence or absence of scarcity. The second independent variable was the order of administration; for half of the participants the scarcity condition was manipulated first and for half of the participants the no scarcity condition was manipulated first. An alpha level of .05 was used for all statistical tests. This analysis indicated that scarcity did not have a significant effect on participants' desire to be included in the attractive study,  $F(1,136) = 1.06$ ,  $p>.05$ . Order of administration also exhibited no significant effect,  $F(1,136) = 1.93$ ,  $p>.05$ . The effect of interaction was not significant,  $F(1,136) = 3.51$ ,  $p>.05$ .

## Discussion

The purpose of the present study was to determine the effects of scarcity on group-joining behavior. Theory and existing research suggest that increased perception of scarcity should be associated with increased desire for group membership. It was hypothesized that participant desire to be included in the attractive study would increase when participants perceived that the opportunity was limited. The results obtained do not support this hypothesis. These findings are not consistent with scarcity and reactance theory or associated research (Brehm & Weintraub, 1977; Mazis, 1975; Pennebaker, 1979; Worchel, 1992).

The present study incorporates several potential methodological limitations. One possible weakness is its lack of blind procedures. Because the experimenter knew the purpose of the study and which participants were in each condition, demand characteristics may have influenced the participants' responses. Another limitation of the present study consists of the fact that the effectiveness of deception was never evaluated. Because the deception may have been unsuccessful in some cases, it is possible that some participants realized the true purpose of the study and were therefore biased in their responding.

Two other factors that may have contributed to the study's failure to reject the null hypothesis are insufficient power of the manipulation and insufficient sensitivity of the 5-point Likert scale. Because all of the participants may have been highly motivated to join the attractive group and avoid the boring group, it may have been more difficult to detect the effects of the manipulation. Alternatively, participants may have been motivated solely by their desire to obtain credit for participating in an experiment and therefore may have been unaffected by the manipulation or the attractiveness of the attractive experiment. No measure was taken of how attractive the participants found the attractive experiment. Another possible weakness is related to instrumentation. The pattern of participant responses suggests that the 5-point Likert scale used may have lacked sufficient sensitivity. Because the measurement instrument may have lacked sensitivity, it is possible that existing effects were overlooked.

Although the present study has not detected a significant effect of scarcity on group-joining behavior, the volume and consistency of existing scarcity research suggests that future research is warranted. By eliminating the methodological weaknesses of the present study, future research may detect a significant effect of scarcity on group-

joining behavior. Determining whether the same results occur when the study is replicated in more naturalistic settings and when using samples drawn from other populations should also be a goal of future research. Future research should also determine if the same results occur when scarcity occurs without competition, as competition was present in the design of this study. Competition, defined as mutual striving between two or more individuals or groups for the same objective, has also been shown to increase desire for the desired objective (Sherif, Harvey, White, Hood, & Sherif, 1961). Finally, the utilization of data collection techniques other than self-report should also be explored by future research, as participants' behavior may not be consistent with their self-report.

## References

Brehm, J. W. (1972). Responses to loss of freedom: A theory of psychological reactance. Morristown, NJ: General Learning Press.

Brehm, S. S., & Brehm, J. W. (1981). Psychological reactance: A theory of freedom and control. New York, NY: Academic Press.

Brehm, S.S., & Weintraub, M. (1977). Physical barriers and psychological reactance: Two-year-old's response to threats of freedom. Journal of Personality and Social Psychology, 35, 830-836.

Brock, T. C., & Brannon, L. A. (1992). Liberalization of commodity theory. Basic and Applied Social Psychology, 13, 135-144.

Broeder, D. (1959). The university of Chicago jury project. Law Review, 38, 760-774.

Davies, J. C. (1962). Toward a theory of revolution. American Sociological Review, 27, 5-19.

Driscoll, R, Davies, K. E., & Lepitz, M. E. (1972). Parental interference and romantic love: The Romeo and Juliet effect. Journal of Personality and Social Psychology, 24, 1-10.

Folkes, V. S., Martin, I. M., & Gupta, K. (1993). When to say when: Effects of supply on usage. Journal of Consumer Research, 20(3), 467-477.

Gordon, R. (1994). The effect of perceived resource availability

on the revision of written assignments. Journal of Social Psychology, 134(1), 41-45.

Grewal, D. (1995). Product quality expectations: Toward an understanding of their antecedents and consequences. Journal of Business and Psychology, 9(3), 225-240.

Karau, S., & Kelly, J. (1992). The effects of time scarcity and time abundance on group performance quality and interaction process. Journal of Experimental Social Psychology, 28(6), 542-571.

Lynn, M.(1991). Scarcity effects on desirability: A quantitative review of the commodity theory literature. Psychology and Marketing, 8, 43-57.

Mazis, M. B. (1975). Antipollution measures and psychological reactance theory: A field experiment. Journal of Personality and Social Psychology, 31, 654-666.

Mazis, M. B., Settle, R. B., & Leslie, D. C. (1973). Elimination of phosphate detergents and psychological reactance. Journal of Personality and Social Psychology, 10, 390-395.

Ovid (1957). The art of love. Bloomington: Indiana University Press.

Pennebaker, J. W. (1979). Don't the girls get prettier at closing time? Personality and Social Psychology Bulletin, 5, 122-125.



Sherif, M., Harvey, O. J., White, B. J., Hood, W., & Sherif, C. (1961). Intergroup conflict and cooperation: The robber's cave experiment. Norman: University of Oklahoma Institute of Intergroup Relations.

Smith, A. (1937). The wealth of nations. New York: Random House.

Snyder, C. R. (1992). Product scarcity by need for uniqueness interaction: A consumer catch-22 carousel?. Basic and Applied Social Psychology, 13(1), 9-24.

Verhallen, T. M., & Robben, H. J. (1994). Scarcity and preference: An experiment on unavailability and product evaluation. Journal of Economic Psychology, 15(2), 315-331.

Wayne, S. J., & Rubinstein, D. (1992). Extending game theoretical propositions about slack and scarcity in managerial decision making. Human Relations, 45(5), 525-536.

Wicklund, R. A. (1974). Freedom and Reactance. Potomac, MD: Lawrence Erlbaum Associates.

Worchel, S. (1992). Beyond a commodity theory analysis of censorship: When abundance and personalism enhance scarcity effects. Basic and Applied Social Psychology, 13(1), 79-92.

Worchel, S., & Arnold, S. E. (1973). The effects of censorship

and the attractiveness of the censor on attitude change. Journal of Experimental Social Psychology, 9, 365-377.

Worchel, S., & Baker, M. (1975). The effect of censorship on attitude change: The influence of censor and communicator characteristics. Journal of Applied Social Psychology, 5, 222-239.

Worchel, S., Lee, J., & Adewole, A. (1975). Effects of supply and demand on ratings of object value. Journal of Personality and Social Psychology, 32, 906-914.

Wright, R. (1992). Desire for outcomes that are more or less difficult to obtain: Analysis in terms of energization theory. Basic and Applied Social Psychology, 13(1), 25-45.

Zellinger, D. A. (1974). A commodity theory analysis of the effects of age restrictions on pornographic materials. Institute for Research in the Behavioral, Economic, and Management Sciences, Purdue University, Paper No 440.

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http://www.sjsu.edu

TO: Matt Pendo  
3685 So. Bascom Ave., #49  
Campbell, CA 95008

FROM: Serena W. Stanford *Serena W. Stanford*  
AVP, Graduate Studies & Research

DATE: February 10, 1998

The Human Subjects-Institutional Review Board has approved your request to use human subjects in the study entitled:

"The Effect of Scarcity on Group Joining Behavior"

This approval is contingent upon the subjects participating in your research project being appropriately protected from risk. This includes the protection of the anonymity of the subjects' identity when they participate in your research project, and with regard to any and all data that may be collected from the subjects. The Board's approval includes continued monitoring of your research by the Board to assure that the subjects are being adequately and properly protected from such risks. If at any time a subject becomes injured or complains of injury, you must notify Serena Stanford, Ph.D., immediately. Injury includes but is not limited to bodily harm, psychological trauma and release of potentially damaging personal information.

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Business Office  
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Phone: (415) 774-2000  
Fax: (415) 774-2000  
E-mail: busoff@calstate.edu