

**ODD COUPLINGS: EFFECT OF DYADIC GROUPS ON
CREATIVITY**

An Honors Fellow Thesis

by

TREY WILLIAM ARMSTRONG

Submitted to Honors and Undergraduate Research
Texas A&M University
in partial fulfillment of the requirements for the designation as

HONORS UNDERGRADUATE RESEARCH FELLOW

May 2012

Major: Psychology

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Approved by:

Research Advisor:

Associate Director, Honors and Undergraduate Research:

Jay Woodward

Duncan MacKenzie

May 2012

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ABSTRACT

Odd Couplings: Effect of Dyadic Groups on Creativity. (May 2012)

Trey William Armstrong
Department of Psychology
Texas A&M University

Research Advisor: Dr. Jay Woodward
Department of Educational Psychology

Intimate creativity, as defined by Irving and Suzanne Sarnoff, involves two means of fulfillment in life, love and creativity. This research study looks at the interaction between intimate couples and creativity. Individuals in various psychology and educational psychology were recruited to participate with a partner. To participate they must bring in a romantic partner or a friend they have known for at least six months. The couples tested once with their partner and once with an impromptu partner on the Thinking Creatively with Sounds and Words. To measure cooperation and creative climate, after each TCSW administration, every individual was given the participative safety subscale of the Team Climate Inventory. The intimate partners performed significantly better than the impromptu pairs on the TCSW. Team climate had no significant role in the relationship between type of partner and TCSW score. One limitation of this study is the small sample size, and thus, calls for more research to determine the relevance of intimate partnerships in creative production.

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NOMENCLATURE

TCSW

Thinking Creatively with Sounds and Words

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CHAPTER I

INTRODUCTION

When someone thinks of intimacy, creativity does not usually come to mind. However, the integration of creativity into our intimate relationships can be rewarding. Irving and Suzanne Sarnoff, in their book *Intimate Creativity*, explore two sources of fulfillment in life, creativity and love. They work together as authors in psychology, a creative dyad. The Sarnoffs are specifically looking at couples who are in love but also a creative team and co-contributors. They wanted to know in what ways their intimate relationship with their partner affects their joint creativity, and how does their creativity affect the relationship with their loving partner. Intimate creativity illustrates the potential creative, romantic couples have to live full, meaningful lives. More importantly, it shows the ability of romantic couples to be creative and to benefit greatly from doing so (Sarnoff & Sarnoff, 2002).

Creativity requires multiple perspectives in order to appreciate it in varying situations. One important distinction is between individual and group creativity. One important individual theory, put forth by Amabile (1983; 1996), is her componential theory of individual creativity consisting of three components, domain-relevant skills, creativity-relevant processes, and task motivation that influence an individual's creativity.

This thesis follows the style of *Journal of Creative Behavior*.

There are also multiple group dynamic and social factors, which also affect whether someone or something is creative.

In the field of social psychology, researchers wanted to see how creativity crossed over into social situations. How much does creativity influence productivity in groups, and how can we best match members of these groups? Research previously has looked at how well do groups perform on a task given to them; creativity of the produced product would then be assessed. This is looking at the creative product. Is a product distinctive from generally given outcomes? Not only can one look at how creative a product is, but they can also look at how well the individuals in the groups are able to work together. Would one member of the group overshadow the results in favor of his/her beliefs on how something should be done? These social dynamics and interplay are of interest to social psychology researchers and creativity researchers. How does the aspect of a group, in our case here, an intimate relationship, play into how creative they can be together?

This study is looking at the functioning of a group, particularly an intimate relationship, or close partnership. This definition includes romantic partners or close friends. The criteria stipulate the pair must have known each other for at least six months, providing a measure of stability and a shared intimate connection. In measuring this shared connection, the goal was to have an activity that would be fun for the individual and intriguing for both partners. Torrance outlined four dimensions that represent common

creativity: fluency, flexibility, originality, and elaboration. Fluency is the total number of ideas. Flexibility looks at how many different categories these ideas cover. Originality is how original a response is, compared to common responses. Elaboration is how much detail they put into it (Althuizen, Wierenga, & Rossiter, 2010). Another test, the Thinking Creatively with Sounds and Words (TCSW) by Torrance, Khatena, and Cunningham (1973), as they describe, is “a good imagination-stimulating creativity exercise” (Davis, 2004, p. 261). This test measures the originality of their response to various sounds played to them. The sounds are played multiple times encouraging more responses that are original each time (Davis, 2004). What differences exist if two people were taking this test or something similar? Paul Torrance (1970) investigated dyadic creativity in college students and 5-year olds. He found that college students were more original when they were instructed to piggyback off their partner’s ideas (Torrance, 1970).

Environmental factors contribute to a team’s creative performance. Creative production can be hindered in groups when task motivation drops or team conflicts arise (Schilpzand, Herold, & Shalley, 2011). Anderson and West (1998) proposed a framework to assess team climate consisting of four components, vision, participative safety, task orientation, and support for innovation. Participative safety measures how threatening of an environment the participants perceive it to be. An atmosphere of trust supports communication of new ideas, and negative evaluation hinders creativity. Troyer and Youngreen (2009) found that when a member of a group is given the task of

evaluating the other members' ideas, the group did not produce as many ideas (Troyer & Youngreen, 2009). External evaluation can also have a detrimental effect on creativity in the individual. Amabile (1979) found that women who knew they were being evaluated did poorly on an artistic measure of creativity. "the expectation of external evaluation will lead to decrements in creativity—was strongly supported by the artist-judges' ratings of creativity". Groups consisting of people who have intimate knowledge of each other may have an additional level of group dynamics.

Two people with intimate knowledge of one another have a deeper sense of connectedness and commitment compared to two random people. This intimacy shared between two people is specific to them in six ways: knowledge, caring, interdependence, mutuality, trust, and commitment (Miller & Perlman, 2008, p. 2). An intimate partnership may share knowledge only known between the two, show genuine care and concern for each other, adjust their lives in accordance with one's actions, hold a level of trust that one will not be betrayed, and commitment, a measure of investment one has in the relationship. Intimate partnerships include romantic couples and friendships mostly. Researchers studying close relationships, or intimate partnerships, propose theories to how creativity has existed in relationships over time.

Romantic involvement and creativity has a unique interplay. Griskevicius, Cialdini, and Kenrick (2006) argue creativity has its roots in evolutionary sexual selection. This research looked at what effects priming of different mating cues had on the sexually

selective trait, creativity. They found that men who had been primed for a short-term mate performed better on the Remote Association Test (RAT) than the control. Women did not show an increased creative output in the Short-term mate or “Potential” long-term mate; however, they performed equally well as the men in the “Committed” long-term mate condition. This study however, did not address creativity during courtship (Griskevicius et al., 2006). Förster, Epstude, and Özsel (2009) discuss two important processing styles to keep in mind. Those who focus on a more global scale opposed to a detail oriented or local processing style; in other words, creative and analytic thought respectively. Their studies concluded that priming different scenarios or concepts had an impact on an individual’s processing style. Studies support love enhances global processing and with it, creative thinking, and sex enhances local processing and analytic thinking. Creativity and analytic thought are thought of as unchanging, stable traits, but this research shows they can be changed by subtle cues in the environment. (Förster et al., 2009).

Measuring dyadic group creativity involves estimating individual creativity and its impact on a collective group creativity score. Looking at straight combination of individual scores into a dyad correlation, Triandis, Bass, Ewen, and Mikesell (1963) found 75% of the variance in the dyadic score was predicted by the input of the individuals. The interaction between the individuals is also important in computing a dyadic score. Sawyer and DeZutter (2009) investigated creative products from groups; their theory of distributed creativity predicts the creation of a creative product from

individuals based on four principles. The activity has an unpredictable outcome, no one knows how it is going to come out, there is moment-to-moment contingency, meaning previous actions affect the next action, the interactional effect, each action can be affected by all members of the group, and equal shared collaboration. They posit a group's collective creative product comes from the interaction of the group members and is more than the contribution of any one individual (Sawyer & DeZutter, 2009). Pirola-Merlo and Mann (2004) found team climate contributes to individual creativity; however, significant variance is still unaccounted for. They predict this unaccounted variance could be from within-group roles or individual differences in expertise and motivation. These additional individual factors of team climate, within-group roles, expertise, and motivation could have more predictability in intimate dyads. Hall and Williams (1966) demonstrated how established groups show higher performance on a problem-solving task than ad-hoc groups. The theory of shared cognition also provides evidence for intimate dyadic performance. First proposed by Wegner, Erber, and Raymond (1991), close couples possess transactive memory; a combination of information that is better than either one of the individual's memory alone. Couples participated in a memory task and showed better performance when structure on what to memorize was not given. When they provided structure on what to remember, the intimate pairs fared equally well as impromptu pairs (Wegner et al., 1991).

This study aims to determine the performance of close partnerships on a dyadic creativity task. Hypothesis 1 states intimate partnerships will do better than impromptu

pairs on the TCSW because of their inherent roles, expertise, motivation, and knowledge. Hypothesis 2 states team climate, specifically participative safety, will influence the dyads and predict higher creative scores on the TCSW.

CHAPTER II

METHOD

Participants

The sample consisted of 14 undergraduate students. They were recruited in couples to participate from various psychology and educational psychology courses. Potential participants took consent forms with them and returned them on the day of the study.

Instruments

To measure creativity, the Thinking Creatively with Sounds and Words subtest, Sounds and Images Forms IIA and IIB, was administered. It involves playing sounds with specific qualities to elicit imagery. Khatena and Torrance (1998) found the alternate forms reliability between the two forms to be .77. Sounds and Images subtest has validity coefficients ranging from .31 to .44 (Cooper, 1991). Davis (2004) notes that most validity coefficients of creativity tests range from .40 to .50 while many of them are lower (p. 233). The test does not serve as a highly reliable, valid measure of creativity, but rather, a thought provoking exercise to see your own creativity (Cooper, 1991).

To measure team climate after each taking of the TCSW, the participants individually filled out the participative safety subscale of the Team Climate Inventory Shortform by Strating and Nieboer (2009). The participants rated four questions on a 5-point response

scale and assessed to what extent they agreed with: (1) we have a "we are in it together" attitude; (2) people keep each other informed about work-related issues in the team; (3) people feel understood and accepted by each other; and (4) there are real attempts to share information throughout the team. The second question was omitted from the analysis due to the short duration of our creative group.

Procedure

The couples were assigned to two testing conditions: intimate first or intimate second. Couples in the first testing condition tested with their partner while couples assigned to be testing second were randomly assigned into impromptu pairs. The intimate and impromptu pairs took the TCSW Form IIA. Afterwards, they were given the team climate subscale. The intimate couples assigned to test second rejoined their partner, and the couples who tested first were randomly assigned into impromptu pairs. Both sets of couples were given the TCSW Form IIB. The couples rated their participative safety once more.

Analyses

Statistical analyses included correlations, paired samples *t* tests, and one way analysis of variance. The two forms of the TCSW were compared using a paired samples *t* test and correlated to measure performance. A one way analysis of variance was used to measure the two couple groups, true relationships (intimate) and impromptu pairs' performance on both forms of the TCSW. The first member's team climate score was correlated with

the second member's team climate score in all of the couples. A paired samples t test was used to test the difference in team climate between the two members.

CHAPTER III

RESULTS

Table 1 summarizes the means and standard deviations for Form IIA and Form IIB. The norm data from Khatena and Torrance (1998) report a group of undergraduate students ($N = 1452$) on Form IIA had a mean of 27.50 with a standard deviation of 6.95. On Form IIB they report a group of undergraduate students ($N = 1517$) had a mean of 32.14 with a standard deviation of 7.11. There was not a significant difference between the two forms ($t = .608, p = .554$). The performance on the two tests showed a substantial negative correlation ($r = -.866, p < .001$) indicating decreased performance on Form IIB than on Form IIA.

A one way analysis of variance to compare the couple groups on Form IIA was at the level of significance ($F = 6.440, p = .05$), see Figure 1. Comparing the couple groups on Form IIB was significant ($F = 21.844, p = .005$), see Figure 2.

Table 1. Descriptive Statistics for TCSWA and TCSWB by Involvement

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min	Max	Percentile Rank ^a
						Lower Bound	Upper Bound			
TCSWA	True Relationship	4	28.25	4.031	2.016	21.84	34.66	24	33	41
	Impromptu Relationship	3	20.33	4.163	2.404	9.99	30.68	17	25	14
	Total	7	24.86	5.640	2.132	19.64	30.07	17	33	35
TCSWB	True Relationship	3	28.67	3.215	1.856	20.68	36.65	25	31	32
	Impromptu Relationship	4	19.00	2.309	1.155	15.33	22.67	17	21	3
	Total	7	23.14	5.728	2.165	17.85	28.44	17	31	9

a. Percentile rank from (Khatena & Torrance, 1998)

Figure 1. Means Plot of TCSWA by Involvement

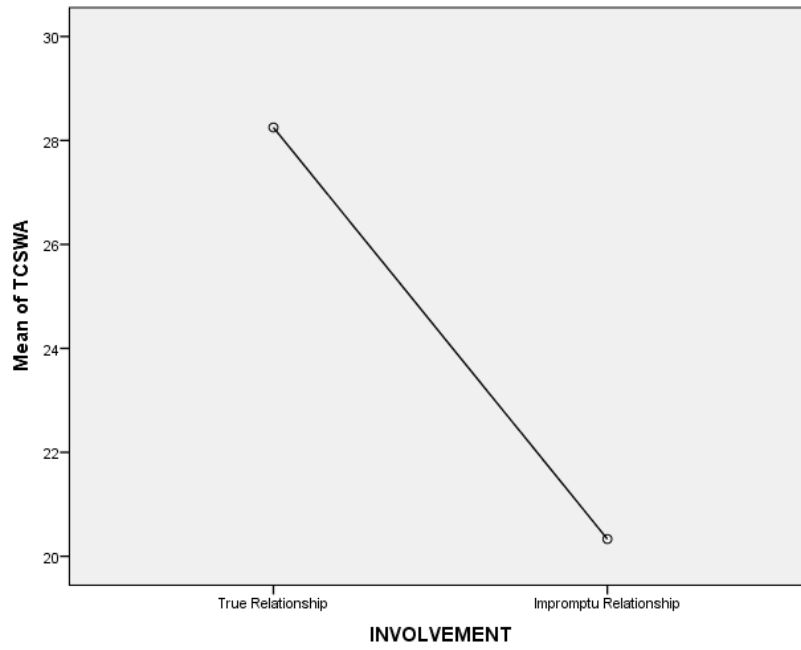
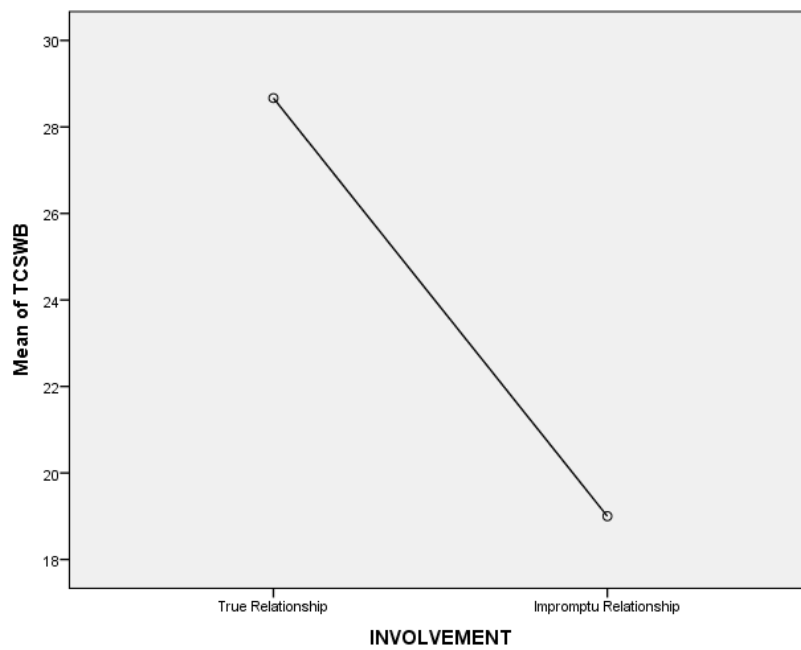


Figure 2. Means Plot of TCSWB by Involvement



Each participant answered the team climate questionnaire after each administration of the TCSW. One of these would have been with their partner while the other one was with an impromptu partner. The first reporting members of the dyad had a mean of 12.57 and a standard deviation of 3.25. The second reporting members of the dyad had a mean of 13.79 and a standard deviation of 1.31. A correlation between the first reporting member of the dyad to the second reporting member was not significant ($r = .139$, $p = .635$). A paired samples t test showed no difference between the first reporting member and the second ($t = -1.36$, $p = .196$).

CHAPTER IV

CONCLUSION

The results indicate a difference between the testing of TCSWA and TCSWB on the factor of involvement, intimate or impromptu relationships. The means of the two tests showed the two tests reliable in their two forms. The first group, TCSWA did significantly better than the second group, TCSWB. The TCSWA testing group had more intimate relationships than the TCSWB group. This suggests the intimate component of a relationship has an impact on creative performance. The measurement of team climate after the TCSW administrations did not reveal anything about the relationship between the two partners and their performance. If climate mattered in measuring performance on the TCSW, regardless of whom the dyad was constructed of, the first member's team climate score should have been different from the second member's climate score. No difference was found between the two members.

The use of team climate in the literature has been applied to corporate and organizational groups put together to create innovative ideas and products, brief examples (Anderson & West, 1998; Strating & Nieboer, 2009). The use of the team climate inventory involves groups that meet over multiple periods and utilizing multiple skills and creative areas. This application of creative ability disregards the notion of involvement and intimacy. One implication from this research shows the importance of groups containing members who know each other well. This could change the focus of activities in the workplace to

be more about team building and getting to know the people who are going to consist of your group. The subscale used in this study assesses participative safety, one factor thought to be important for creative production. This was not the case. The scale used here did not assess the essential requirements for a creative dyad. This could be due to our limited sample size. If the sample was bigger, participative safety may have played a role. I feel the construct of safety and cooperation is important in fostering creativity, and using the team climate participative safety subscale may not be the best way to analyze this construct. Future research needs to be done to investigate the role of cooperation in creative dyads. More research is also needed concerning the importance of intimate couples in generating creativity. One potential benefit research could show for an intimate couple is how they can be happier in their relationships. As embodied by the Sarnoff's book, *Intimate Creativity*, couples who are more creative together find a deeper fulfillment along with another medium to express their feelings and relieve their tensions. The use of creative exercises in intimate relationships could prove a useful tool in aiding and maintaining long, fulfilling relationships.

REFERENCES

- ALTHUIZEN, N., WIERENGA, B., & ROSSITER, J. (2010). The validity of two brief measures of creative ability. *Creativity Research Journal*, 22(1), 53-61. doi:10.1080/10400410903579577
- AMABILE, T. M. (1979). Effects of external evaluation on artistic creativity. *Journal of Personality and Social Psychology*, 37(2), 221-233. doi:10.1037/0022-3514.37.2.221
- AMABILE, T. M. (1983). The social psychology of creativity: A componential conceptualization. *Journal of Personality and Social Psychology*, 45(2), 357-376. doi:10.1037/0022-3514.45.2.357
- AMABILE, T. (1996). *Creativity in context : Update to the social psychology of creativity*. Boulder, CO.: Westview Press. Retrieved from <https://libcat.tamu.edu/vwebv/holdingsInfo?bibId=1558338>
- ANDERSON, N. R., & WEST, M. A. (1998). Measuring climate for work group innovation: Development and validation of the team climate inventory. *Journal of Organizational Behavior*, 19(3), 235. Retrieved from <http://libezproxy.tamu.edu:2048/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=13620022&site=ehost-live>
- COOPER, E. (1991). A critique of six measures for assessing creativity. *The Journal of Creative Behavior*, 25(3), 194-204. doi:10.1002/j.2162-6057.1991.tb01370.x
- DAVIS, G. A. (2004). *Creativity is forever* (5th ed.). Dubuque, IA: Kendall/Hunt Publishing Company.
- FÖRSTER, J., EPSTUDE, K., & ÖZELSEL, A. (2009). Why love has wings and sex has not: How reminders of love and sex influence creative and analytic thinking. *Personality and Social Psychology Bulletin*, 35(11), 1479-1491. doi:10.1177/0146167209342755
- GRISKEVICIUS, V., CIALDINI, R. B., & KENRICK, D. T. (2006). Peacocks, picasso, and parental investment: The effects of romantic motives on creativity. *Journal of Personality and Social Psychology*, 91(1), 63-76. doi:10.1037/0022-3514.91.1.63
- HALL, J., & WILLIAMS, M. S. (1966). A comparison of decision-making performances in established and ad hoc groups. *Journal of Personality and Social Psychology*, 3(2), 214-222. doi:10.1037/h0022896

- KHATENA, J., & TORRANCE, E. P. (1998). *Thinking creatively with sounds and words (TCSW): Norms-technical manual*. Bensenville, IL: Scholastic Testing Service.
- MILLER, R. S., & PERLMAN, D. (2008). *Intimate relationships* (5th ed.). New York, NY: McGraw-Hill Higher Education.
- PIROLA-MERLO, A., & LEON MANN. (2004). The relationship between individual creativity and team creativity: Aggregating across people and time. *Journal of Organizational Behavior*, 25(2, Special Issue: The Bright and Dark Sides of Individual and Group Innovation), pp. 235-257. Retrieved from <http://www.jstor.org.lib-ezproxy.tamu.edu:2048/stable/4093827>
- SARNOFF, I., & SARNOFF, S. (2002). *Intimate creativity: Partners in love and art*. University of Wisconsin Press.
- SAWYER, R. K., & DEZUTTER, S. (2009). Distributed creativity: How collective creations emerge from collaboration. *Psychology of Aesthetics, Creativity, and the Arts*, 3(2), 81-92. doi:10.1037/a0013282
- SCHILPZAND, M. C., HEROLD, D. M., & SHALLEY, C. E. (2011). Members' openness to experience and teams' creative performance. *Small Group Research*, 42(1), 55-76. Retrieved from <http://sgr.sagepub.com/content/42/1/55.abstract>
- STRATING, M., & NIEBOER, A. (2009). Psychometric test of the team climate inventory-short version investigated in dutch quality improvement teams. *BMC Health Services Research*, 9(1), 126. doi:10.1186/1472-6963-9-126
- TORRANCE, E. P. (1970). Influence of dyadic interaction on creative functioning. *Psychological Reports*, 26(2), 391-394. Retrieved from <http://search.proquest.com/docview/615688191/abstract/embedded/0MV8LOBT1NMPY6E?source=fedsrch>
- TORRANCE, E. P., KHATENA, J., & CUNNINGTON, B. F. (1973). *Thinking creatively with sounds and words*. Bensenville, IL: Scholastic Testing Service.
- TRIANDIS, H. C., BASS, A. R., EWEN, R. B., & MIKESELL, E. H. (1963). Team creativity as a function of the creativity of the members. *Journal of Applied Psychology*, 47(2), 104-110. doi:10.1037/h0048862
- TROYER, L., & YOUNGREEN, R. (2009). Conflict and creativity in groups. *Journal of Social Issues. Special Issue: Michele Marie Grossman Alexander*, 65(2), 409-427. doi:10.1111/j.1540-4560.2009.01606.x

WEGNER, D. M., ERBER, R., & RAYMOND, P. (1991). Transactive memory in close relationships. *Journal of Personality and Social Psychology*, *61*(6), 923-929.
doi:10.1037/0022-3514.61.6.923

CONTACT INFORMATION

Name: Trey William Armstrong

Professional Address: c/o Dr. Robert Woodward
Department of Educational Psychology
MS 4225
Texas A&M University
College Station, TX 77843

Email Address: treywarmstrong@gmail.com

Education: B.S., Psychology, Texas A&M University, May 2012
Summa Cum Laude
Honors Undergraduate Research Fellow