The impact of interpersonal factors on creativity

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Abstract This paper reviews current theories related to creativity, the techniques that have been used to measure it, and the implications of important, recent research on how creative actions might be affected by the relationship between the individual and the group. From this work, the possible ways in which creative actions may be influenced by organisational settings are examined, and a revised think-tank model is suggested that is consistent with maximising individuals' creative contributions.

Introduction
In many different areas of entrepreneurial activity, whether it is marketing or product development, the creative application of ideas is considered by many to be of critical importance. It is widely acknowledged that enhancing the creative capabilities of employees is necessary for overall commercial success and competitive advantage (Burnside, 1990; Shalley, 1995). Similarly, at the individual level, for entrepreneur and employee alike, creative individuals tend to be more productive and to enjoy greater job satisfaction (Amabile, 1983a). Many psychologists have also included creativity, within their discussions of human growth-related needs (e.g. Rank, 1932, 1936; Rogers, 1961; Maslow, 1962; White, 1959). Enhancing levels of creativity, then, offers benefits for the individual and the organisation as a whole (Amabile, 1983b; Ford, 1996; Oldham and Cummings, 1996).

Recent work suggests, however, that there may be negative attributes connected with creativity under many circumstances, and it may be that awareness of these, at some level, accounts for the relative rareness with which true creativity is practiced (Arndt et al., 1999). This, and other literature suggests that activities, such as creativity, that bolster self-esteem through the strengthening of one's sense of individuality, have to be balanced against our need to belong and have a sense of group connectedness, and the enhanced sense of security that goes along with that.

Despite this, there is clear evidence that although, in principle, managers consider the goal of designing a working environment that nurtures creative drives to be important, in practice very few take steps to operationalise this goal. For instance, in a recent survey, some 80 per cent of managers rated creativity as one of the most important elements in corporate success, yet less than 5 per cent of organisations actually put this emphasis into practice. Since, in both the USA and Europe, organisations are increasingly entrepreneurial or, in the case of larger businesses, “intrapreneurial”, this is surprising and may
well reflect a lack of understanding regarding how to implement changes to enhance creativity.

This paper examines the theories that help define what forces impact on individuals’ creative drives, and what differentiates a creative individual from their non-creative counterpart. Small group theories are also examined with the goal of laying the foundations for the development of a model of creativity suited to application within organisations. In order to better define creativity and how it is conceptualised, techniques of creativity measurement are also examined, and some of creativity’s different dimensions identified. This leads to deductions regarding ways in which creativity may be influenced by environmental influences in organisational settings, such as power position, and how it might be enhanced.

How creativity is conceptualised

Although there are many ways in which creativity has been conceptualised, possibly the most illuminating views of creativity are gained by examining how it has been measured.

When approaching the challenge of quantifying creativity, researchers have identified several different aspects of creative thought. This list is not exhaustive, but the dimensions of creativity that appear to have gained most research attention are:

- divergent thinking;
- attitudes and interests;
- personality traits;
- biographical inventories; and
- creative accomplishments.

Divergent thinking

Divergent thinking is the generation of varied ideas for solving a problem, or pursuing some other creative action. It is a collective term for a number of intellectual abilities that contribute to this, including: fluency, flexibility, originality, and elaboration. It is interesting to note that there is evidence that in group situations, a dissenting minority will tend to think divergently, whereas the majority will be convergent thinkers, feeling less of a need to think “around” the problem, perhaps (Nemeth, 1986). Guilford et al. designed a number of tests that measure divergent thinking, including alternate uses (Christensen et al., 1960), plot titles (Berger and Guilford, 1969) and consequences (Christensen et al., 1958). Unlike intelligence tests, questions designed to tap divergent thinking require many different answers. For instance, in the plot titles test, participants are asked to think of several imaginative titles for two stories, and in the alternative uses test, to think of different uses for an everyday object (typically, a brick or a shoe).
The Guilford model has had considerable impact on the measurement of the divergent thinking dimension of creativity, and strongly influenced the most widely used divergent-thinking test batteries: the Torrance tests (Torrance, 1974) and the Wallach-Kogan creativity tests (Wallach and Kogan, 1965).

Attitudes and interests
Several researchers have made the assumption that creativity may be identified by examination of an individual’s attitudes and interests, and that a creative person will favor creative activities and attitudes. One example of an inventory that uses this assumption is the “Group inventory for finding interests” in which participants are asked to indicate their level of interest in activities and characteristics by answering questions such as: “I like to write stories”; “I like to invent things”; “I have a sense of humor”; “I like to try new things” (Davis and Rimm, 1982; Rimm and Davis, 1976). Attitude and interest inventories are taken through a process of self-report, which generates several potential measurement problems, including: the lack of any reference against which to judge the individual’s “degree of liking”; the possibility of social desirability bias, such as a feeling that “being perceived by others as a writer might make me seem more interesting”, and; self-deception, for instance, “wanting to write stories” being reported as “liking to write stories”.

Holland and Baird (1968) generated their preconscious activity scale on the assumption that creative individuals tend to agree with statements such as: “I would like to be an inventor”; “I often daydream about unsolved problems”; and “If I had the necessary talent I would enjoy being a sculptor”. In addition to the problems outlined above, this suffers from the potential confound that “I would like to be an inventor” may seem glamorous and easily confused with “I would like others to perceive me as being an inventor” while having little to do with actually wanting or being able to invent! The individual may also have little experience of the reality of inventing for instance, and may simply like the idea of inventing.

Personality inventories
The use of personality inventories to identify creativity assumes that creativity results, not from cognitive traits, but from a set of personality factors. Gough’s (1979) “creative personality scale” requires participants to check adjectives that they think best describe themselves from a list containing items such as: self-confident, original, unconventional, individualistic, insightful and clever. Other personality inventories that have been used to identify creativity include: The “Sixteen personality factor questionnaire” (Cattell and Butcher, 1968); the “Omnibus personality inventory” (Heist and Yonge, 1968) and Gough’s (1957) “California psychological inventory” (Helson, 1965). As will be seen below in the discussion of the validity of creativity measurement techniques, there is little evidence that scores on personality inventories correlate with anything other than a very narrow definition of creativity; and thus, may not be useful for assessing creativity in any general sense.
Inventories of past experience

If present behavior follows from past experience then it follows that a biographical inventory may be useful in assessing an individual's level of creativity. A number of studies have attempted to show that the use of such inventories can predict creative skills in an organisational setting (Buel, 1965; Buel et al., 1966; McDermid, 1965; Michael and Colson, 1979; Owens et al., 1957). Some biographical inventories are specialised in nature, such as the alpha biographical inventory developed by National Aeronautics and Space Administration (NASA) scientists which focuses on innovative potential in scientific areas specifically. Another published inventory, that follows similar lines to the alpha inventory is Schaefer's (1970) biographical inventory. This has a broader application than the alpha inventory with several different dimensions of creativity being measured. This inventory has been validated by several studies, however, it may only tap a measure of creative potential, and cannot account for important variables, such as motivation, or factors that may prevent actualisation of this potential which may be situation specific (Anastasi and Schaefer, 1969; Schaefer, 1969; Schaefer and Anastasi, 1968).

Creative accomplishments

Widely used for assessment of creativity in adults, the rating of individuals' creative accomplishments assumes that creative people have produced creative products. Measurement techniques of creativity may incorporate tallies of individuals' creative accomplishments, but ultimately a subjective judgment has to be made regarding what products are creative and how creative an individual's accomplishments are. This is achieved by creative products being rated by specific others, such as supervisor or teacher ratings; rated by self-report, or rated by a more general audience, as is used in the judgment of eminence, for instance.

One approach to the measurement of creativity by the examination of creative products is to directly judge the results of specific creative challenges. A battery of tests developed by Foster (1971) assesses the results of a broad range of activities such as: sorting playing cards into sets of six that relate to each other; grouping numbers and symbols that equate; generating physical exercises without equipment; writing a story; and painting a picture of what is brought to mind by a particular piece of music. Using guidelines based on fluency, flexibility and originality, the results of the tests are ranked to generate an overall creativity score. Tests such as Foster’s are often aimed at assessing creativity in school children. Judges are usually subjective, and may be expert, non-expert or a team of either. The limitations of this kind of test procedure include the assessment of somewhat limited, and specific types of behavior. It may not be valid to extrapolate creativity to areas other than these or involving different cognitive processing styles. Tests such as Foster’s also depend on the subjective assessment of judges.
Ratings by others: studies have often incorporated a review of creative accomplishments by teachers, supervisors and peers. Reviewers often vary regarding their criteria for evaluating creativity, so this type of assessment is probably the most heterogeneous of the assessment techniques. In general, supervisor ratings tend to be used in organisational settings and have proved useful in identifying creative employees (Keller and Holland, 1978; Meer and Stein, 1955; Taylor, 1958). The usefulness of supervisor ratings is, perhaps, largely due to the job-specific knowledge that supervisors may have regarding ways in which creativity can be operationalised in a specific work environment. Buel (1965), for instance, had supervisors describe the most and least creative individuals under their supervision. From this information a list of creative behaviors was developed which supervisors could use as a checklist to help identify creative personnel. Aimed predominantly at assessing the creativity of scientists, Taylor et al. (1963) also used supervisor ratings on a number of dimensions including creativity, productivity, drive, integrity, desire for information, persistence and cooperation. It is not clear, however, that the dimensions of creativity measured in studies such as the above are equivalent.

Self-report: often used in educational and psychological research, the use of self-report generally involves each participant generating a list of their creative activities and achievements. The areas where creative achievement is considered may be broad, ranging from science and mathematics to literature and music. Holland and Nichols (1964) studied talent for the National Merit Scholarship Corporation, and focused on skills that are rare, demand commitment and are publicly recognised through publications or prizes. Illustrative items included: placed first, second or third in a regional science contest; exhibited or performed a work of art in public; had writing published; patented an invention; acted in a college play. Other such lists have been developed (see, for instance, Runco, 1986a) and the total creativity score is generally the sum of items checked. One problem with measurements of this kind is that the resultant score is likely to be confounded with level of skill. It is also unclear if and when a characteristic such as rarity of an action or idea relates to creativity level.

Many other measures of one or more dimensions of creativity have been developed, often for highly specific purposes; and some, for instance Mednick and Mednick’s (1967) “Remote associates test”, for specific dimensions of creativity. There are also various “problem-solving” approaches to gauging creativity, such as the “Dunker candle task”, that tap areas of creativity by posing a problem to which the solution is non-obvious.

Eminence
The Institute of Personality Assessment and Research (IPAR) has conducted considerable analysis into what characterises “eminent” practitioners of a potentially creative occupation as compared with their less creative colleagues.
Initial work by the IPAR group involved asking a panel of professors of architecture to nominate the 40 most creative architects in the USA. Of the 64 architects who scored the highest rankings, 40 accepted an invitation to spend a weekend at Berkeley along with eminent writers and creative mathematicians where they were studied and their characteristics documented. One of the arguments against the use of eminent people in the study of creativity is one of external validity, and whether creativity characteristics in the highly gifted are necessarily the same as those for creative individuals of lesser eminence (Hocevar and Batchelor, 1989). It is also unclear how to control for skill-level.

Validity in the measurement of creativity

Several specific problems involving validity have been identified regarding the measurement of creativity. It is not proposed to perform a complete review here, however, they can be broadly categorised as reliability, discriminant validity and nomological validity.

Reliability of creativity measurements generally involves consideration of two factors: internal consistency; and inter-rater reliability. Internal consistency requires consideration whenever items on a scale are summed to obtain a composite index, as is often the case in measuring creativity. Most studies report internal consistency indices of $>0.7$ and so would probably be considered acceptable. Inter-rater reliability, however, may be of greater concern. For instance, Golann (1963) and Knapp and Wulff (1963) produced evidence that when judging visual art products, experts and non-experts may widely disagree. Thus, the need for the researcher to decide who rates the creative products may have a major impact on the final scores. However, Amabile (1982) suggests that expertise does not have a major impact on ratings. Despite these possible confounding influences, a review by Hocevar and Batchelor (1989) suggests that inter-rater reliability generally exceeds 0.70.

Discriminant validity involves two separate questions: “is creativity distinguishable from other constructs?”; and “if creativity is multi-dimensional, are tests of creativity able to discriminate between them?” The answers to both these questions remain somewhat vague. Studies by Holland (1959), Wallen and Stevenson (1960) and Mullens (1964) found that measures of creativity correlated from 0.5 to 0.84 with such factors as speaking and writing skills, IQ, grades, an officership rating and a logical reasoning rating. Furthermore, Karlins et al. (1969) found that measures of creativity correlated from 0.79 to 0.95 with factors such as dependability, independence, adaptiveness, productivity and need to know. In the area of visual art, the confound may be even greater with creativity correlating some 0.89 with aesthetic quality (Brittain and Beittel, 1964). Csikszentmihalyi and Getzels (1970) found similar correlations along with a 0.76 correlation with technical skill.
In answer to the second question, there is considerable evidence that dimensions of creativity such as ideational fluency are very difficult to discriminate from, for instance, flexibility and originality (Foster, 1971). Also, divergent thinking tests were studied by Hocevar (1979a, b) and Hocevar and Michael (1979), who found them of questionable discriminant validity.

Nomological validity is of particular concern, and is achieved when different approaches to measurement of a particular construct or group of highly correlated constructs yield similar results. The variables under consideration may then be considered to be logically related to each other. Unfortunately, many studies that have examined the nomological validity of creativity measures have found that although scores based on the same method were related, scores based on different methods were not (Taylor et al., 1963; Davis and Belcher, 1971; Ellison, 1973; Gough, 1979). There are studies that have found significant correlations between different approaches to measuring creativity (for instance, Bull and Davis, 1982; Davis and Rimm, 1982), however, the correlation is seldom higher than 0.3, with the two alternative creative measures explaining less than 10 per cent of the variance.

The nature of creativity
It is clear from examining the ways in which creativity is measured that its precise definition may depend on the characteristics of the instrument being used to measure it, and with none of the measures taking account of environmental issues. This represents a particular problem in considering creativity in organisational settings since there are many different areas and ways in which creativity may occur and many different situational influences that may impact on the individual, such as group norms, peer pressures and power structure. A creative measure that is predictive of the artistic or verbal creativity needed for the advertising department, for instance, may not predict the creativity needed for new product design, and both departments may impose different situational forces on potentially creative individuals. However, when considering the measurement techniques available along with the various theoretical models related to creativity there are several common elements that can be identified.

Motivation
Several authors have noted that motivation is an essential precondition for creative action (see, for instance, Shaw, 1994), although the origin of the motivating force may differ from one creative act to another. Crutchfield (1962), for instance, suggested that not all creative acts are motivated in the same way, but can be broadly categorised into extrinsic, or “ego-involved” and intrinsic, or “task-involved” creative acts. This distinction was emphasised by Amabile (1996), and is broadly equivalent to Heinzen’s (1994) two categories of creativity: reactive and proactive. Reactive creativity occurs as a function of
some external stimulus, and is often goal oriented (e.g. resulting, perhaps, in the relatively higher level of technological innovation during times of war). This problem-solving goal is associated with a deductive reasoning process which will depend for its success on close consideration and analysis of the available facts. This suggests an analytical cognitive processing style will result in successful reactive problem solving.

Proactive creativity, on the other hand, is internally driven and produces results that may be less directly related to the solution of a particular problem. The products of this cognitive style may be more revolutionary than evolutionary, and may not always be directly applicable to an immediately identifiable need. Shaw (1994) describes this processing style, whereby widely different approaches are considered, as high in “ideational fluency”. While problem solving and creativity are not necessarily equivalent, in the domain of entrepreneurship the creative solution to problems is often a key element in success.

In an organisational context, it is also important to note that the design of an environment conducive to creativity may be as much to do with eliminating sources of demotivation as it is to do with actively sponsoring creative thought. Sources of demotivation may take the form of a generalised fear of failure, the sense of a lack of support from those higher up the hierarchical structure regarding innovation, or a lack of resources necessary to actively pursue innovative thoughts and actions.

Fear of isolation
Another characteristic of creativity that may lead to de-motivation can be extrapolated from the results of recent studies applying “terror management theory” to creativity (Greenberg et al., 1997). Terror management theory suggests that when death is made salient, individuals seek greater attachment to the group or groups of which they are part. (Greenberg et al., 1986; Soloman et al., 1991). This creates a potential conflict because of the established notion that creativity creates tension, and therefore, a tendency to distance oneself from the group. The authors hypothesized and found that mortality salience does indeed tend to reduce creative tendencies. The results of this and other studies strongly suggest that creativity is essentially an individual act and serves to emphasise the individual characteristics of the creator. However, in thinking and acting creatively, the emphasising of individuating characteristics may cause a tension between that individual and the need for connectedness with the group.

Access to information
While motivation is often considered critical to creative performance, it is by no means the only prerequisite. Many authors have pointed out that access to information (for instance, by recall) is also necessary (see, for instance, Richards, 1994). Along with the basic ability to recall information pertinent to the solution of a problem, or the generation of an innovative idea, the ability to extract useful ideas from different, sometimes non-obvious sources or
disciplines is also an asset. This “ideational fluency” enables the individual to retrieve more information regarding a creative task because of the facility to access from broader-ranging areas of recall. It has also been shown that individuals tend to recall information that is mood-congruent, and that more information tends to be recalled, and memorised, while in a positive mood (possibly because more information is encoded, or memorised, in a positive mood). Also, Wright and Walton (2002) found that creativity was positively related to psychological well-being. This is in contrast with much earlier work on creativity, that tended to suggest a positive correlation between creativity and bipolar and other psychological disorders (see, for instance, Milman, 1995).

Although having potential to access information is an important factor in establishing the potential for creativity, having the ability and motivation to process all available information is also critical, and may be subject to many influences, including environmental factors. For instance, Ford and Kruglanski (1995) suggested a tendency for individuals high in a “need for closure” to “seize” on certain facts pertaining to a problem solution, and “freeze” the pursuit of other possible solutions. The need for closure may be induced by several influences including stress or an urgency for a solution, both of which suggest that proactive creativity may be thwarted more readily than reactive, since the proactive style is more dependent on ideational fluency. Ford and Kruglanski’s “need for closure” can also occur as a consequence of highly defined task definitions and time lines that can be characteristic of a rigid hierarchical organisational structure and could have important implications for entrepreneurship.

Implications for organisations
The theories outlined above have implications for the way in which an organisation is structured. Entrepreneurial businesses often start life as innovative and minimal in “unnecessary” structure. Innovation may be the very raison d'être of the organisation itself or paucity of resources may demand innovative solutions to marketing or other demands. However, as the fledgling organisation grows, processes are often set in place which are counterproductive to the creative process and to communication in general. Indeed, it has been shown that a significant number of entrepreneurial groups evolve to adopt even more rigid organisational structures than larger, more established organisations.

Inhibiting factors to creativity
Status and power within an organisational structure are frequently associated with degree of control over individuals’ environments. This has implications for the difference in cognitive processes between high and low power-position individuals. It is an underlying human motivation to seek predictability in one’s environment, which implies a degree of control, and therefore power
(Jones and Davis, 1965; Kelley, 1967). Pitman has shown that reducing an individual’s perceived level of control can provide the motivation to increase care and deliberation with which information is processed (Pittman and Pittman, 1979; Pittman and D’Agostino, 1989). Fiske (1993) extended this argument to suggest that those relatively low in social power are likely to adopt a more careful (and effortful) processing style, suggesting that lower power-position should equate to a more reactive creative style with a higher degree of analysis of factual information, and relatively less “ideational fluency”. It has been suggested that this kind of careful and analytical processing style may not be conducive to any form of creativity because of the restricted nature of information accessed and the relatively rigid way in which it is processed (Mednick, 1962; Csikszentmihalyi, 1988). Lower power position may also equate with reduced motivation to process and reduced information access for other reasons, including negative affect. In terms of organisational structure then, there is a clear theoretical basis to suggest that rigid structures inhibit creative cognitive processes.

These theories suggest some ways in which organisations can both establish and maintain a high creative priority:

- Keep organisational structure to a minimum. The plan/organise/direct/ control management model with which many managers were imbued from the 1960s through the 1980s is the antithesis of this and may have done much to quash overall organisational creativity.
- Hire from varied backgrounds. At the group level, accessing maximum information may involve interdisciplinary input to problem solutions.
- Legitimize creativity. At all levels of the organisation, innovation should be encouraged. Eliminate any demotivating influences on creativity and show a positive role model for creativity at all organisational levels.
- Creative people are often made to feel like members of an “out-group”. This can lead to feelings of guilt about exercising creative actions and a general tendency to avoid them. This can be minimised by encouraging an “equal but different” relationship with particularly creative team members, and also emphasising how their creativity will benefit the organisation overall.
- Reward creative actions. There is evidence, however, that this is more effectively achieved through encouragement than, say, financial reward, since the motivation to create is more effectively proactive than reactive.
- Maximise communications across all departmental and hierarchical boundaries.
- Consider the whole environment when considering an individual’s creative potential. Certain sources of stress from both outside and within the organisation are likely to impair creativity.
At the group level, access to information equates to communication between individuals as well as individual access to information. Therefore, activities such as think tank sessions and brainstorming are useful, although there is evidence that individuals may exhibit greater creativity, by coming up with more unusual uses for an object, for instance, when working alone rather than in a group (Stroebe and Dielh, 1994).

Think tank and brainstorming sessions are undoubtedly valuable and need to be organised with creative flare:

- Develop a rotational think tank. Choose your initial think tank members for their potential creativity, but replace one or two members with new ones at each new session. This helps prevent the same ideational pathways being retraced at each evolution of a problem solution and introduces new sources of information.

- Be imaginative with the think tank venue. The corporate conference room is unlikely to be the most stimulating of venues. Different environments may stimulate the recall and application of different information (and therefore, problem solutions). Interesting environments will help develop a positive attitude and expectation towards the think tank sessions and potential outcomes.

- Keep think tank sessions upbeat. A positive mood maximises creative potential, therefore deal with anything negative swiftly and move on to things more positive.

- Incorporate some light physical exercise. It is thought that communication between the hemispheres of the brain is important for creative thought. These neural pathways (the corpus callosum) have been found to be more conducive to information transfer while something repetitive and undemanding, such as walking, is being performed.

- Encourage the views of dissenting minorities or individuals in order to increase divergent thought-processing tendencies.

- Emphasize that expressing an opinion different from that of other group members is a positive contribution, even if it is counter-normative and goes against the majority view. This helps to avoid “group think” and bolsters the self-esteem of more creative team members.

- Emphasize the benefits to the whole team from each member’s contribution, whether or not it is in accord with the majority view.

- Circulate an agenda to members ahead of time to enable individual solutions/suggestions to be generated prior to the development of group ones.

Discussion

It appears that research into creativity has tended to suffer from the “fundamental attribution error” in that creativity is searched for and measured
solely within the individual with little concern for environmental or situational influences. Such factors might have a major impact on creativity through their manipulation of motivation or affect, for instance. More recently, the need for group membership, or sense of connectedness, has been shown to impact on creativity. The clear implication is that factors such as group norms may be important influences and may affect motivation when the expected products of creativity are to the benefit of the individual, rather than the group as a whole.

Implications for entrepreneurial creativity are considerable. The creative goals of the entrepreneur may, initially, be quite clearly defined for individual benefit. In the course of corporate development, however, possibly without the awareness of the entrepreneur, this may change, such that creative acts may become more for the benefit of the organisation itself. A business built around a particular invention may also involve creativity in other areas, such as advertising. As the business evolves, such functions may still involve the entrepreneur but they may now have the organisation in mind rather than individual benefit. Unless the individual feels support for these creative acts, both within and outside the organisation, there may be a demotivating influence that will reduce the quality of the ultimate creative product.

Also, as a function of “going it alone” an entrepreneur may feel distanced or isolated from society in a general sense, or from a particular group with whom they were once involved; someone leaving longstanding employment to start a business, for example. This sense of isolation may cause a disinclination to be creative, since that further tends to distance the individual. This has been described as “guilt” resulting from indulging in creativity viewed as a counter-normative pursuit (Arndt et al., 1999). As noted above, once entrepreneurs build a business that is past the fledgling stage there is a significant tendency to put more rigid structures in place than those found even in more mature organisations. One possible explanation for this is a desire to redress the sense of isolation that comes from the counter-normative act of creating, or even being entrepreneurial (and thus, different) per se by putting hyper-normative structures in place.

Group norms are not, of course, necessarily always negative to creativity. Theoretically, at any rate, what is important is whether, in the context of normative influences, individuals feel they are in an environment where creativity is accepted or whether creativity might cause them to feel “unusual”. The creative individual may still feel able to express their creativity even when it is not normative, but this tendency may be reduced under situations of perceived threat, for instance.

Conclusion
There are still many gaps in our knowledge of what factors influence the many dimensions of creativity, and we appear to be some way from a universal theory. In particular, the paucity of research regarding how creativity is
affected by sociological and social-psychological factors such as social norms and group influences leaves many questions unanswered regarding the environment/individual interface. As discussed above, these factors have particular implications for entrepreneurial creativity, which may be affected differently at different stages of organisational evolution.

Long overdue consideration of the impact on creativity of normative and interpersonal influences may help explain several anomalies observable in some creative individuals and creative acts. For instance, there are those who produce one creative product, but nothing, or little, more (from the literary world, J. D. Salenger, for example). This is also observable in entrepreneurial organisations that cease to be innovative after an initial innovative product. Was the product an aberration of the individual and their environment at that one (possibly irreproducible) moment? In a modified environment, or one with different norms, would such individuals continue to be creatively productive?

A further, not unrelated, area that requires study is how interpersonal influences influence creativity within the small group or team. When, for instance, does a team produce more creative products than an individual? It is interesting to consider the space race of the 1970s and note that the very successful Russian effort has been reported to be largely the product of one man (Sergei P. Korolev). When he died the impact on future Soviet space missions was dramatic. The American effort was often a step or two behind, but did not seem to suffer such a significant set back due to the loss of a team member. Were the norms in two environments significantly different such as to make group innovation acceptable within the (individualist) US team but not in the (collectivist) Soviet team?

Research in this area has many practical implications. For instance: is group creativity, such as produced by brainstorming, or the establishment of “innovative teams” actually a myth; are resources for innovation best allocated to one or two creative individuals?

It is clear that we are unable to answer such questions as these without further knowledge of how creativity is influenced by interactions between individuals and both localised groups and broader social norms. Until we can do so we are unable to suggest how performing creative acts can be perceived as “socially acceptable” to potential creators, and be embarked on guilt-free, thus unlocking creative potential that maximises benefits at societal, organisational and individual levels.

References
Amabile, T.M. (1983b), “Within you, without you; the social psychology of creativity, and beyond”, in Runco, M. and Albert, R. (Eds), Theories of Creativity, Sage, Newbury Park, CA.


Cattell, R.B. and Butcher, H.J. (1968), *The Prediction of Achievement and Creativity*, Bobbs-Merrill, Indianapolis, IN.

Christensen, P.R., Merrifield, P.R. and Guilford, J.P. (1958), *Consequences*, Sheridan Psychological Services, Beverley Hills, CA.

Christensen, P.R., Guilford, J.P., Merrifield, P.R. and Wilson, R.C. (1960), *Alternate Uses*, Sheridan Psychological Services, Beverley Hills, CA.


Heist, P. and Yonge, G. (1968), Manual for the Omnibus Personality Inventory – Form E, The Psychological Corporation, New York, NY.


Rogers, C.R. (1961), On Becoming a Person, Houghton Mifflin, Boston, MA.


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