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YOUNG ADULTS' PERCEPTIONS AND INTERACTIONS WITH CREATIVITY ENHANCING ENVIRONMENTS

A dissertation submitted
in partial fulfilment of the requirements
for the degree of Master of Arts in Education

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ABSTRACT

The purpose of this study was to gain insight into the environments young adults find conducive to creative endeavours. Adolescents, parents, teachers, educational systems, and society as a whole would benefit from a deeper understanding of how creative individuals interact with, shape and seek out environments to fulfil their various creative needs.

The present project was guided by an interactionist model of creative behaviour (Woodman & Schoenfeldt, 1989) which takes into account the four major strands of inquiry involved in creativity research and provides a conceptual framework for their holistic study. The focus of the present study was primarily on environmental determinants of creativity as perceived by the participants; however, some consideration was given to the remaining three areas of creative research, namely, person, process, and product.

To this end, a qualitative study employing grounded theory methods was adopted. The research design adheres most closely to the social constructionist interpretation and application of the grounded theory method as outlined by Charmaz (1990).

Thirteen creative seniors selected from a local city high school were interviewed. Insights from these interviews are divided into three sections. First, in section I, a method for identifying creative individuals within a high school is developed and discussed. In section II, an environmental process model of creativity is illustrated. Last, in section III, implications for educational systems as well as creativity research in general, are examined and practical avenues of action are suggested.

ACKNOWLEDGEMENTS

To my wife and parents thank you for all your patience, understanding and encouragement. I often feel that given the opportunities you have provided for me, it would take an awful lot of effort on my part to fail; some higher power knows I've tried... And yet, here we are, I must assume, spiritus mundi, the collective unconscious, guides. Brother Paul you're O.K. too.

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To our exceptional faculty members, kudos, you have each contributed tangible and intangible, however, no less crucial elements to the successful completion of this endeavour.

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To All connected to this enterprise may good karma follow: We are all artists, poets, adhering to a variety of guidelines and traditions, yet each striving to illuminate that state which we call the human condition... **Maintes et maintes fois MERCI!**

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

YOUNG ADULTS' PERCEPTIONS AND INTERACTIONS WITH CREATIVITY ENHANCING ENVIRONMENTS

CHAPTER ONE: INTRODUCTION

We Poets in our youth begin in gladness;
But thereof comes in the end despondency and madness.
-Wordsworth (as cited in Runco & Shaw, 1994, p. 45)

To study creativity by focussing on the individual alone is like trying to understand how an apple tree produces fruit by looking only at the tree and ignoring the sun and soil that support its life. It is a step forward, but not nearly enough... (Csikszentmihalyi, 1990, p. 202)

Rationale for the study

When students are taught and their achievements are assessed in a manner that values their creative talents, their academic performance actually improves (Sternberg, Ferrari, Clinkenbeard, & Grigorenko, 1996). In fact, research suggests that creativity not only necessitates motivation, but may also be a source of it (Sternberg & Lubart, 1999). Perhaps even more promising, recent research suggests that if given an opportunity to be creative, students might choose otherwise than to become disengaged from school instruction; instead they may actually find their interest captured (Sternberg & Lubart, 1999). Yet sadly, in the past, schools have not fared well in this regard (Isaksen, 1987; Passow, 1977; Sternberg & Lubert, 1995; Torrance, 1977). The consequences at the societal level can be drastic. However, on a personal level they may be even more devastating. Anecdotal research by Polaine (1995) suggests that an adolescent whose creativity has been previously crushed responds by humiliating and crushing perceived creative growth in others. But even more tragic, other gifted teenagers manifest their frustrated creative talents in much more extreme fashion, with suicide or attempted suicide (Leroux, 1986; Willings & Arsenault, 1986).

If parents, educators, and society in general wish to better understand the many factors which contribute to creativity enhancing environments, then adolescents themselves must be given the opportunity to offer their constructive voice. Their voice must be heard in order to inform not only the nature of creative environments, and the school system, along with the creative and potentially creative students who operate within its halls, but also creativity research in general, and ultimately society at large.

Moreover, we must begin to view creativity as the current literature suggests, as not merely the spark that arises mysteriously from the mind of genius, but as the product that arises as a result of a considerable amount of social influence, for example, teachers (Torrance, 1981a, b), mentors (Prentky, 1989; Simonton, 1978, 1984; Torrance, 1983; Zuckerman, 1979/1983), parents (Dacey, 1989a; Harrington, Block & Block, 1987), peers (Polaine, 1995; Smith & Carlsson, 1985; Ross, 1976), and the sociopolitical context (Csikszentmihalyi, 1990; Feldman, Csikszentmihalyi, & Gardner, 1994). Once creativity is, perhaps less romantically viewed in this fashion, the relationship between a student and one's school and social community is transformed into one where considerable reciprocal responsibility emerges for the successful completion of creative endeavours (Montuori & Purser, 1995). As Feldman (1999) states, "the enduring belief that great creativity is developed alone, without assistance from teachers, mentors, peers and intimate groups is largely a myth." (p. 176). Yet, somewhat surprisingly, as Woodman and Schoenfeldt (1989) point out, the social psychology of creativity is probably theoretically less well developed than either personality or cognitive styles perspectives.

Equally ironic, institutions of considerable environmental influence, such as, schools, are often cited as having a negative impact on creativity (Isaksen, 1987; Passow, 1977; Sternberg &

Lubert, 1995; Torrance, 1977). Perhaps, this occurs or is aggravated in part, by the fact that creativity findings are wrought with contradictions and paradoxes (Cropley, 1997). For instance, where one finds creativity is squelched by external motivators (Amabile, 1983) others find, appropriately applied, they may actually encourage creativity (Eisenberger & Armeli, 1997; Harrington, 1975).

Although considerable research has examined creativity in the past, creativity still lags far behind most mainstream topics in psychology (Feldman, 1999). Furthermore, much of the existing creativity research has been conducted in one of four strands: person, process, product, or press (Barron, 1988; Brown, 1989; Cropley, 1997; Davis, 1992 chap 3; Isaksen 1987; Rhodes, 1961/1987). Needed are studies aimed at integrating and informing the many distinct academic fields of inquiry involved in creativity research (Cropley, 1997). Harrington (1990) draws our attention to the fact that, although these diverse lines of creativity research have proven fruitful in their own, terms they "have generally not connected with one another in mutually illuminating ways" (p. 145).

In order to more fully understand creativity we must move "from an exclusive focus on the individual to a systemic perspective that includes the social and cultural context in which the 'creative' person operates" (Csikszentmihalyi, 1990, p. 190). Situation, organism, and the unfolding interaction between the two must be understood to explain the creative organism in its environment (Woodman & Schoenfeldt, 1989). Studies that incorporate environmental perspectives with more traditional trait and process research are needed (Helson, 1988; Mumford & Gustafson, 1988). "Human creativity would benefit from careful attention to the processes by which creatively active people choose and shape their own environments in order to facilitate

their creative growth and activity"(Harrington, 1990, p. 161).

Defining creativity

The concept of creativity has been defined in numerous ways by many researchers (Davis, 1992; Parkhurst, 1999). Davis (1992) states, "... there are as many definitions, theories, and ideas about creativity as there are people who have set their ideas on paper..." (p. 38). However, it is conventional to discuss creativity in terms of either the creative person, product, process or press (Davis, 1992). Several definitions of creativity falling under each of the four aforementioned categories are reviewed in Chapter II. Nevertheless, for the purposes of this study, creativity will be defined as "the ability or quality displayed when solving hitherto unsolved problems, when developing novel solutions to problems others have solved differently, or when developing original or novel (at least to the originator) products" (Parkhurst, 1999, p. 18). Furthermore, creative persons will be defined as possessing a combination of the following qualities: having lots of ideas, many different ideas, unique ideas, curiosity, problem-solving ability and inventiveness (Hocevar, 1981).

Conceptual Framework

Overwhelmingly, the current literature is calling for a holistic examination of creativity within a conceptual framework capable of integrating the disparate strands of past creativity research (e.g., Cropley, 1997; Csikszentmihalyi, 1988, 1990; Harrington, 1990; Hunsaker, 1992; Montuori & Purser, 1995; Woodman & Schoenfeldt, 1989). As Feldman (1999) states, "the scope of creativity research is therefore exceptionally broad and the need for ways to integrate the findings of disparate researchers' work into an overall framework exceptionally important" (p. 172). To this end, the present project is guided by the interactionist model (Woodman &

Schoenfeldt, 1989), as complemented by the ecological perspective (Harrington, 1990). Together, they account for the four major strands of inquiry and provide a robust conceptual framework for their holistic study. The interactionist model enables the study of creative environments as they are informed by their various interactions with the personality traits, processes, and products of the individuals involved.

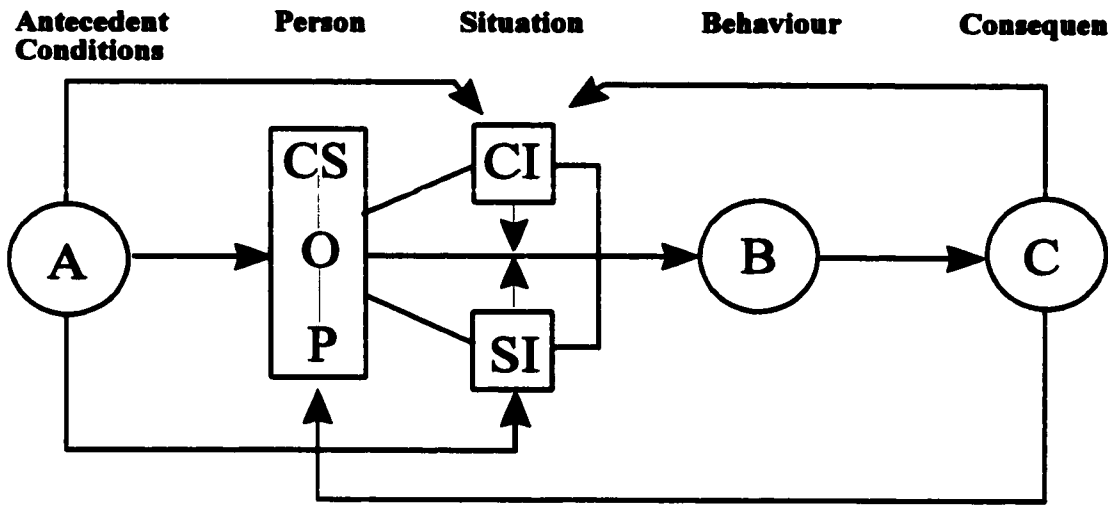
Interactionist Model

Explaining complex human behaviours within equally complex social settings, as creativity research requires us to do, necessitates an integrative, robust conceptual framework capable of bringing together what is, and what is to be, known. The interactionist model allows for the inclusion of a wide variety of creativity's branches by addressing *antecedent conditions* (A), *creative behaviour* (B), *consequences* (C), the *organism* [person] (O), as well as, *cognitive styles/abilities* (CS), *personality dimensions/traits* (P), *contextual influences* (CI), and *social influences* (SI). See Figure 1 for the interactionist model.

As the diagram depicts, the interactive process leading to creative behaviour is complex. Many factors must converge in order for creative behaviour to result. For example, antecedent conditions contribute to a person's predisposition to various cognitive and personality characteristics, as well as to an overall gestalt. Together these personality and cognitive dimensions facilitate creative expression. As well, antecedent conditions may have an effect on the contextual and social factors which also influence one's creative behaviour. As creative behaviours are exhibited their outcomes further interact with and influence one's "person" and the situation.

This model not only holistically examines the four P's of creativity research, but also

Figure 1. An interactionist model of creative behaviour (Woodman & Schoenfeldt, 1989 p.81)



A = Antecedent Conditions

Examples:
past reinforcement history;
early socialization
biographical variables--sex,
family position, birth order

B = Creative Behaviour

C = Consequences

O = "Organism" (person)

Gestalt of attitudes; values; intentions to behave; motivational orientations; and individual differences.

CS = Cognitive Style/Abilities

Examples:
Cognitive complexity
Divergent thinking
Verbal/ideational fluency
Problem-solving styles/approaches
Perceptual openess
Field independence/dependence

P = Personality Dimensions/Traits

Examples:
Locus of control
Dogmatism
Autonomy
Self-esteem
Narcissism
Intuition

CI = Contextual Influences

Examples:
Physical environment
Culture
Group/organization "climate"
Task and time restraints

SI = Social Influences

Examples:
Social facilitation
Evaluation expectation
Rewards/punishments
Role modelling

incorporates the social and environmental influences proposed by Amabile's (1983) work (Woodman & Schoenfeldt, 1989). As well, it offers a theoretical base which may shed light on some of the apparent paradoxes contained within creative inquiry. As Woodman and Schoenfeldt (1989) explain:

> [The] potential advantage of the interactionist model of creative behavior might be its ability to integrate these diverse perspectives, each of which captures variables of some explanatory power. Combining personality, cognitive, and social psychology explanations of individual differences in creative behavior could serve to improve our ability to understand creative persons, processes, and products (p. 80).

Recalling the importance of the individual in relation to the many factors outlined by the interactionist model, recent research by Csikszentmihalyi (1988, 1990), and Feldman, Csikszentmihalyi, and Gardner (1994) suggests the domain and field in which creative acts occur are also of equal (or greater) importance to creative investigations. The ecological perspective which follows is quite compatible with this view point (Harrington, 1990) by also considering domain and field influences.

Ecological Perspective

In 1990, Harrington proposed the ecological perspective for examining human creativity, an approach which might help connect creative processes, people, and environments more effectively. In congruence with the interactionist model, the ecological perspective also attempts to relate the four strands of creativity research. This perspective stresses that "in the process of discovering, creating, or adding to an original act's potential value, a social system enters into

and becomes an integral part of the creative process"(p. 147).

Harrington (1990) explains how the personal computer, for instance, was not created by one person, nor was it created by the concerted effort of a group of people; rather, it was created by the cumulative and often informally coordinated actions of many talented and motivated people. This observation is not a new one. In 1931, Rossman (1964) used the invention of the steamship to illustrate this very point. These and other examples typify a *collective social creativity*, complete with innovators, transformers, assimilators, problem-solvers, and sellers; or if you will, "creativity is often distributed over multiple processes, times, places, and people...social creativity does not 'reside' in any single cognitive or personality process..."(Harrington, 1990, p. 149). One must always consider the massive and impersonal influences of the Zeitgeist, the spirit of the times, which roughly fall into four categories: cultural factors, societal factors, economic factors and political factors (Simonton, 1999).

Moreover, within this perspective, individuals, when faced by a hostile ecological setting, may either modify their own behaviour, modify their "habitat", or seek a more supportive one. This is of key importance to the school system where environments that threaten some individuals may promote the development of others (Harrington, 1990). For instance, the need for autonomy may be advantageous in isolated working conditions, yet unconstructive in situations requiring high levels of interaction or collaboration. Similarly, and perhaps the case for some adolescents, the desire to defy authority may foster creativity in ecosystems that discourage creativity, yet may actually inhibit creativity in ecosystems that explicitly encourage or demand it.

Furthermore, the interactionist model when complemented by the ecological perspective

may allow for a more robust integrative framework which takes into account what is currently known about creativity. As Harrington states, " ... I am not ... displac[ing] the individual as a crucial unit of analysis ... I am however, attempting to add the ecosystem as a unit of analysis essential to a full understanding of creatively active individuals and their work" (p. 154). By bringing to the fore the various ecological influences downplayed by the interactionist model, this combination may constitute a more robust, double-foci, interactionist-ecological approach. In the present study I refer to this approach as simply the interactionist model, although it will no less consist of both micro and macro level perspectives.

With its capacity not only to integrate the four strands of past creativity research, but also to assimilate more recent and complex research which account for motivational, field and evolving systems influences, the proposed interactionist model as complemented by the ecological approach, may be a meaningful response to Montuori and Pursuer's (1995) call for an "inclusive, systemic approach, which addresses both intrapsychic and person-centered concerns and social, historical, and environmental factors" (p. 105). By examining an individual in conjunction with several interactional forces such as personality dimensions/traits, contextual influences, and social influences, as well as considering the interdependent actions of the field or ecology in which an organism operates, this study may shed light on old questions within the sometimes paradoxical world of creativity.

Purpose of the study

The purpose of the present study is to gain insight into the environments young adults find conducive to creative endeavours. Adolescents, parents, teachers, educational systems, and society as a whole would benefit from a deeper understanding of how creative individuals

interact with, shape, and seek out environments to fulfil their various creative needs. By conducting a qualitative, introspective study this project attempts to enrich creativity research with the informative voice of creative young adults. The following research questions have helped guide this study:

1. Where do young adults perceive they are being asked to be creative?
2. How have they actively sought outlets or environments, in order to satisfy their need to be creative?
3. How do they perceive that the interaction between their personality characteristics and various environments has contributed to their creativity?
4. How has their familial experience affected their creativity?
5. In what areas has the school facilitated or discouraged their creativity?
6. What other perceived factors have positively or negatively affected their creativity?

The goal of the present study is to inform the existing registry of environmental factors which affect creativity by examining social contexts as they operate and are mediated through their complex interplay with the various personality characteristics, processes and products of the individuals involved. This qualitative study was conducted with young adults, enrolled in at least one OAC (Ontario Academic Credit; note: senior year of high school in the academic stream) course, who have demonstrated creative ability through their actions and products throughout their academic careers. Examining creative environments as they interact with the other strands of creativity research may shed light on the seemingly contradictory findings of past research permitting its more fruitful application within our school systems.

Organization of the study

The study is organized and presented in five chapters corresponding to the following main components: Introduction; Literature Review; Methodology; Results; Discussion and Conclusion. Specifically, in Chapter II the current creativity literature is reviewed. It is divided into four parts, person, process, press (environment), and product, which reflects the four traditional areas of inquiry within creativity research.

In Chapter III, the methodology employed by the present study is outlined. Discussed are the present author's ontological and epistemological assumptions, data collection tools, participant selection strategies, procedure, and adopted methodology and data analysis techniques.

Results of the present inquiry are presented in chapter IV, under the headings of the traditional creativity divisions, namely, person, process, press (environment), and product.

In Chapter V the main findings are discussed. Specifically, a model for "cultivating" creativity is presented, limitations of the study are noted, and contributions to both the field of creativity research as well as concrete avenues of action for our school system and curriculum designs are discussed. Finally, implications for future research are suggested.

CHAPTER TWO: LITERATURE REVIEW

The following section includes a review of each of the four categories reflected in creativity research. First, the creative person will be examined in terms of personality traits, cognitive abilities and biographical traits. Creative processes will be discussed next followed by creative environments or press. Finally, the review will conclude with an examination of creative products. It is important to keep in mind that these four strands are not clear, distinct entities, but form a rather "fuzzy" focus within a complex topic (Davis, 1992).

The Creative Person

The research contained within this strand involves describing the creative human, often yielding lists of traits found in creative people. Included is information concerning personality, intellect, temperament, physique, habits, attitudes, self-concept, value systems, defence mechanisms, and behaviour (Hunsaker, 1992; Rhodes, 1961/1987). These factors fall under three broad and interwoven categories, *personality traits*, *cognitive abilities*, and *biographical traits*; it should be noted that some traits or abilities are able to be easily classified in one or more categories, (e.g., humour, originality, perceptiveness) (Davis, 1992).

The first category, *personality traits,* generally involves research that has examined creative people and produced a list of common traits. Not every trait will be found in every creative person because there exists much diversity in both creatives and forms of creativity for such generalizations. Davis (1992) has provided a list of twelve characteristics derived from the many studies which have explored the nature of the creative personality trait. This list includes the following characteristics which creative people tend to possess or embody: aware of their own creativeness; original; independent; enjoy taking risks; energetic; curious; a sense of

humour; attracted to complexity or novelty; artistic; open-minded; a need for privacy, or alone time; and, perceptive. For an expanded view of this list which includes sub-topics, see Appendix A.

In addition to these traits, creative people have also been shown to share the stereotypical qualities of both sexes, holding these interests in addition to, rather than in place of, interests stereotypically associated with members of their own sex (Martindale, 1989). As Woodman and Schoenfeldt (1989) explain, creatives appear to possess both a "psychological femininity and masculinity" (p. 78). However, it should be made clear that these are cognitive and not sexual orientations. What's more, contrary to "common knowledge", homosexuals are no more creative than heterosexuals (Martindale, 1989). This misconception may be rooted in the fact that homosexuals who have decided to "go public" may also possess the necessary traits that facilitate creative acts, for example, one who is independent, resists societal demands, is self-accepting, does not mind consequences of being different, or is courageous.

The various combinations of these traits found in creative people are not always interpreted or manifested in positive, socially accepted ways. Creative people can sometimes be defiant or questioning of authority, stubborn, self-centered, disorganized, forgetful, temperamental, argumentative or demanding (Davis 1992; Davis & Rimm, 1994; Torrance, 1981a).

It is also interesting to note that creativity has been linked to a variety of psychopathological disorders, such as schizophrenia, bipolar depression, various mood disorders (Barron, 1969; Bowden, 1994; Richards, 1994; Rothenberg, 1990), as well as alcoholism and marijuana use (Martindale, 1989). Creativity, it would appear, may at once lead to tension and

anxiety as well as help resolve it, depending on the individuals and contexts involved (Runco & Shaw, 1994).

Within the second category related to the creative person, *cognitive abilities,* the relationship between intelligence and creativity is debated. Although IQ and creativity are linked, beyond a certain threshold the configuration of psychological traits, stimulating family, education, and cultural aspects are more important to creativity than high levels of intelligence (Walberg, 1988). Research has demonstrated that once the threshold for intelligence as measured by IQ has been met, IQ greater or equal to roughly 120, little correlation with creativity exists (Mackinnon, 1978; Simonton, 1987).

Barron (1988) has produced a list of six factors that are central to creative abilities. These affective or cognitive traits are: recognizing patterns, making connections, taking risks, challenging assumptions, taking advantage of chance, and seeing in new ways. A list describing other abilities compiled by Davis (1992) combining past creativity research by Torrance (1962, 1979, 1984, 1987, 1988) and Tardif and Sternberg (1988), includes: fluency, flexibility, originality, elaboration, transformation, sensitivity to problems, ability to define problems, visualization/imagination, analogical/metaphorical thinking, ability to predict outcomes/consequences, analysis, synthesis, evaluation, logical thinking, able to regress, intuition, and concentration. Definitions can be found in Appendix B.

In addition to personality traits and cognitive abilities, researchers have also examined *biographical traits* in an effort to shed light on our quest to better understand the creative person. Biographical characteristics of creative people suggest that creativity takes on new forms and changes through the course of one's lifetime (Sasser-Coen, 1993). Lehman (1960, 1966) for

instance, found that major contributions were most likely to occur relatively early in one's lifetime, yet net productivity peaked later in middle adulthood.

Other factors surrounding creativity include birth-order effects and handedness. For instance, Hetherington and Parke (1979) concluded that first and only borns manifested many traits which were not considered conducive to creative acts (e.g., anxious, conforming, and worried about failure), whereas, Simonton (1988) found that firstborns tended toward greater independence and achievement. Equally puzzling, Runco and Bahleda (1986) report no differences between first-born, second-born and third-born groups on divergent thinking tests, whereas, Clark and Rice (1982) report conflicting findings depending on which tests are used to measure creativity. It would appear that firstborns excel at creativity when measured by complexity-simplicity tests, yet when measured by word association and uses tests, laterborns excelled. As well, that laureate prize winners in the latter half of this century have also tended to be laterborns might possibly suggest that smaller families and universal public education have made being the firstborn less advantageous in the competition for limited family resources (Clark & Rice, 1982).

However, perhaps as Albert (1980) suggests, rather than birth-order, it may be more fruitful to consider "special family position" which accents the fact that many high achievers were perceived and treated as "special" in the family early in their development. This view is supported by recent research by White, Campbell, Stewart, Davies, and Pilkington (1997), which demonstrates the usefulness of considering perceived birth order as opposed to actual birth order position when exploring an individual's future career interests. However, their research has demonstrated that "psychological order constructs cannot be fully effective when isolated from

other central aspects of the individual" (p. 102). In addition to birth order effects, equally inconclusive debates concerning the relationship between creativity and handedness can also be found in the literature. For example Dacey (1989b) found that sixty-five percent of students enrolled in a major art school were left-handed, whereas Katz (1980) and Hattie and Fitzgerald (1983) have found no significant differences between right and left-handed participants on separate creativity scales.

Still other research suggests quite a large part of novel discovery is played by chance (Brown, 1989; Vernon, 1989), although as Pasteur once said, "chance favours only the prepared mind" (cited in Hayes, 1989, p. 136). That preparation plays a crucial role and is an important condition of creativity is not disputed in the literature (Hayes, 1985, 1989). A brief review of the stage theories or models which follow also supports this claim.

In summary, the literature identifies many diverse and at times seemingly contradictory personality traits, cognitive abilities, and biographical characteristics, with each contributing some illumination towards understanding creative individuals. Yet, as the paradoxes suggest, more research is needed in order to understand how to optimize the goodness-of-fit between differing personality constellations and the environment.

The Creative Process

Within the creative process are steps or stages, motivation, perception, techniques, learning, thinking, and communicating which together help to inform the creative act. The first model in this section attempting to explain the creative process is the four stage model proposed by Wallas (as cited in Davis, 1992). One of the earliest and perhaps best known, it includes the stages: *preparation*, *incubation*, *illumination*, and finally, *verification*, and has served as the basis

or is quite similar to a wide range of subsequent models (e.g., Cropley, 1997; Davis, 1992; Rossman, 1964).

Similarly, the creative problem-solving model attributed to Osborn (1963) originally consisted of three stages, (1) Fact-finding, (2) Idea-Finding, and (3) Solution-finding. It was later adopted and expanded by Parnes (1981), becoming a five stage model. Not unlike the Wallas model, a variety of theorists have added, amalgamated or somehow modified various stages (e.g., Basadur, 1987; Davis, 1992; Treffinger, Isaksen & Firestien, 1982; etc.), but, for the most part, the models are closely related to the original.

The five flexible stages of the Parnes (1981) model: fact finding, problem finding, idea finding, solution finding, and acceptance finding, may be followed in sequence or in a more concurrent style; the emphasis here being on improving the likelihood of finding a solution. Before beginning each step, there is a divergent phase, where many ideas are sought, and a convergent phase, where only the most promising ideas are selected for further exploration.

These stages are reflected by Torrance's (1988) definition of creative thinking:

> I tried to describe creative thinking as the process of sensing difficulties, problems, gaps in information, missing elements, something askew; making guesses and formulating hypotheses about these deficiencies; evaluating and testing these guesses and hypotheses; possibly revising and retesting them; and finally communicating the results (p. 47).

Other creative models for group problem solving encourage assuming multiple perspectives concerning a given problem. deBono's (1992) lateral thinking process, for instance, involves six roles or modes. The thinking modes or "thinking hats" as deBono describes them

for clarity, are White hat, Red hat, Green hat, Black hat, Yellow hat, and Blue hat. Respectively, their roles are to gather facts or compute (white), to use feelings or emotions to generate information (red), to use lateral thinking (green), to think logically and provide objective negative feedback for each idea (black), to think logically and provide positive feedback (yellow), and to organize and control the group (blue).

In addition to these models, Gordon (1976) reported that creative people spontaneously use analogous thinking strategies to help them think unhabitually, contributing to the creative problem-solving process. Similarly, Harrington (1980) also reports creative individuals use images and metaphors as a basis for solving complex problems.

The models examined to this point do not account for motivation, which could arguably be seen as one of the most important factors in the creative process, for without some source of motivation one would not create. Research on this topic is divided; for instance, Torrance (1965) and Eisenberger and Armeli (1997) have demonstrated that monetary incentives can enhance performance on creativity measures. Additionally, Harrington (1975) has shown that explicit instructions to be creative also increased scores on these measures. However, research by Amabile (1983) and Amabile, Hennesey, and Grossman (1986) suggests external rewards limit exploration and decrease creativity. It would appear individuals need to find personally meaningful rewards for their efforts whether internal or external or both, yet it remains unclear which precise conditions are optimal.

More recent confluence models, which require the convergence of multiple components for creativity to occur, mark a shift in creativity research. These models conceptualize the creative process in a more complex and interactive manner, rather than the strictly person-centred

approaches previously examined.

Three such models will be examined. The first model, Amabile's (1983, 1990) componential model, consists of three necessary components, namely, domain-relevant skills, creativity-relevant skills, and task motivation. The second, the systems view model, is a dynamic model with creativity resulting from the interaction between domain, person, and field (Csikszentmihalyi, 1990; Feldman, Csikszentmihalyi, & Gardner, 1994). Finally, the developmental evolving-systems model involves a person's purpose, knowledge and affect.

In the componential model proposed by Amabile (1983, 1990), there are three necessary components which operate at different levels of specificity and impact on the creative product. The higher the level of each of the three components, the higher the overall level of creativity will be.

The first component, *domain relevant skills*, "are the basis from which any performance must proceed" (p. 76). These are the cognitive pathways that may be followed to solve a problem or perform a given task; these include factual knowledge, technical proficiency, and special talents in the domain in question. *Creativity relevant skills*, the second component, comprises the "something extra", the cognitive style that is favourable to exploring new cognitive pathways and taking new perspectives. It is dependent to some extent on personality characteristics related to independence, self-discipline, risk-taking, unconcern for social approval, and so on. Finally, the third factor, *intrinsic task motivation*, makes the difference between what a creative person can do and what he/she will do. Motivation is affected by both a person's baseline attitude toward a task and the perceived reasons for undertaking such a given task. See Appendix C, Figure 2 for a breakdown of each of these three components.

Amabile (1990) argues that no amount of skill or ability in *creative skill* or *domain skill* can compensate for lack of intrinsic motivation. However, high levels of intrinsic motivation may compensate for deficiencies in *creative* and *domain* relevant skills. Additionally, all three components operate at different levels of specificity. *Creativity skills* operate at the most general level and may influence responses in any content domain. *Domain-relevant skills* operate at an intermediate level; whereas, *task motivation* is very specific to a given task within a certain domain.

By examining the interaction among the three components, as well as internal and external factors operating within each component, Amabile (1983) proposes that "creativity is best conceptualized not as a personality trait or a general ability but as a behavior resulting from particular constellations of personal characteristics, cognitive abilities, and social environments" (p. 358). See Appendix C, Figure 3, for a graphic representation of the componential model.

The second model, the systems view of creativity, also features a domain component, and examines various interactions drawing our attention to the importance of the field in determining what products are to be deemed creative. Proposed by Csikszentmihalyi (1990), the systems view, accounts for creativity by looking at the interaction between three sub-systems, *the domain*, *the field*, and *the person*. Each sub-system performs a specific function as well as influences the other: "the domain transmits information to the person, the person produces a variation, which may or may not be selected by the field" (p. 200). No product or act can be considered creative without input from all three sub-systems.

The domain sub-system is an organized body of knowledge about a particular topic consisting of the set of rules, the vocabulary and grammar of a given area; but creativity is never

judged by the domain, rather it is judged by the field. *The field* is "composed of individuals who know the domain's grammar or rules and are more or less loosely organized to act as gatekeepers to it" (p. 201). It includes all the persons that can affect the structure of a domain. *The field* decides whether a product or performance meets the criteria of the domain and, if the product should depart from the standard, it also decides if these innovations should be accepted and added to the domain or if they should be labelled as "deviant". The third and final sub-system, *the person*, are individuals who have assimilated so well the various aspects of the domain that they can produce variations which extend the original domain. These individuals will probably possess many of the characteristic that distinguish creative people, the personality traits, values, problem finding orientations, intrinsic motivation, and so on.

Thus, as Feldman, Csikszentmihalyi, and Gardner (1994) explain, "persons, domains, and fields...need to be studied in relation to each other, as well as independently.... Persons, however original or determined or skilled, make contributions to domains that have structure and yield to or transform constraints" (p. 25). See Appendix D, for a representation of this model.

Finally, the developmental evolving-system model for understanding creativity is examined. This model features three components, *purpose*, *knowledge* and *affect*. Gruber and Davis (1988) explain, "in describing the creative person at work, we have found that it is useful to conceive of the person as a system of three main interacting subsystems: knowledge, purpose, and affect" (p. 266). As each of these components grows over time, deviations encountered are amplified which leads to an individual's production of creative products (Gruber & Davis, 1988).

Developmental changes in the *knowledge* system occurs over time; "... creative works take a long time.... it is this peculiar combination of improbability and fitness that leads people ...

to exclaim 'How stupid not to have thought of that" (p.265). *Purpose*, refers to a set of interrelated goals, which develop and guide an individual's actions and behaviours. Joy or frustration which influence undertaken projects are encompassed by the *affect*. Gruber and Wallace (1999) state, "With well educated hindsight, we may be able to understand the various solutions that come in response to some eco-pressure for change" (p. 93).

Within the process strand several stage models, various techniques, as well as three more fully developed confluence models each help shed light on the creative process and the importance of social and psychological environments. In addition to the effects exerted by motivation, both internal and external, the field, which ultimately judges the creativity of products, and developmental changes, which amplify deviations over time, there are other environmental factors which can encourage and foster or discourage and limit the creative act. An examination of environments which foster or inhibit creativity follows.

The Press (environment)

The creative press involves social and psychological environments and descriptions of situations which help or hinder creativity. Foremost in the literature is research which recommends that an environment that is free from external pressure or control, as well as warm, risk-free, and supportive, fosters creativity (Goree, 1996; Macleod, 1987; Martindale, 1989; Rogers, 1976; Torrance & Myers, 1970). In contrast, surveillance and externally imposed deadlines appear to be detrimental to creativity (Amabile, 1983). However, research using one or a combination of the various interactive models may be instrumental in informing and reconciling paradoxes such as the ones surrounding external rewards and pressures and creativity.

Other studies have found that creative role-models and mentors provide support and influence and play an important role in the development and emulation of creativity (Prentky, 1989; Simonton, 1978, 1984; Torrance, 1983). One study by Zuckerman (1979/1983) found that over half of the Nobel prize winners had previously studied under a Nobel laureate. Research by Torrance (1981b) and Sosniak (1985) also suggests that certain "special" teachers have played an important role in the future careers of highly creative individuals by enabling and keeping alive their creative spark.

Additional environmental factors include discriminating characteristics of families. In testing Rogers' theory, Harrington, Block, and Block (1987) demonstrated that child-rearing practices congruent with establishing psychological safety and psychological freedom were antecedents of adolescent creative potential. In support of these findings, the parents of highly creative adolescents in Dacey's (1989a) study also shared similar parental styles. For instance, they did not prescribe rules, per se, to govern their children's behaviour. Instead, they exercised control by modelling and engaging in family discussions regarding behaviour. They also rarely punished their children for actions for which they disapproved. The fact that parents were disappointed was enough to motivate the teenagers to modify their behaviour. Much joking and "fooling around" characterised their relationship. Additionally, parents usually provided ample opportunities for fostering many of the creative traits we have already examined. Finally, the adolescent participants in the Dacey study almost unanimously reported schools had little effect on creativity.

As creativity research evolves, we will likely be able to state with more certainty the types of environments and techniques that are optimal for particular personality constellations. For

now, one should not give up hope, keeping in mind that "many outstanding creative individuals have succeeded despite apparently unfavourable home, school, or other conditions" (Vernon, 1989, p. 106). Examined next will be the creative product.

The Creative Product

Some theorists argue that there exists a continuum of creativeness, similar to intelligence, from lesser to greater, depending on the characteristics of the people and their products (Amabile, 1983; Brown, 1989). Others see it as two qualitatively different types: lower-level, secondary creativity, which simply extends some known concept into a new area of application; and a higher-level primary creativity, which alters the universe of meaning itself (Ghiselin, 1963).

Creative products are generally thought of in terms of tangible evidence to creative acts. Non-agreement in the literature usually stems from a lack of agreed upon standard for judging creative artifacts according to value of idea or degree of originality. There are many categories and requirements typically decided by experts in the appropriate given fields.

However, there does seem to be agreement on some basic intrinsic requirements necessary for a product to be considered creative (Benack, Basseches & Swan, 1989). The product characteristics that are most frequently mentioned are *novelty*, *usefulness*, and *harmony* or *elegance*, with the caveat that no criterion is in itself sufficient for the product to be considered creative (Voss & Means, 1989). Bailin (1984, 1988), for instance, argues that one cannot be considered creative without creating tangible products. Others take a more process oriented definition which simply requires the perception of an important relation where one had not been known or even suspected and/or connecting seemingly contradictory elements (Koestler, 1964; Voss & Means, 1989). Still others see creativity as a response to an ill-defined problem (Hayes,

1981). As well, some have even adopted a combination of all three criteria reviewed above (Benack, Basseches & Swan, 1989). Therefore, when examining creativity it is vital to include some discussion about the creative product being considered.

Summary

Creativity research has led to many key insights falling under four broad areas of the creative experience, including, processes, persons, environments and products. Yet, the creativity field is wrought with paradoxes; situations which enhance one's creative experience may inhibit another's. Perhaps, future research examining creativity as the selective result of a unique amalgam of personality characteristics, cognitive abilities and social environments will prove more fruitful in determining the circumstances and situations required to optimize individual creative experiences.

Additionally, as we begin to view creativity as the product that arises as a result of at least a considerable amount of social influence, for instance, teachers, mentors, parents, peers, and the sociopolitical context, the relationship between individual and community is transformed into one where a significant amount of responsibility emerges for one's creative endeavours. Although not the only factors related to the successful completion of creative products, environmental influences must be better understood in order to allow one's creativity to be fully realized.

One avenue which may prove promising in our quest to better understand, and therefore enhance, the creative experience according to individual preferences and backgrounds, is the research methodology presented in Chapter III. By incorporating what is already known about creativity within a more robust model, and by seeking the input of today's young adults, we may

shed new light on old questions.

The goal of the present study is to inform the existing registry of environmental factors which affect creativity by examining social contexts as they operate and are mediated through their complex interplay with the various personality characteristics, processes and products of the individuals involved. The research methodology employed to this end is presented next in Chapter III.

CHAPTER THREE: METHODOLOGY

Social science research involves our attempt to understand, capture, and elicit the nuances of social life and social meaning with the researcher, *our self*, as the prime tool by which one gathers data (Manning, 1982). Therefore, paramount to such understanding is that researchers trace both their arrival at, and their steps throughout, the process of conducting research (Denzin & Lincoln, 1998). According to Denzin and Lincoln, research must be located along five phases if both the author, and ultimately the reader, are to understand the connections between the final text and the world written about. Respectively, each phase explores issues concerning: the researcher as a multicultural subject; the adopted theoretical paradigm and perspective; research strategies; methods of data collection and analysis; and finally, the art of interpretation and presentation. In a similar vien, Charmaz (1990) states that "...grounded theory analyses can be enriched by clarifying the researcher's epistemological premises..." (p. 1171). Epistemologies and methodologies must not only be compatible, but equally important, they must be explicitly reported if qualitative inquiries are to achieve dependability and transferability (Bailey, White, & Pain, 1999).

In order to interpret the research findings which follow in Chapters IV and V (which are themselves interpretations) it is important to be permitted clear answers to the positions taken in response to the five phases previously mentioned. In terms of my own cultural background it is helpful to keep in mind that I am a white, middle class male, conducting research in a semi-affluent public high school located in an established Ottawa neighbourhood.

In terms of the theoretical perspective of the present study, a qualitative approach, employing grounded theory methods, was adopted. These methods were as best applied within

the confines of the established steps to research which currently circumscribe most research enterprises within our institution. The regulations are such that a review of the current literature within a substantive field is required before a research project may be undertaken, a procedure in contrast to the inductive nature of grounded theory as put forth by Glaser and Strauss (1967), Glaser (1978, 1992, 1998), Strauss (1987), Strauss & Corbin (1990, 1998), and Charmaz (1983, 1990, 1995). Of all these scholars, the research design for the present study adheres most closely to the social constructionist interpretation and application of the grounded theory method as outlined by Charmaz (1990).

Charmaz explains that "a social constructionist grounded theory views the process of [analyzing data] as dialectical and active, rather than as given in the reality and passively observed by any trained observer" (Charmaz, 1990, p. 1165). This perspective assumes an active, not neutral, observer "whose decisions shape both process and product throughout the research" (p. 1165). The final report is a social construction of a social construction with the interaction between the researcher and the data resulting in a constructed "discovery" shaped by the questions brought to the data. Similarly, according to Denzin and Lincoln (1998), the qualitative researcher is a bricoleur creating a collage-like product shaped by the interaction of his or her personal history, biography, gender, social class, race, and ethnicity, as well as those of the people being studied. Their stories are couched and framed by the adopted storytelling traditions (paradigms) and have power and political implications; they are viewed through a theory and value window (Guba & Lincoln, 1998). Paradigms are not open to proof; "there is no way to elevate one over another on the basis of ultimate, foundational criteria" (Guba & Lincoln, 1998, p. 201-202). However, even in the so-called "hard" sciences, the ideal of an inquirer

objectively discovering phenomena as through a one-way mirror has been shattered by evidence such as the Heisenberg uncertainty principle and the Bohr complementarity principle (Guba & Lincoln, 1998). "Indeed, the notion that findings are created through the interaction of inquirer and phenomenon (which, in the social sciences, is usually people) is often a more plausible description of the inquiry process than is the notion that findings are discovered through objective observation..." (p. 200).

As Strauss and Corbin (1990) explain, qualitative research lends itself to research that attempts:

> to uncover and understand what lies behind any phenomenon about which little is yet known. It can be used to gain novel and fresh slants on things about which quite a bit is already known. Also, qualitative methods can give the intricate details of phenomena that are difficult to convey with quantitative methods (p. 19).

Grounded theory methods are employed to build theory that is "grounded" or faithful to an area under investigation. They are useful for uncovering the emic views of the participants. Researchers in this tradition hope their theories will have useful application and that, ultimately, they are related, in cumulative fashion, to others within their respective disciplines (Strauss & Corbin, 1990). This is congruent with the aims of the present research which seeks to both answer the call for a holistic examination of creativity within a conceptual framework capable of integrating the disparate strands of past creativity research (e.g., Cropley, 1997; Csikszentmihalyi, 1988, 1990; Harrington, 1990; Hunsaker, 1992; Montuori & Purser, 1995; Woodman & Schoenfeldt, 1989), and act as action research of direct benefit to students,

educators, parents and school boards.

Consistent with the symbolic interactionist roots of grounded theory (Benoliel, 1996; Glaser, 1992, 1998) the present research is guided by the interactionist model of creative behaviour as put forth by Woodman and Schoenfeldt (1989). Intrinsic to the interactionist model (Rock, 1982), as with grounded theory analyses (Bigus, Hadden & Glaser, 1982), is a social world that is fluid and dynamic. Interactionists explain social behaviour in terms of intertwined dialectical processes (Rock, 1982). Central to grounded theory analyses is the development of *basic social process* (BSP) theories (Bigus, Hadden & Glaser, 1982; Glaser, 1978). BSPs seek to account for the organization of behaviour by simultaneously considering social psychological and social structural variations occurring over time (Bigus, Hadden & Glaser, 1982; Glaser, 1978, 1998).

The advantages of employing a grounded theory approach include: (a) its effectiveness in uncovering the emic views of the participants; (b) it produces a theory that both *works* to explain relevant behaviour in a substantive area of research, and (c) *fits* within the substantive area; (d) the findings have *relevance* to the people in the substantive area; and (e) the theory is readily *modifiable* as new data emerge. (Glaser, 1998).

Modes of Data Collection

A short biographical questionnaire as well as an interview guided by a semi-structured protocol are used in the present study.

Biographical Questionnaire

A biographical questionnaire consisting of ten questions (see Appendix E) was developed in order to allow the collection of routine data, simply and efficiently (Anderson, 1990).

Consisting of both open- and closed-ended questions, the questionnaire provided a standard method for collecting needed background and demographic information which could be consulted during subsequent data analysis stages.

The questionnaires were administered in an informal manner with the researcher providing clarification as requested. And although questionnaires are not particularly well suited for the collection of detailed and personalized data (Anderson, 1990; Bogdan & Biklen, 1998), the subsequent interviews allowed participants ample opportunity to reveal their unique perspectives through the generation of thick, rich descriptions given in their own words.

Interview Protocol

The interviews were conducted using a question guide that was strategically developed to gain insight into each of the four strands of creativity research, yet with the primary focus resting on environmental factors (see Appendix F). The guide consisted of eleven open-ended questions. Specifically, two of the eleven questions were designed to explore any number of the four strands, person, process, product or press (environment) depending on the respondent; six dealt chiefly with environmental concerns; and three dealt with the remaining three strands.

The questions were specifically designed to elicit participants' perceptions and interactions with creativity enhancing environments. Each question was based on an extensive literature review, as well as in consultation with professional experts in the fields of creativity, education and qualitative research methods.

Moreover, two participant-defined, open-ended questions were developed to adhere to the intrinsic flexible and adaptable nature of the grounded theory method. According to Strauss and Corbin (1998), initial interview guides may be developed based on concepts derived from

previous fieldwork, experience and/or from the literature, however, the guides should not be adhered to rigidly and should give way to emerging concepts. Glaser (1998), on the other hand, advocates abandoning the interview guide altogether. Therefore, the present interview protocol, by adopting a general guide which includes both researcher and participant directed questions not only combines aspects of both Glaserian and Straussian applications of grounded theory, but also satisfies university and ethics requirements.

Method

Participants

The participants for this study were chosen purposively not for conventional generalizability, but rather for "an understanding of the conditions under which a particular finding appears and operates..." (Huberman & Miles, 1998, p. 204). Also considered during the planning of the present project, were scope, resources, and time limit factors.

A large part of creativity research takes place in educational settings where teacher ratings are a commonly used criterion of creativity (Hocevar & Bachelor, 1989). Peer nominations have also been used in the past as a criterion of creativity (Hocevar & Bachelor, 1989). Torrance (1965) has found that pupils receiving a large number of teacher or peer nominations on various criteria of creative thinking achieved higher scores on tests of creative thinking than did their peers not so nominated. The selection of participants for the present study was, in part, determined by both teacher and student nominations.

In an attempt to overcome the lack of discriminant validity inherent in creativity research, both in terms of how creativity differs from other constructs and how the dimensions of creativity differ from each other (Hocevar & Bachelor, 1989; Woodman & Schoenfeldt, 1990), the

participants were selected as a result of two phases.

In phase one, students enrolled in at least one OAC (Ontario Academic Credit; note: senior year of high school in the academic stream) course during the 1998-99 academic year, as well as each member of the teaching staff, were given an opportunity to complete a questionnaire asking them to nominate fellow peers or students whom they believed to be particularly creative. It was left up to each teacher's discretion whether they felt sufficiently knowledgeable of OAC level students' creative activities to complete the form. As well, there was no limit to how many students could be nominated, however, ten was suggested as appropriate (see Appendix G & H, respectively.). From these nominations, an initial pool of thirty-four students, nineteen female and fifteen male, was generated. This list was produced by designating an aggregate score to each student nominee based on their obtained rank on both teacher and student nomination lists. Nineteen and fifteen, respectively, represent the natural composition of the initial group of thirty-four participants without any adjustment for gender.

In order to avoid ambiguity, a standard for identifying creative behaviour was employed. Both teachers and peers were asked to base their nominations on the following specific criteria: ideational fluency (lots of ideas); flexibility (many different ideas); originality (unique ideas); curiosity; problem-solving ability; and inventiveness (Hocevar, 1981). Additionally, they were reminded that these qualities may be expressed in wide areas, including: fine arts, crafts, literature, music, performance arts, or math-science.

In phase two, the selected participants (34) were asked to complete a slightly reformatted Creative Behaviour Inventory (CBI) (Hocevar, 1979, see Appendix I). Of these participants, only twenty-three students, nine male and fourteen female, returned their completed CBI.

The CBI is a ninety-item inventory of creative activities and accomplishments. It contains six subscales: creativity in the fine arts, crafts, literature, music, performing arts, and math-science. The CBI has been shown to be appropriate for use with adolescents and young adults (Hocevar, 1976). Furthermore, "despite the voluminous literature on the measurement of creativity, a simple and straightforward inventory of creative achievements and activities appears to be more defensible than the more commonly used methods" (Hocevar, 1981, p. 459). Examples of commonly used methods include: tests of divergent thinking; attitude and interest inventories; personality inventories; biographical inventories; ratings by teachers, peers, and supervisors; judgments of products; and eminence (Hocevar & Bachelor, 1989). Additionally, student self-reports of attainments have been found to be sufficiently accurate to provide a usable source of data (Wallach, 1976). As well, several researchers have suggested that using a combination of approaches to measure creativity holds the most promise (e.g., Cooper, 1991; Wakefield, 1991). Wakefield (1991) also suggests that when basing decisions on creativity, peer and teacher nominations must be considered in addition to other tests.

The pool of twenty-three students was further narrowed by selecting fourteen participants, seven female and seven male, who had obtained the highest score on the CBI. Originally it was planned that only ten students were to be interviewed; however, the cut-off point for the remaining four students was deemed to be quite arbitrary since their obtained score was only marginally below those of the initial ten. As well, it was decided that they might offer new perspectives and facilitate the saturation of categories, not to mention their eagerness to participate.

In retrospect, their inclusion proved to be quite serendipitous since they added much

richness and insight to the present study. Furthermore, adding the four extra participants also helped compensate for the impossibility of scheduling a meeting with one of the initial ten. As well, the two planned focus-group sessions proved to be a scheduling nightmare and eventually had to be dropped. Therefore, in the end thirteen participants, seven male and six female, were interviewed for this study.

Procedure

Permission to conduct research within a city high school was sought through both the school board's Committee for Ethical Research as well as the school principal and granted for this project. It was decided that an academic high school (pop. 1 200) with approximately 260 senior students located in a semi-affluent urban neighbourhood would provide a pool of participants that would reflect the experiences of students operating within a high school not specifically designed for artistic or creative students, such as an arts-based school.

Nomination forms were placed in each teacher's mailbox; after one week *reminder/thank you* (see Appendix J) notices were also left for the same teachers. Student forms were also distributed to each of the OAC homeforms to be passed out and collected by the homeform teacher. In addition, in order to provide maximum possibility for participation, blank teacher forms were left in the office for teachers who had misplaced the original forms. Blank student forms were also left with the librarian for students who may have been absent or who had a scheduled study period during initial distribution. Announcements were made throughout the week to inform OAC students who had not received a form that one could be obtained from the librarian and to remind students and teachers to return the completed forms to a drop-off box placed in the school secretariat office. Nevertheless, because each form was numbered, it was

possible to ascertain that no extra forms from either the office or the library were submitted.

Sixty-two Seniors from ten different homerooms as well as nine teachers responded to the nomination questionnaire. Their nominations were logged and the frequencies tabulated. From these tables a list of thirty-four students, nineteen female and fifteen male, was generated. A package containing instructions for completion and return, the CBI, as well as a packet of popular chewing gum, was compiled and distributed to each of the students' homeform teachers. Students were given one week to complete the CBI and return it to a drop-off box located in the secretariat office.

Of the thirty-four questionnaires handed-out, twenty-three were returned and subsequently scored. As a result of these ratings, fourteen students were telephoned and asked to take part in the interview and questionnaire portion of the present study. At that time, age of majority was confirmed and a timeslot which would not interfere with their class or study time was scheduled. Fortunately, of the thirteen interviews scheduled only one had to be rescheduled due to illness.

Upon arrival, the rationale of the study was briefly explained to the participants, although, only in terms of the requirements to complete a master's thesis and the present author's general interest in creativity. This was in order to minimize any perceived bias and the Halo effect or what Glaser (1998) refers to as being "properlined", which occurs when participants say only what is proper to tell the researcher or what they feel they are supposed to say. Additionally, before any information was collected, participants read a consent letter (see Appendix K) and only after I had answered any of their questions did participants sign a consent form (see Appendix L). All but one participant had attained the age of majority; prearrangements were

made in order for her parent to sign the consent form on her behalf. Confidentiality was assured to all participants.

Each of the thirteen Seniors who participated were interviewed individually in an empty seminar room within the school. They were also asked to complete a short biographical questionnaire. The interviews lasted between twenty-five and eighty minutes, with an average time of forty minutes and were, with prior explicit consent, audio-taped for transcription purposes. Mainly conversational in nature, the interviews gained minimal-to-moderate structure by the use of a question guide, although employing a protocol still allowed for considerable latitude for participants to pursue a range of topics and shape much of the interview content.

Moreover, as suggested by the literature (Bogdan & Biklen, 1998) the guide did provide the interview with a general focus while allowing it to remain open to new and emerging themes. As well, probes and follow-up questions were employed throughout the interview in order to clarify and complete answers, signal expected depth, and demonstrate interest. Adopting a flexible style with regard to the order and general procedure of the interview protocol allowed the interview to adapt to each of the thirteen informants' personal style.

Following the advice of Bogdan & Biklen (1998) for open-ended interviewing, participants were treated like experts. Also serving as guidance were Spradley's (1979) suggested techniques for performing and completing successful interviews. These include: listening instead of talking, taking a passive rather than assertive role, expressing verbal interest and showing interest by eye contact and other non-verbal means. These techniques and the special nature of each of the participants combined to allow for rich, productive interviews. At the very end of the interview participants were given an appreciation gift certificate valid for

redemption at a local music store.

Data Analysis

Each of the thirteen interviews were transcribed and analyzed following grounded theory techniques outlined in Glaser and Strauss (1967), Glaser (1978, 1992, 1994, 1998), Strauss and Corbin (1990, 1998) and Charmaz (1983, 1990, 1995). Also informing the analysis were the biographical questionnaires, CBI, and notes taken during interviews.

Grounded theory is an evolving method; earlier works (e.g., Glaser & Strauss, 1967, Glaser, 1978) tend to be at once phenomenological as well as positivistic and thus, at times, may seem inconsistent and confusing (Annells, 1996, 1997; Charmaz, 1990). Also confounding the application of the grounded theory methodology is the fundamental cleavage between the method as applied by Glaser (e.g., 1978, 1992, 1994, 1998) and that of Strauss (e.g., 1987) and Strauss & Corbin (e.g., 1990, 1998) (Annells, 1997; Melia, 1996). Nevertheless, techniques, suggestions and procedures were adapted and adopted as best seen fit in order to further the research process and remain consistent among ontological, epistemological and methodological positions assumed by the present author. As Barney Glaser (1996), a co-founder of grounded theory states: "[grounded theorists] show their particular adjustments of grounded theory to handle the unique conditions of their research situation. They do not "baggage" wrestle ... rather they bend grounded theory methodology carefully to their emergent needs" (p. xii). Accordingly, the data analysis procedures which follow most closely adhere to the social constructionist methods as outlined by Charmaz (1983, 1990, 1995). However, methods, techniques and suggestions from Strauss (1987), Strauss and Corbin (1990, 1998) and Glaser (1978, 1992, 1994, 1998) imbue the present application and analysis.

Coding proceeded in a two-phase process. First, an *initial* coding phase was conducted and subsequently followed by a second, *focussed* coding phase. Examining the collected data in a line-by-line fashion the researcher studies the data for what he or she can define and discover. For instance, actions or events occurring or being represented are labelled. Proceeding in a line-by-line manner prompts the researcher to gain a full theoretical accounting of the data and "keeps the researcher examining the *collected* data, rather than lapsing entirely into theoretical flights of fancy which have little connection to the data" (Charmaz, 1990, p. 1168). It also helps dispel earlier preconceived assumptions about the data and facilitates viewing the data analytically (Charmaz, 1983, 1990, 1995; Glaser, 1978).

Data were examined in this manner in order to actively toy with, and develop leads, ideas and issues. Systematically and gradually, codes are rendered into categories which are then defined analytically by delineating and sorting their various properties and dimensions. Emerging categories are constructed (discovered) and are clearly shaped, however implicitly, by the author's assumptions about reality as well as his or her research perspectives and interests (Charmaz, 1990, Denzin & Lincoln, 1998, Glaser, 1996).

The same material was coded several times from many differing vantage points in order to slowly create order in the emerging themes. Each putative category must earn its way into the analysis. Data are not examined simply for description or sequence of event, but rather for possible patterns, processes, conditions, participant actions and beliefs, changes in the process and their consequences (Charmaz, 1995). Two techniques not suggested in the literature which proved to be quite useful in allowing themes to emerge were reading the transcripts while listening to the actual interview tapes and also reading only the participants responses without

initially reading the questions.

During *focussed* coding, the selective and conceptual phase, initial categories were weeded out leaving a more limited set of developed categories. Categories no longer simply labelled or summarized topics, but rather were analytically raised to conceptual categories and applied to large amounts of data. Charmaz (1983) states:

> The purpose of focused coding is to build and clarify a category by examining all the data it covers and variations from it. Frequently, this means going back through the data it covers and resifting it in relation to the newly devised category. New categories may subsume earlier materials that were left uncoded or were coded in different ways (p. 117).

During this phase, constantly comparing and questioning, data with data, situation with situation, and concept with concept, facilitates developing general categories which can then be broken down into their respective subcategories. Constant comparison of data is done in order to explicate and exhaust each of their various properties. Here it is important to keep in mind that the researcher actively shapes the "discovery" process. Order is not discovered within the data but rather, created by the researcher's explication, organization and presentation of the data (Charmaz, 1990). These more fully developed categories are then woven together into a processual analysis rather than treated separately as single topics. By concentrating on defining and developing more generic processes, codes are raised to categories with defined properties, as well as specific conditions under which they arise, continue and permutate. Additionally, their consequences as well as relations to other categories should be elucidated. Moreover, categories may be created and labelled by the researcher or they may be taken directly from respondents'

discourse, in which case they are referred to as *in vivo* codes. As Glaser (1978) states,

> [a grounded theorists] is constantly looking for the "main theme" [core category], for what-- in their view-- is the main concern or problem for the people in the setting, for what sums up in a pattern of behavior the substance of what is going on in the data, for what is the essence of the relevance reflected in the data, for the gerunds which bring out process and change (two properties of BSP's) (p. 94).

At this point, the extant literature may be used as direct data as well as a source of questions and comparisons.

A major strength of the grounded theory method is its open-endedness and flexibility, allowing researchers to pursue leads and ideas as they develop (Charmaz, 1990). Data coded one way may also be coded in several other ways as the constant comparing proceeds. Grounded theories are not verified in a traditional sense, rather, as new data emerge they are compared and the ever developing theory simply gets modified in order to produce a theory of ever increasing conceptual power and durability. Glaser (1996) states, "new incidents do not prove a concept or hypothesis wrong, they are just more grist for constant comparison, and the subsequent generation of new properties" (p. xii) . Therefore, through the process of theoretical sampling (see below), which includes the extant literature, the theory is refined and elaborated, leading to greater and greater conceptual density.

Outlining the various steps throughout each of the data analysis phases may give the impression that these were completed in a neat orderly fashion. On the contrary, illuminating this process are various levels of codes and memos which pepper most available sides and blank spaces of the transcript sheets. Additionally, more elaborate memos were kept in a log book

together with notes as to what properties or comparisons each entry referred to and where in the transcript sheets they could be found. Memos varied in conceptual depth from simple code labels to intricate and complex notes on connections and relations between categories. Furthermore, transcripts and memos were reread several times with each subsequent examination becoming more abstract than the previous. Memo writing leads directly into clarifying and planning where more data are needed for the purpose of further developing an emerging theory. This process is called *theoretical sampling* which is a concept central to most, if not all, versions of the grounded theory methodology.

Theoretical sampling is purposive sampling aimed at further developing the emerging theory, not for increasing generalizability of results (Glaser, 1978). Strauss and Corbin (1998) define it as:

> Data gathering driven by concepts derived from the evolving theory and based on the concept of "making comparisons," whose purpose is to go to places, people, or events that will maximize opportunities to discover variations among concepts and to densify categories in terms of their properties and dimensions. (p. 201).

Typically grounded theory sampling is not predetermined before beginning the research, rather it evolves during the process (Strauss & Corbin, 1998). It is important that throughout theoretical sampling, comparisons are made systematically on each category, ensuring that each is fully developed. Nevertheless, a certain degree of flexibility is required in order not to stifle creativity as well as to allow the investigator the opportunity to take advantage of fortuitous incidents that occur in the field (Strauss & Corbin, 1998). At the core of grounded theory is the process of simultaneous coding, collecting and analyzing data throughout the research project (Glaser &

Strauss, 1967; Charmaz, 1983).

However, as with most studies, there is an ideal and a practical way of conducting the research. As a result of the intended scope and exploratory nature of the present study an *open sampling* technique, where participants are sampled systematically rather than theoretically, was adopted (Strauss & Corbin, 1998). This should not be taken to mean that comparisons were not made on the basis of concepts during analysis, for they were. Additionally, differences in data often emerge naturally as a result of the natural variations in the situations experienced by participants (Strauss & Corbin, 1998). Furthermore, not only is the present sampling technique congruent with the application of the method according to Charmaz (1990), it may also have advantages. She (1995) explains, "I recommend conducting theoretical sampling later in the research to ensure that you have already defined relevant issues and allowed significant data to emerge. Otherwise, early theoretical sampling may bring premature closure to one's analysis (p. 45). Elsewhere in her work Charmaz (1990) elaborates a similar point by stating, "delaying focused theoretical sampling fosters gaining an in-depth understanding of the realities and issues at hand. Hence, theoretical sampling fits into the research and analytic process much later than initial sampling of sites, people, or documents (p. 69)".

The data analysis techniques outlined above represent the fundamental aspects for employing a grounded theory approach resulting in an analysis of a field at a substantive level. Analysis need not remain at this level, however; formal theories may also be developed utilizing a grounded theory methodology. Nonetheless, as with the present project, the majority of grounded theory researchers typically strive to develop rich conceptual analyses emphasizing "analytic categories that synthesize and explicate processes in the worlds they study rather than

constructing tightly framed theories that generate hypotheses and make explicit predictions" (Charmaz, 1995, p. 48). This outline, although derived from the original methods as presented by Glaser and Strauss (1967), was significantly informed by later elaborations and explications of the method (e.g., Charmaz, 1983, 1990, 1995; Glaser, 1978, 1992, 1998; Strauss, 1987; and Strauss & Corbin, 1990, 1998).

Summary

The final sample included thirteen participants enrolled in at least one OAC course during the 1998-99 academic year and selected as a result of two phases. In phase one, students were nominated by their teachers and peers. In phase two, based on these nominations a group of thirty-four students was asked to complete a creative behaviour inventory; from the group, thirteen were selected for this study. Participants were interviewed following a semi-structured protocol in an empty classroom within the school. Interview times ranged from twenty to eighty minutes. Each interview was audiotaped and transcribed verbatim. Participants also completed a short biographical questionnaire.

Additionally, a social constructionist grounded theory approach was employed to analyse the data. Recall that this perspective assumes an active, not neutral, observer "whose decisions shape both process and product throughout the research" (p. 1165). As well, interactionists explain social behaviour in terms of intertwined dialectical processes (Rock, 1982). The final analysis proceeded by an initial line-by-line coding subsequently followed by a second more focussed coding.

CHAPTER IV: RESULTS

The results are divided into two main sections. In section I, participants are introduced via profiles. As well, the employed method for identifying creative young adults is discussed. In section II, the main findings are examined. In order to mirror the traditional four strands of creativity research the findings are discussed in terms of the four main subsections, person, process, environment and product. However, one should recall that these four strands are not clearly distinct, but rather form a "fuzzy" focus within a complex topic (Davis, 1992). Category placement is in many instances arbitrary and contrived, since each of the factors to be discussed do not operate in isolation but rather in conjunction with one another.

Section I: Participant Profiles

Demographics:

The thirteen participants, six female and seven male, ranged in age from seventeen- to nineteen-years-old. Six lived with one parent, seven with two. Their self-reported average grade throughout high school had a wide range from 60 to 92%, with a median of 80% and a mean of 79.5%.

Profiles:

The following thirteen profiles are intended to give the reader a brief apercu of the participants who took part in this study. They by no means do justice in capturing these outstanding, dynamic, and spirited young men and women, but do however, permit one to gain a cursory degree of familiarity. Please note CBI scores were ranked by gender.

1. **Alex** is a nineteen-year-old, right-handed woman who lives with her mother. She has two notably younger sisters and one much older brother. Alex sees herself as an only child

when considering her perceived family position. Alex obtained the fourth (tied) highest score on the CBI (80) and her estimated average grade throughout high school was seventy-eight percent. Her main creative domains are painting, sculpting and sports.

2. **Ani** is an eighteen-year-old, left-handed woman who lives with both her parents. Ani has two younger brothers and sees herself as the firstborn. Ani's CBI ranking was fifth (71). She has estimated her average grade to be eighty-eight percent and discussed painting, drawing and art design as her main creative domains.

3. **Axel** is an eighteen-year-old, right-handed male who lives with both his parents. He has two younger brothers and sees himself as the firstborn. His estimated average grade throughout high school is seventy-four percent. He obtained the fifth highest score on the CBI (81). Drama, comedy, being the school "ham", and sports rank as his main creative domains.

4. A nineteen-year-old, right-handed male, **Borts** alternates each week between living with his mother and his father. Having a twin brother, Borts sees himself as a middle child. His CBI score of forty-four (44) ranked seventh. His estimated high school average is eighty percent. He lists mathematics, physics, metaphysics and general problem-solving as his main creative domains.

5. **Dylan**, eighteen, is a right-handed male living with both his parents. He has two younger brothers and considers himself the firstborn. His estimated average grade throughout high school is eighty percent. Dylan ranked third on the CBI (100) and cites physics, mathematics, metaphysics and pottery as his main creative domains.

6. **Geoffrey**, nineteen, is a right-handed male who lives with both his parents. Geoffrey has

one older sister and sees himself as the youngest in terms of family position. His estimated average throughout high school is ninety percent. He obtained a CBI score of (82) ranking him fourth among males. His main creative domains are music and language (English class).

7. **Harvey**, a nineteen-year-old left handed male lives with his dad. Although he has two older brothers and one older sister, he sees himself as an only child. His estimated average throughout high school is sixty percent. He ranked second on the CBI (105). Drama, music and language (writing lyrics) are the domains Harvey identifies as his main creative areas.

8. A seventeen-year-old, right-handed female, **Janis** lives with her dad and his wife. She is the only child and perceives herself in this way. Her estimated average throughout high school is seventy percent. Janis ranked first on the CBI (107) and lists painting, sculpting and music as her main creative domains.

9. **Marie**, nineteen, is a right-handed female who lives with her mother. She has two younger brothers and perceives herself as the firstborn. Her estimated high school average is eighty-seven and she obtained a ranking of third on the CBI (92). Marie's main creative domains are music, student leadership, drama and art.

10. **Patrick** is a nineteen-year-old right-handed male who lives with both his parents. Patrick has one younger sister and one younger brother and perceives himself as the firstborn. He ranked first with a CBI of (132). His estimated high school average is seventy-five percent. Music, drawing, and language (English class) are his main creative domains.

11. **Shannon**, nineteen, is a right-handed female who lives with both her parents. She has

one much older sister and two younger sisters, yet she sees herself as the firstborn. Shannon ranked fourth (tied) on the CBI (80) and estimates her high school average grade to be ninety-two percent. Her main creative domains are language (poetry), puppet-shows and role-playing.

12. A right-handed nineteen-year-old male, **Steve** lives with both his parents. He has one younger and one older sister, as well as two younger brothers. Steve sees himself as a firstborn. His CBI score of (67) ranked sixth. Steve estimates his average high school grade to be eighty-five percent and his main creative domains are computer programming and sports.

13. **Sylvie**, eighteen, is a right-handed female who lives with her mother. Sylvie has two much older sisters and one much older brother. She also has one younger sister and sees herself as a firstborn. Her CBI score ranked second (94) and she estimates her high school average grade to be seventy-five percent. Her main creative domains are music, dancing, language (lyrics), drawing and painting.

Appendix M contains this information in table form for quick reference.

The three pronged technique for identifying creative young adults:

Employing a combination of methods for identifying creative individuals within a high school, for instance, both peer and teacher nominations, as well as the ratings from the CBI, as this study did, proved highly successful.

Five of the top ten students nominated by their teachers were also among the top ten students who were independently nominated by their peers. Furthermore, twelve of the thirteen students selected as a result of their obtained rating on the Creative Behavior Inventory were also

nominated by both their teachers and their peers. Additionally, eight of the thirteen participants had also won various awards in their previous year of school. These awards are as varied as: the National Math League Award, 2nd place in (OAPT) Provincial Physics Contest, Subject Awards in Music and French Immersion, Regional Finals at the Canadian Improv Games as well as Honour Society Plaques and Certificates.

Section II: Main Findings

In this section, the main themes that emerged as a result of the, questionnaire and participant interviews, and developed by the discovery process (an act of construction) will be presented. They are divided as they best fall within each of the four strands of creativity research. One should keep in mind that these four strands are not clearly distinct and that several emergent categories as well as their sub-categories could be placed under several strands.

This section will feature quotations taken directly from the transcripts and modified only by the addition of punctuation. Respondents were given a pseudonym of their choosing.

The Creative Person

Traditionally, research contained within this strand involves describing the creative human, often yielding lists of traits commonly found in creative people. Included is information concerning personality, intellect, temperament, physique, habits, attitudes, self-concept, value systems, defence mechanisms, and behaviour (Hunsaker, 1992; Rhodes, 1961/1987).

For the purposes of the present research both personality traits and cognitive abilities will be examined under the *Person* heading. However, biographical traits not previously outlined in the participant profiles will be examined in the, *family influence*, category under the *Environment* heading. As well, motivation will be discussed both here and in the next strand Process, because

the present findings suggest that participant motivation to create and to learn is, to a certain extent, fuelled by their curiosity which is customarily discussed in terms of a personality trait.

Esprit-Ouvert

Participants overwhelmingly (12/13) responded that they believe the most important characteristics that contribute to their creativity is their *open-mindedness* and their *willingness to try new things.* Sylvie explains, "Humm... I think me being open-minded helps. I guess, because, being open-minded, I have more interests in learning new things, and incorporating more things". Alex continues the same point referring to her art, "I'm willing to try new things. And I'm willing to go out there and look at different things and try to put things in different spots to see how it looks and stuff like that". Patrick adds by stating the main creative quality he sees in himself, "above all just, I like, experimenting, to try new things."

Ironically though, for some (5/13) it seems once they have given competing ideas equal time they are not afraid to commit and defend their decided upon point of view. Ani responds, when asked what characteristics about herself does she feel contribute to her creativity,

> ... like, an open-minded approach. Like, I mean, I do have my own opinions and moral views and stuff. But, there's also kind of a certain amount of open-mindedness you have to have. Because, I think without that, then it's hard to come up with new ideas and to see things in a different way ...

Borts, elaborates about not being afraid to stand by his convictions,

> ... I won't immediately get an opinion on something ... But eventually, after analysing it, I might end up with an opinion ... Because I do that, like, all of my opinions, they're very strong when I have one.

Therefore, it would appear that for a number of creative young adults, there exists a tension between keeping an open-mind and committing to one's convictions. Just under half the participants reported expending much effort in trying to keep an open-mind in order to suspend judgement whilst they considered alternate perspectives, yet once they have done this they were not afraid to defend their well-thought out and possibly unique views and ideas. This leads to the second category, *unrestricted.*

Unrestricted

Included within this category are the related topics *confidence, willingness to risk, unafraid of consequences*, and *challenging the status-quo*. Borts, for an example of being unafraid of consequences, has taken up knitting, a hobby which might not be considered by more conservative male adolescents for fear of being teased. Shannon explains why confidence is important, "... I think confidence helps a person be creative. Because even if you're creative but you're not confident, then you're probably not willing to share it and if you don't share your creativity, then you're less likely to keep being creative."

Additionally, Sylvie elucidates how being unrestricted is an important aspect to her creativity:

> Um. I'm not really scared to show what I think. And I'm not scared of what other people think about my opinions. So, I think that helps me in my creativity because I don't feel restricted. Like, I just go all out with it.

Although, being unrestricted may be conducive to creative pursuits, one's uninhibited acts are not always expressed in socially desirable ways. For example, like most participants, Axel responded that he is not afraid to share his creativity; Axel states, "my willingness to do

things. Like, I don't really care unless we get in trouble for things". Later he explained that "trouble" meant negative repercussions from school administrators or the Law. Unlike the other young adults involved in this study, Axel has been in trouble on several occasions from school authorities in the past for making humourous, although inappropriate comments and had once gone joy riding with a friend, a decision which netted him 100 hours of community time. Axel also enjoys pushing the boundaries of accepted behaviour within the school; for instance, on one occasion he used an empty cereal box to carry his books into the library only to next proceed to ask the librarian if he was permitted to eat. In fact, his interview had to be relocated to another area within the school because he is banned from the library and adjoining seminar rooms.

He explains that he is always trying to be funny and to shake up established routines; his latest scheme was to release live animals into the school. It is interesting to note that he was the only high scoring CBI candidate who had received a considerable amount of nominations from his peers (2nd overall male), yet had not received a single nomination from his teachers. It should also be noted that Axel has participated in a large number of extra-curricular activities, including, being the Master of Ceremonies for a school fashion show, being a fortune teller during a casino night, and rapping during a coffee house night-- activities the school threatened to remove him from because of his off-handed attempts to be humourous. These findings appear to suggest that the positive feedback from his peers coupled with a perceived lack of support from his teachers has contributed to his shifting most of his creative energy into the peer judged social arena rather than toward school endeavours.

Other participants describe overcoming self-doubt initiated by teacher and peer pressure as they gain more knowledge in their areas of interest and their confidence grows. Steve

remarks,

> sometimes you just, you know, you have a question and you think, you're wondering like, 'Should I ask this?' you know, because you don't want to feel stupid ... But I think I've gotten over it now. Because like, I have a deep command of like, what's going on in class...

Confidence also appears to grow as one's identity becomes more defined. Geoffrey affirms that he has gained in confidence with each passing year. As we discuss this point he states that "trying to be different, keeping it real ... " is important to him, and that, " ... I'm not that worried about, like, what other people think really, I just sort of do it." But when asked if has always been that way, he replies, "probably mostly as I got older. Like, even in the past couple of years I'd say ... before I think I was a lot more concerned ..."

Additionally, confidence may be undermined when creative products are displayed before one feels they are completed. Janis elaborates,

> No, I don't find it hard [displaying my art]. Except there were, I think I had five paintings and then a few other little things. But we had five to do all at once. So, some of them were, two of them were sort of rushed. And I really don't like showing people something if I could have done it better.

Together with an *esprit-ouvert* and an *unrestricted* nature, participants also described having an *active mind* as important characteristics they see in themselves contributing to their creativity.

Active Mind

The category *active mind* consists of three components which feature considerable

overlap with one another. They are *intrinsic motivation* as related to *curiosity*, and *imagination.* Most of the participants (12/13) express having an active, curious mind. Steve, for instance, explains his enjoyment in working with a new computer product, " [I] get a new program, I like to check it out ... that's another way I try to use my creativity ... I just do it myself ... I explore stuff". Others, like Axel describe how, " ... for like an hour, I'd lie in bed because I had too many thoughts running through my head". Similarly, for Dylan, as well as the other participants, curiosity is ever present and learning is largely internally motivated as a result of it; " ... [I] have a need to know more ... there's so many questions to ask ... I remember, I used to go to the stream and I would take a sample of water and then I'd see what would grow out of it ...". He juxtaposes his home life with his current school situation,

> I mean, I would go and learn just for the sake of learning if I could ... Because [at school] I'm learning for the sake of testing. I mean, and not, I'm not learning for the sake of learning anymore, you know, I mean, it just takes all the, it takes the essence of it away.

Many of the participants also described playing creative games and doing creative things just for the enjoyment and satisfaction of it. For instance Harvey recounts,

> ... We play rhyming games, my band, like I'll sit around, and we'll be watching T.V. and I'll say, like "this show is wack!" and then Bandmate 1 will say; "yea, that guy's like smoking crack." and then Bandmate 2 will go: "I want to go get a snack" And I'll say, "when are you coming back?" ... we play rhyming games all the time.

As well, Shannon explains how she makes her younger sister who attends a local arts

based high school teach her what she has learned; "I make her teach me all the stuff that they do". One of the games she has learned is the writing marathon game which consists of brainstorming five themes and writing a story that incorporates each theme. Shannon demonstrates a great deal of motivation for engaging in creative play as evidenced by the following passage:

> ... there have been times when I'll be like sitting there. And I'll have tons of homework and stuff. And, but like, and it's like eleven o'clock at night. I've finished everything and then I'll turn to my sister and I'll be like, "We HAVE to have a writing marathon right now!" And she's like, "You're crazy! I have to go to sleep." I'm like, "No. We HAVE to have a writing marathon right now!"

Last, participants (4/13) also cited an active imagination as an ability or characteristic of their creative personality. Marie summed it best when asked what characteristics she felt contributed to her creativity:

> I think my imagination. How I can just be in a certain situation and if I'm bored, the first thing that kicks in is not just going to be staring at the wall, it's going to be just imagining scenes ... that kind of thing.

In sum, participants focussed on three main personality traits/abilities. These were captured in the categories and sub-categories of *esprit-ouvert*, *unrestricted* and *active mind.* Outlined next will be the emergent themes that loosely fall under the Process branch of creativity research.

The Creative Process

Typically discussed within the creative process strand are steps or stages, motivation, perception, a variety of techniques, as well as learning, thinking, and communicating styles. For the purposes of this discussion participant's motivation for engaging in creative activities as well as several techniques for successfully beginning and accomplishing creative endeavours are explored.

Creativity's "Pull"

Some participants (5/13) describe getting spurred on by perceiving a problem and wanting to test out an idea or a possible solution. For example, Borts outlines the process,

> Well, it usually starts off, I guess, with like analysing, I guess. And then, it goes kind of from there ... Like that main section of the wallet. The main part, you know, like, I don't really need that. And I'll go, like, I'll end up getting an idea from there kind of. Like it's usually triggered by something around me. Like, I'll analyse something ... and then I'll just kind of go from there.

Numerous other participants (9/13) also recount the creative feeling as something that just comes over them almost forcing them to engage in a project until it is accomplished. For many their emotions or mood act as the impetus to creative endeavours. Dylan states, " ... it's raw emotion. And emotion is important to creativity. So you get a feeling and then when you're ready to create, you have inspiration, when there's that feeling, that moment". Sylvie elaborates, " ... I have an urge to draw or write something, I just start and everything just flows from there". At another point she states, "When I get really emotional that's when I tend to do my best, like that's when I tend to go crazy on my guitar, and I just do crazy drawings".

However, these emotions or feelings are not always the progeny of a positive mood. One participant, Harvey, describes his creativity as an, "energy that I just have to get out.... if I have a lot of insanity that I want to get out, I can focus it in a certain direction, play music or acting", he continues, " ... it's good to have the highest emotion possible", a process he has labelled a focussed tantrum. When asked to elaborate about what a focussed tantrum means to him upon deeper introspection he replied, " ... part of my reasoning behind why I'm so creative is because it's rebellion. It's spite." As we discuss this further it becomes more evident that many of his creative endeavours were accomplished as result of being told he was not good enough or that he simply could not succeed. For him one of the most important components contributing to his creativity was spite. This is perhaps not surprising considering several (5/13) respondents reported being strongly committed to their convictions once they had considered a variety of sources.

Creativity, the Wonder Drug

Related to the notion that creativity may at times result from negative affect are its reported therapeutic effects. Participants (11/13) report getting much enjoyment and happiness from the creative process. Ani states, "I try to be creative in everything I do, because I find it fun." Additionally, Janis clarifies why she likes sculpting and painting, "just because I'm usually happy with it after and it's calming, I like it." But, perhaps of greater significance, engaging in creative acts is seen as a therapeutic, effective coping mechanism.

> Being creative is like, a coping skill kind of.... I'm more creative if I'm having a bad day. Or if I feel terrible ... I have to think of new ways to cope with it in certain ways, like, playing music or by like, just doing stuff that isn't just so

methodical. (Marie)

These examples suggest viewing the creative process in terms of a coping mechanism will require additional research involving a wider range of participants in order to further explore the present findings. However, the following examples do suggests that for some creativity may not only help relieve tension and negative affect but may actually replace these negative feelings with feelings of calmness and well-being.

Other People's Ideas: A Catalyst

Having acquired the drive to begin a project, another crucial element to the creative process is generating ideas. It should not be assumed that creativity is always accessible at will. One participant, Steve, explains that "sometimes, you know, I just won't have too many ideas.... Other times, I'll have a whole flood of ideas just come to mind, based on, like, different experiences I have had". That ideas and creative endeavours are not always easily started ties into another central theme to the creative process, using other's ideas as a springboard to the commencement of one's own projects. A large majority of participants (11/13) appear to get a spark from other's ideas. Using these ideas as a springboard for their own endeavours, they begin to incorporate and adapt many ideas into new areas that meet their particular needs.

Applying other people's ideas as a starting point for one's own creative endeavours appears to be a common, pro-active, practice among creative young adults. They were quick to add, however, that they are not copying others' ideas, but rather adding them to an eclectic incorporation of adapted ideas transformed to best suit the situation at hand. Geoffrey explains "... I do take a lot of influences from other people. But I only take it in terms of like, as a starting point." Steve elaborates,

> I try to look at those [other's] abilities and say, "Well, look, this guy's got a neat talent." And then I try to like, feed off of the ideas of other people. Like, if I give you a specific example, the computer class, I go around and look at different people's programs. Not to go around and copy their ideas. But to go around and see what they're doing, to spark some of the creativity that I have. And, in turn, I go around and help other people and show them the ideas I've come up with.

The use of another's ideas as a catalyst to one's own creativity is not restricted to any one subject area Alex, an artist affirms that "I can look at someone else's [painting] and be like, 'Wow! Their composition's great!' And then, see what ideas I can take from them, but, incorporate it into my own stuff". Feed, spark and fuel were some of the metaphors used to explain this inspirational springboard process.

Not only does seeing another's work act as a catalyst to one's own creativity but it also appears to actually enhance one's talent as well as creative abilities. Ani elaborates this point while recounting her experience of having taken a class from a local School of Art, "Seeing, having other people in the class who, you know, like of various ages, and various levels of experience, and seeing their creativity has kind of enhance[d] my abilities and made me a bit more creative."

Once one has both the drive and the ideas to begin a creative endeavour one must take the tentative yet crucial initial step, beginning. This facet of the creative experience is explored below.

Just have to start

That one must begin a creative project before one may persist in seeing it to fruition may

seem obvious; however, this crucial initial step is one of creativity's greatest hurdles. Overwhelmingly (13/13), participants described following through with the urge to create by actually beginning. *Just have to start* is often accompanied with such starting techniques as traditional language based brainstorming as well as visual and musical brainstorming. Ani explains, "I just, like brought out my pastels and started drawing images and I just kept going. I just kept moving the paper along until I was tired". She subsequently organizes the images and sorts out what she likes. Sylvie corroborates with her description of composing music, "usually it's just me playing around, until I find something I like or sounds good to me."

Viewing a project as a work in progress is also helpful when beginning a creative endeavour. According to Geoffrey,

> Usually I start off with a whole bunch of different ideas in my head.... then I just start doing it and then usually, I'll like do a rough of what I want to do and then look back at it and change pretty much everything, usually then I end up with like a completely new thing.

Similarly, other participants also described this process of viewing a creative project as a "draft" both while beginning and proceeding through the various stages until completion. Moreover, even upon "completion" they are still willing to modify it after they have gained some distance; "when I'm satisfied with it, then I just set it aside and I'll leave it for maybe two days. Then I come back and look at it ... [and] I do a lot of changes." explained Ani.

Having acquired the drive, the ideas and the willingness to take that first plunge, participants also report requiring alone time to work out and experiment with their creative ideas and projects.

Time

Captured within the category *time* are the tensions between wanting to be social and the need for alone time, as well as the tension between wanting to undertake creative endeavours, which is often time consuming, and lacking the necessary time required to complete one's school work. These themes are further explored in *time*'s two sub-categories, *alone time,* and *time constraints.*

A large proportion of participants (9/13) reported requiring at least some time alone in order to explore and toy with their creative ideas and projects. " ... I get a lot of, like, ideas, I guess while I'm alone" explains Borts. However, with the time consuming demands related to school, extra-curricular activities, work and leisure pursuits, alone time is an event that is often hard to experience. Sylvie elucidates, " ... I never have enough time to just.... so, I find just, not having enough time to just be by myself and do stuff on my own, that sort of prevents me [from being creative]."

Others (7/13) find their need to be with people and their need for alone time in order to create at odds. Axel explains,

> I know I can go to bed whenever I want. But I can't really, because, there's too many thoughts running through my head. And that's just the only time I'm alone ... I'm not even alone till the last minute. Like for some reason I always want to be around people.... So when I finally am alone and I know I'm going to be alone for the rest of the night, then I can actually have time to think and do things.

The second component to the category time, is *time constraints*. This sub-category includes the effects of not having enough time for one's creative pursuits, although, one should

also recall the negative effects associated with rushing one's creative endeavours (see Janis under the category Unrestricted). Harvey provides a graphic example of having no time,

> But, I don't do well in school because like, I do have a lot of extra-curricular activities. Like my band. I practice with them Mondays, Wednesdays and Saturdays. I have play rehearsals Tuesdays, Thursdays and Sundays.... I'm really, really tired because of all these things I do.

For several participants (4/13), lack of time and motivation has resulted in incomplete homework. For others (5/13), it is not the school work that suffers along with the creativity; instead it is mostly the creative activities. For example, Ani describes the effects of time constraints on her art,

> Like I said before that, that having my feet in all these different areas is an asset. But it's, it's also a little bit of a hindrance. Because I spend time on all these other things, I don't, I find, I push my art aside a lot.

In sum, the participants of this study help us grasp the creative process by highlighting a number of themes related to creativity's attraction, its therapeutic effects, the heuristic nature of having others' ideas as a starting point, the need to begin, and the tensions created by needing time alone as well as the constraints imposed by lack of time. Next we examine environmental factors which affect one's creativity.

The Creative Environment (Press)

The creative environment, sometimes referred to as press, typically involves descriptions of social and psychological environments. These are generally spoken of in terms of situations

which help or hinder creativity. The following environment section features six main themes emerging from this study.

Family influence

The category, family influence, is divided into two components: *parental influence* and *sibling effect*. The findings of this study suggest that parents play a substantial role in the development of creativity. Their influence appears manifold. Many participants cite their parents (or close family relative) as a role-model whom they have striven and continue to strive to emulate. Just under half of the parents connected to this study are involved in the artistic community as artists, musicians, writers, and art teachers, etc. Simply knowing that one's parents were creative also provides tacit approval of one's own creativity. As well, by actively engaging in creative endeavours with their children, parents are assuming a dual role. They act as the primary initiator, exposing their children at an early age to creative endeavours, and also they provide a role model for emulation. Dylan explains,

> My Mom is an artist and my Dad is a veterinarian. And I guess I've seen a lot of things that, I don't know, I had a different upbringing from a lot of people.... my Mother's studio also inspires me. She has a pottery studio.

Janis has similar recollections, "my Dad used to always draw with me when I was younger. He teaches Art and Photography."

Furthermore, parents play an important role by providing encouragement and opportunities for exploration both within and outside the home. Sacha remembers, "My mom she actually kept stuff that I've done. So it makes me feel proud ... I guess my mom was the biggest influence." Sylvie elaborates, "my family helps me too. Because I come from a pretty

artistic family. My Mother ... was a musician. She encourages me a lot with my art work and my music... She'll ask me to go experiment with things". Shannon also recalls,

> we were allowed to experiment with a lot of things. Like if there was, if they'd bought us a game, and we found a different way of playing it. You know, how some parents are like "No! That's not the right way." ... They'd let us just explore and like ... as long as it wasn't like, unsafe.

Moreover, Steve remembers,

> Well, my parents definitely always encourage me to do things well. To explore possibilities.... Like try things out and see what you see of them.... They haven't like restricted me, they just allow me to explore the world. Meeting people, learn stuff.

Parents also provided special enrichment opportunities for their children by permitting and paying for them to take classes or lessons of their choosing. They also purchased chemistry sets, musical instruments, painting supplies as well as other equipment needed for learning and completing creative projects. It is interesting to note that hands-on toys, and specifically Lego building blocks, were cited on several occasions as an important creativity enhancement. As well, many participants remembered being permitted to play with the family furniture, erecting forts and structures which were allowed to stand for several days without fear of negative repercussions.

Participants (10/13) perceived their parents as employing what can be characterised as an authoritative discipline style, a term coined and defined by Diana Baumrind to describe "a flexible style of parenting in which adults allow their children autonomy but are careful to

explain the restrictions they impose..." (Shaffer, 1989). Their parents have created a risk-free environment where their children are free to explore alternative perspectives. Marie reflects that she, "never felt like, pressured to conform to any kind of ideal...". Participants also recall having opportunities to voice their disagreement about issues. Shannon describes the family rules as being open to question, "I was given an explanation. I was allowed to ask questions. And it made it possible for me to, like, challenge things". Other participants report that their families still hold weekly meetings. Conflicts were largely resolved through discussion. If the participants had misbehaved they were not harshly punished. In fact, most reported that the fact that they had disappointed their parents was enough to make them change their behaviour. Harvey describes, "I don't give my parents any reason not to trust me.... If there's something wrong with what I'm doing. Like, if I do something bad, I'll make sure I don't do it again.". As well, Sylvie explains, "Basically my punishment is [my mother's] disappointment. And that just kills me, I can't stand that. I would rather be grounded. I would rather have privileges taken away". Much respect between both parents and children was evidenced. Steve on the subject, "I respect them and they respect me.... If there is a problem at all, you know, we talk something out and we'll solve it."

Parents connected to this study appear to have also set clear expectations for their children. For example, John states "... my parents set expectations for me." Ani clarifies by quoting her parents, " 'We expect you to try your best', like, 'Just try your best, you don't have to be perfect..."

Closely related to parental influences and included in the category *family influences* is the *sibling effect*. An intrinsic facet of the *sibling effect* is birth order. The findings tentatively

suggest that being the first born and having younger siblings of the same gender is a positive influence on one's creativity. Younger siblings were seen as providing safe companions to share and explore ideas with. They also provided opportunities to play "younger" games again and were seen as a source of inspiration. Several participants (3/13) of both genders discussed enjoying playing role-playing games, such as "house" or "garbage man", as well as other hands-on games with their younger brothers or sisters of the same gender. Participants explained that role-playing games contributed to their empathy development and their ability to take on alternate perspectives which became an asset to their creativity. Shannon reflects, " ... life's just like role-playing. And like, having like, because you get to experience, like whatever you want really, without having to actually be in that position".

An excerpt from Steve's transcript helps clarify the sibling dynamic:

> Oh, definitely, like, having sisters and brothers is a great thing for creativity ... you can get together, build some houses. We did a lot of things. We, like, play Transformers. I played Transformers all the time. My brothers, I have two brothers.... They're younger, they're both younger. Oh, yea, definitely having a good home and siblings around. Like there's five kids in our family. That's a big family. There's always someone around to do something with. So, I mean, that definitely encourages my creative behaviour.

It is interesting to note that although Steve claims that his younger and older sisters, and his younger brothers have played important roles in fostering a creative environment, each of his subsequent examples exclusively involve his two younger brothers and not his younger and older sisters. This is consistent with other participants, both male and female, who have younger

siblings of the same gender.

However, the perceived benefits of being the older sibling are juxtaposed with feelings of pressure as result of being a role-model for their younger brothers or sisters. This pressure seemed to stem from their parents as well as their own desire to set a good example for their younger siblings to follow. One participant explains how his sense of responsibility comes as a result of wanting to please his parents. A passage taken from Axel's transcript illuminates:

A. But, yea, I don't know, my parents don't really want me to set a bad example for my brother by doing too many, crazy things. They just want to put like, a limit on my, like I guess they don't really limit my creativity. Just, diminish it a little bit, maybe. Just to make sure, well, if it's creative, in a good sense, it's O.K. But, if it's creative in a bad sense, that's sort of, you know, it's different. Because, they'll like it if it's good. Like "it's a good influence on your brother"

Q. What would be like, one example for each one? What's good creative? And, what's bad creative?

A. Yea, well like, good creative like, going in a play.

Q. O.k.

A. Being a member of a play, or whatever.

Q. Yea.

A. They think that's good. It shows some outgoingness. "And your brother will", like, I was in a play, maybe I'm going to be in a band, or something. He's done stuff like that too, so...

Q. Right.

A. And, a bad one would be like, like trapping raccoons and letting them loose in the school.

Additionally, being the only child was also perceived as a positive contributor to one's creative endeavours. Janis explains that being the only child, "probably helped because, there's more time for me to ask my Dad about something or to you know, to go get something for me, or sit down with me". This may only be the case when one's parent is also creative.

On the other hand, having older siblings of the same sex was actually seen as detrimental to one's creativity by limiting one's freedom to explore. Harvey explains,

> Oh, my goodness! I was really quiet. Really, really quiet. So, it would have to be, I don't know, I think it was grade nine. Grade nine, both my brothers moved out and my sister had already moved out. And, it was basically me. And, I had a free reign. It was like this new freedom. And I totally opened up.

Later in the interview Harvey clarifies that his two brothers were the main factors hindering his freedom, "they were bad asses. And like especially my two brothers, they caused so much havoc". Additionally, he explains that as he changed and opened-up, his subsequent relationship with his parents also became more trust-based and free.

Finally, siblings of the same sex and age (twins, male), or younger and older siblings of the opposite sex, did not seem to be a contributing factor. That said, one must keep in mind the "discovery" nature of the present study. Needed are more opportunities, beyond the limitations of the present study, for theoretical sampling in order to clarify variations.

Peers & Peer Friendships

Paradoxically, peers were perceived as being both helpful and detrimental to creative

endeavours. Judging from the participant interviews, it would appear that at this adolescent age the perceived division between peers and friends is not clear cut. Rather the line between peers and friends is blurred. Moreover, similar to the trust and freedom creative individuals find in their younger siblings of the same gender, friends were also perceived as providing a safe environment for creative ideas by suspending judgment. Borts states, " ... my friends they're a positive encouragement.... like, if I'll discuss it with them, they won't just go like, 'Oh that's stupid.' or anything like that."

Friends are also seen as a source and an outlet to share and test one's ideas. Marie explains, "[friends] help because we can bounce things off each other and just hang out and things like that. Yea, because if everyone you hang out with is open to new ideas, then you end up getting really interesting discussions." Sylvie elaborates,

> I find I can be creative the most when I'm with my friends. Because, well most of my friends are really creative people too. And they, it's just like we feed off of each other. All the creative energies.... we just combine.... When I'm with my friends, I find I can just let things hang out.

Not only do friends provide a safe and inspiring environment, they also help legitimize one's creative identity by seeking out one's input on creative matters. Alex explains when asked who has encouraged her creative pursuits, "My friends have.... they'll come and ask me, and my opinion, like on drawings. Or if they need help with stuff.... They thought I was good. So that makes me want to do more stuff."

Peers can also be detrimental, however, when they exert pressure on each other to conform. Comparing her previous arts based high school to her present one, Sylvie said,

> ... It was more accepting. "I accept you for who you are. You may dress differently.". And, I found that helped me a lot with my creativity. Because I didn't feel a need to conform to something and I didn't feel the need to dress a certain way or to restrict myself. I find there's more pressure here to do that.... but it's getting better because I'm meeting more people.

Steve insightfully posits, "as you go along in school, there's peer pressure. Like you don't want to ask too many questions or you're going to get a label of a nerd..." However, later he is quick to explain that this reticence to ask questions may apply in the classroom, but not everywhere.

As people gradually mature, meeting peers within the school offers the unique opportunity to locate like-minded individuals who share their interests. The following rich dialogue taken from Steve's interview illuminates both how some aspects of peer pressure operate as well as how opportunities for creative enrichment develop over time.

> You know, everybody's different. Everybody's so interesting. But, you don't see that in the classroom ... Because people are conforming. That's why I also think, like, when I'm playing sports, I'm like, I see the guy that's in my Math class all the time, in the back, and he's always asleep. I went to see him out on the court, and I'm like, "Holy cow! This guy's got a great talent in sports! And certain thing, when I'm going like, to a music show or something, when the bands are playing. Like, "Oh, these guys have great music style." And you don't see that in school, so ...Yea, when I go to like, yea, I see my friends play, that's another thing, creative behaviour, is when they get together and make their own bands. Wow! That's a real good piece, you make your own music. And that's what they're

doing, on their own and, and I, it's not really at school... And, it's something, like, it's good! I mean, I guess it just doesn't really happen as much with people getting together and discussing Math and Science. But no, but I think there, I'd like, I mean there's, I know a group of friends that are good at Math and Science. And they're always talking about stuff that they learned.... Like in that way, peer pressure is, like you don't have to worry about peer pressure, because it's like, this group of people, they always sit at lunch and play cards, or chess, or whatever. And you know, always talking about their own, like Science, writing their own thing, you know. And, that's a good thing about high school. Just finally, in high school, people stop, like picking on the guy that's always talking about rockets.... Like, there's always a guy like that's kind of outcast by their friends, because, like he's always, like there's a guy that I know, everybody called him "Space Boy". Up until grade nine or ten, when people get more mature... And finally, like I saw in grade ten, you know, he met guys with similar interests and now I see every day at lunch, they're playing cards or playing chess. They are having interesting conversations. So, I guess in that, in the sense, I might be wrong... In the classroom, yes peer pressure is a big thing people are afraid to ask a question. Maybe you're feeling stupid. But, then again, in high school, people are more mature. You know, they respect each other. No one's going to call you names if you, people are interested in Science or whatever. And then you can get, and people form groups with people that think like them. And then a lot of creative thoughts flow from that. Like, I think that's what I see, like, Person X, that's neat,

> talking about rockets. Now I talk to him and "Wow! This guy knows a lot!" And I'm happy, like he didn't get frustrated from all the people that were calling him names.

Several key ideas emerge throughout this particularly rich excerpt from the interview with Steve. Steve provides clues to the tension between school as a social meeting area and the peer pressure that is sometimes experienced by high school students. Schools have the capacity to both foster creative acts, by bringing people with similar interests together, or discourage them by creating classroom arenas where questions are not welcomed.

Community enrichment opportunities

This category includes two components: the search and formation of like-minded groups, and the seeking out of specialized training in order to advance one's craft. As the last transcript excerpt by Steve demonstrates, communities of like-minded individuals develop and evolve. Protected in safe solidarity, individuals encourage and push each other's creative interests forward. Spurred on through group interaction, each member offers unique contributions which results in a dynamic, synergistic exchange of creative thought.

Additionally, most of the participants (11/13) in this study have sought out more advanced training, in their specific areas of interest, than the school was seen as capable of providing. In order to hone their skills, participants enthusiastically enrolled in enrichment opportunities ranging from theatre troops, a variety of art lessons, as well as music and singing lessons. They also took full advantage of as many extra-curricular activities as the school had to offer, organizing and participating in fashion shows, music and poetry coffee house nights, and taking up social causes. The significance of these opportunities is discussed below.

School

This category comprises three main sub-categories which are *a) subject matter and assignments, b) teachers* and *c) extra-curricular activities*. Together these sub-categories help to demonstrate the important, positive and negative, role schools play in the development of creativity.

Subject matter alone did not seem to be a relevant factor in determining whether a course would be perceived as fostering creativity or not. Students cited Mathematics, Physics, English, Arts and Computer Science as both conducive and repressive to creative endeavours. What did appear as significant, however, were both the student's "giftedness" or mastery of the subject area (see also creative Product section) and the teacher's pedagogical style. For example, Borts, a gifted student in math, ponders his love of mathematics,

> ... that's probably why I like math.... I find math teachers are more open.... like you can get to the answer in a different method.... if you haven't quite been taught yet and you kind of like just have to take it, just a little bit farther.

Yet, Shannon, an accomplished writer, perceives things differently, "there's not much room to be creative in Math.... There's not much room for creativity there."

Some degree of proficiency or talent combined with class settings and assignments that encourage (or at least permit), exploration, hands-on discovery, student control of their own acceleration, and a general outline containing clear criteria of basic expectations, appeared to create an ideal learning environment for creativity to flourish. For example, Steve describes his creative experience in computer science class,

> Well right now, it's making my own program, which is a real nice feeling. You're

> making your program and you can pretend, you can put a copyright on a diskette, and like, make believe. And you know, it's like, you designed it. No one's telling you, all you're told is what it's got to do, but the rest is up to you.

Sara, states that her creativity is hindered if a class or assignment has too many prescribed guidelines, "... if there's only a certain way they want things done. And so, basically any student can go and learn how they want things done and they can't be creative in how they do it." Geoffrey enjoys when he is expected to be creative, "... one [class] where you're kind of, a lot of times it's good if you're expected to be doing something [creative]. Because, that way, like you feel you have to be sort of just, you do it, that way..."

Over half the participants cited their OAC Independent Study (OAC- IS) project as an assignment which pushed and fostered their creativity (Note: This assignment is a major project which students undertake on their own on a topic of their choosing). Perhaps this occurs because the (OAC-IS) meets the conditions outlined above for assignments that are ideal for creativity to flourish. For example, the (OAC IS) is an assignment that permits in-depth exploration, discovery, student control of their own acceleration and a general framework containing clear evaluation criteria. Harvey states, "But if I could write something, if I could just like, more independent study, like if the class were more like the Independent Study I think I'd learn a lot more."

Characteristics mentioned most often relating to a "good" teacher were teachers who gave encouragement and valued creativity but also who taught techniques and allowed experimentation. Patrick explains, "She [best teacher he ever had] was very good because she just, she encouraged me... and she just, she taught like, she taught you like styles and stuff, but

she allowed you to experiment within those styles.". Ani, describing what a "good" teacher does, "tell[s] me what's going on and give[s] me feedback and also teach[es] me the techniques so that you have the knowledge... [teachers need to] give you enough tools".

Additionally, creative students seem to respond best to teachers who display a true passion and enthusiasm for their chosen subject areas, are dedicated, and genuinely care for their students' learning and well-being. Students often spoke of teachers responding to their questions with suggestions for additional resources as they engaged in lengthy discussions after regular school hours. Borts contrasts two situations, one with his Biology teacher and the other with his math teacher,

> ... And I have a teacher and she, almost, I'll ask questions on Biological models and her answers are always "It's just a model." She won't say, "Well, I don't know the answer." or, "Yea, that's a problem with the model." She'll just say, "It's just a model." As in, "It doesn't have to make sense"... So, what's the point of even taking that class? ... And like, then I have another teacher, Mr. X. Like, I was arguing one question with him. It was on "finding the slope of a line". And, anyway, I ended up by discussing it. And, I remember, like 75 minutes after class. Just on, like that one little thing. And he was totally open to it. And like, he was a really good teacher. Like, he's very open. I remember he said something about like, he introduced, just yesterday, about the idea of, I didn't know what a paradigm was. And he told me, "Like, it's just a way of thinking. Where if you just think down this one path, like, you're not open to all these other things." And he was mentioning how, he even related it to a professor, or something like that,

in Toronto...

"Bad" teachers were often characterized as being rigid, defensive when questioned, and seemingly uncaring and unpassionate about their students and subject areas, as the above example illustrates.

It should be noted that creative students are quite demanding of their teachers, expecting much devotion, dedication and enthusiasm. Without this they often disengage. Moreover, it should be recognized that the conditions for creativity to flourish are not unique to school environments, but rather are characteristics which optimize creativity in environments in general. The creative students in this study not only demonstrated their creativity within the regular classroom setting, but also overwhelmingly participated in, organized, and attended extra-curricular activities associated with the school.

Extra-curricular activities, are not only a high point of many creative activities but they also allow students the opportunity to display their creative talents in ways not always accepted within regular school routines. As well, they provide creative students an arena for their creative offerings as well as a sense of connectedness to their peers and school which might not otherwise be permitted to flourish. Such an opportunity is of particular importance to students like Axel whose creative expression is not typically encouraged by teachers and the regular curriculum.

Axel discusses why he participates in numerous events, including the Fashion Show, Casino Night, and Coffee House.

> Just like, all the events are chances to be creative, that's why I go to them.... This year was like super crazy, because I was trying to get involved in every single thing, and then there was my school work, I was trying, my parents wanted me to

> get, I had a scholarship from Carleton.

It is telling to see his contrasting motivation between extra-curricular events, where he felt he could be creative, and school work which he seemed to be doing to please his parents. For Marie the story is similar, she describes how extra-curricular activities allow her to demonstrate her creativity,

> ... I guess I'm pretty much obsessed with extra-curricular activities. Like, I have to balance the rest of my life off of doing things like that. Because there isn't, I don't have a chance to be able to do that in school. Like, in grade nine, when we come to school, you can't take Music AND Drama. So you have to pick one. So, I took Music, but then they cut this program from our school. So, I wasn't doing Music anymore.

When one considers the many activities, apart and with the school, enrolled in by these participants, creative young adults appear to be active harvesters of their own creativity, seeking outlets to cultivate their talents beyond what the normal school curriculum is able to provide.

Sports

Another area related to the global school experience is creativity in sport. Sports as an avenue for expressing one's creativity was also reported by several participants (4/13), both male and female. It appears that sports help to focus as well as free one's mind. Dylan states, "sports sort of clears my mind of distractions." For Axel sports provide an arena for his creative expression, "well, when I play hockey, I always do crazy moves. I do weird moves like make up new moves, like to deke people out..." Likewise, Alex states, "[referring to soccer] like the way I could see it, like going to get the ball would be like a completely different way for someone else.

So I guess it gives you the upper hand. But also they're thinking something different." This further suggests that creativity must be coupled with a vehicle for its expression, where at least some measure of talent or proficiency exists, if a creative product is to result. For some participants sports provided that vehicle.

Nature: Our Wildlands

Many participants (8/13) cited nature, defined as the forces and processes that happen or exist independently of people, as an environment that encouraged creativity. Participants reported several ways in which nature evoked their creativity. For example, nature for them was seen as relaxing, peaceful, and a milieu which permitted emotions to surface by inducing introspection. As well, by virtue of its inherent beauty which embodies many divergent themes and patterns, nature was perceived as an inspiring environment that sparked and facilitated the generation of ideas and the making of connections.

The following is a tapestry of quotations culled from several transcripts: Patrick, "[nature] relaxes me. Like it just lets me think more clearly."; Shannon, "in the kayak, I'll go out to the middle of the lake ... my journal with me.... the stuff that I write there is so much more, they're more like, from really, from like my, inside me.... really true to myself."; Sylvie, "I find it so beautiful, and I guess intriguing in a way, because it's not man-made.... I find it very inspiring. I feel at peace with myself too ... and that helps me do creative things."; Dylan, "when I'm in the woods. Like it's just ... everything is connected, the intricacy, you know how like you just see the whole big picture, how one thing is linked to another.". A final summary comes from Ani:

> because it's really quiet. And, there, like, I don't know, you can hear the birds and, like the crickets or whatever. And there's like this little, forest noises, like the

> wind in the trees. And there's, like throughout history, a lot of people's ideas, a lot of patterns that you see in everything, are patterns in nature.... you just get ideas. Because it just, it's an environment where your feelings and, are allowed to come out. Like, there's no one there. You're just walking by yourself. It's quiet.

That nature was prominently expressed as a creativity inducing environment is not surprising, if one recalls from the literature review the characteristics of creative products that are most frequently mentioned: *novelty*, *usefulness*, and *harmony* or *elegance* (Voss & Means, 1989). If one is aware that many creative people require one or a combination of the following factors, alone time, a "free" and relaxing atmosphere, as well as an environment replete with ideas waiting to act as a catalyst, exactly why nature appears to induce creativity becomes more clear. Walking into nature can metaphorically be characterized as walking into the very essence of a creative thought.

The Creative Product

Creative products are generally thought of in terms of tangible evidence to creative acts. Bailin (1984, 1988), for instance, argues that one cannot be considered creative without creating tangible products. However, others take a more process oriented definition which simply requires the perception of an important relation where one had not been previously known (Koestler, 1964; Voss & Means, 1989). Still others see creativity as a response to an ill-defined problem (Hayes, 1981). Participants involved in this study have created products that correspond to aspects of each the criteria mentioned above.

Products in Process

Students in this study were involved in a wide variety of creative activity which resulted

in many creative products; including Independent Studies, theatre arts performances, various problem-solving endeavours, professional music performances, poetry and other literary publications, paintings, and unique sport manoeuvres. One component that these completed projects share is their state of flux. For much time after they are seemingly finished, participants often modified their creative projects several times before finally "letting go".

It is also of interest that three participants viewed creativity as a processual, ill-defined response, that not only included tangible products, but also mental activities such as generating ideas and perceiving connections, and therefore, not requiring a final concrete product. For example, Borts viewed engaging in profound, existential conversations, and generating ideas as an, albeit non-tangible, product of creativity. He states, "... the product is the product of a thought, and without the thought there is no creativity." Dylan described creativity as perceiving connections within nature and contemplating "the questions that really bother me.... I can just see the big picture and how everything is related." For others in order for their creativity to result in a final product they engaged in a *process* that required *complementary exchanges* between individuals. Other participants elaborated on their perceived need to convey their creativity through a mode or *vehicle of expression.*

Complementary Exchange

For some participants (3/13) in order for their creativity to become expressed in a final tangible form, they required crucial components brought to the process by others. Geoffrey explains, "Like, I can't write a whole song on my own, I find. Like I find I really need, like, the rest of the band to go through it with me." In this case others are needed, and only after connecting with essential components added by others does their interaction result in the

successful completion of a creative enterprise. Harvey elaborates "I write the lyrics and essentially, there's a core part and person x will write the music and I'll write the lyrics."

Creativity Requires a vehicle

Recall how sports acted as a vehicle for the expression of creativity for some participants. As well, two participants also insightfully suggest that creativity must be coupled with a vehicle for its expression, where at least some measure of talent or proficiency exists, if a creative product is to result. Ani explains the most important "thing" to her creativity,

> ... maybe talent, because if I wasn't, like if I couldn't draw what I saw, then I think I'd probably get frustrated and just not draw, you know what I mean? Like, I mean, to a certain extent, like I don't think I'd be as creative if I couldn't express my ideas visually... from my head to the paper.

Borts elaborates,

> Yea, yea. Well often, my thoughts, they don't necessarily have words. Like, they'll often be like pictures. Or, like a lot of times, it's emotion oriented. Like a, you know, like sometimes you can kind of have a hunch. You can kind of feel like there's something wrong. And then, eventually, I guess, like, one side of the brain will connect to the other side and you'll be able to see it more clearly. And then, finally, after that, you'll might be actually able to express it.... But like, you could express in that sort of way. And like, I find that, like, I don't know, when I actually put into words, it loses something. You're losing part of the thought. And then, not only that, but then it gets translated back into someone else's. So, it will lose it's own clarity there...

These illuminating quotations put into words a common thread that ran through each of the participants' creative activities. For some it was art, sculpting, music, or mathematics and physics, for others it was drama, sports, poetry. It would, perhaps obviously, appear that creative, novel ideas and emotions must be channelled through a medium of expression that communicates them to others; and perhaps less obvious, that one's ability in a given domain facilitates the transformation and expression of creative thought into a more tangible creative product.

Summary of Results

Presented at the beginning of this chapter were the thirteen participant profiles as well as a brief introduction to the three pronged identification technique as a useful tool for identifying creative young adults within a high school setting. Additionally, many factors perceived by creative young adults as influencing creativity and the creative process were highlighted and examined. These various factors, as delineated by their respective categories and sub-categories, were loosely organized under the four broad headings, person, process, environment and product.

Specifically, under the person heading, participants' personality traits and cognitive styles were examine. Participants perceived their active, open mind and willingness to risk as important characteristics contributing to their creativity. How and why one approaches creative endeavours were examined under the process heading. Participants perceived the creative process as being largely intrinsically motivated. As well, other's ideas were also seen as a catalyst to their own creative thoughts. Additionally, family and peer influences were explored under the environment heading. Last, under the product heading, participants' perceptions of creativity as a process that requires both complementary exchanges and a vehicle for its

expression were explored.

In the next chapter, these emergent themes will be further investigated, not in contrived separation, which was done to mirror traditional literature divisions, but as they operate naturally in conjunction with one another. By employing the interactionist framework, and looking through a processual lens, as grounded theories require, the basic social process of "cultivating" creativity will be presented and discussed with reference to the extant literature.

CHAPTER V: DISCUSSION

As previously mentioned in the Methodology section, central to grounded theory studies is the theoretical construct "basic social process" (BSP) (Bigus, 1974; Glaser, 1978, 1998).

> Basic social processes are patterns basic to the organization of social behaviour as it occurs over time. Important properties of basic social processes are that they account for change over time, they may occur under differing specific conditions in regards to time, context, and substantive area, and they account for the most variation in regards to the specific sociological problem at hand. (Bigus, 1974, p. 2)

Thus the unit or focus of the following, analysis and discussion, is a process, in this case the "cultivating" process. In order to accomplish this, previously discussed and developed categories are woven together into a processual analysis rather than treated separately as single topics. The central core category, in this case "cultivating" is discovered/formulated for its ability to provide scope, movement and depth to my perceptions and analysis of the data (Glaser, 1978). Glaser explains:

> A process is something which occurs over time and involves change over time. These changes over time ordinarily have breaking point-- discernable to the extent that stages can be perceived, so they may be treated as theoretical units in themselves, with conditions, consequences (which may be another stage), other properties.... BSP's are theoretical reflections and summarizations of the patterned, systematic uniformity flows of social life which people go through, and which can be conceptually "captured" and further understood through the

> construction of BSP theories.... [sociologists] apply theoretical codes which best illuminate variations in what is going on. Not all persons go through a process in the same manner-- that is to say there is much variation.... BSP's are not only durable and stable but they can account for *change over time* with considerable meaning, fit and workability. (p. 97-101)

Therefore, through the process of theoretical sampling, which includes the extant literature, the theory is refined and elaborated, leading to greater and greater conceptual density. The discussion that follows is a knitting of both the present findings, organized in terms of the BSP "cultivating", and the extant creativity literature.

In order to capture and to discuss the present findings in a comprehensive manner that reflects the richness of the data, Chapter V is organized into three main sections. In section I the basic social process and model for "cultivating" creativity is proposed and discussed. In section II, the three pronged identification technique as well as practical implications for the school system are examined. Finally, in section III, limitations as well as a summary of the findings and suggested future directions for research are presented.

Section I: "Cultivating" Creativity

The basic social process of "cultivating" creativity contains at least four phases: *being eased in*, *discovering creativity*, *acknowledging creativity*, and *purposive honing*. It is important to keep in mind that categories may flow from one phase to the next.

Being eased in (Antecedent Conditions)

Using the analogy of a tree, Csikszentmihalyi's quotation at the very beginning of this thesis highlights an important point that in order to more fully understand creativity, one must consider the "sun" and "soil" that support its life. Beginning early in one's life, a parent's role in

developing creativity is of great significance. As this study has demonstrated, there are many factors which contribute to a family climate that encourages and supports creativity. As previously outlined in the *Family Influence* category, the stimulating home environment created by the parents of participants involved in this study is a "key" first step for the development of creativity. For example, parents involved in this study were perceived by the participants as having played a crucial role in developing their creativity by providing learning and enrichment opportunities, actively engaging in creative endeavours and acting as role-models. This is quite consistent with the existing literature, for instance, Dacey's (1989a) examination of the discriminating characteristics of families of highly creative adolescents. Dacey's study (1989a) found that parents reinforced their children's creativity from an early age by "... provid[ing] a wide range of opportunities (lessons, equipment, contacts, situations) that cultivated [creative] traits ... and their children usually said that they felt strong encouragement from them" (p. 269).

Furthermore, studies have found that creative role-models and mentors provide, support and influence, and play an important role in the development and emulation of creativity (Prentky, 1989; Simonton, 1978, 1984; Torrance, 1983). Simonton (1988) states, "in broad terms, adulthood achievement is dependent on the availability of role-models during the early, formative years of a person's life" (p. 412). If one considers the present study where many of the participants' parents were involved in the artistic community as artists, musicians, writers and art teachers, the importance of role-models is further illuminated.

The parents in this study largely employed what can be characterised as an authoritative discipline style. Participants remembered being permitted to question rules and voice disagreements; rules were open for discussion with explanations for their existence given. In the event rules were not followed the fact that parents were disappointed was sufficient for the

participants to modify their behaviour. In support of the present findings, the parents of highly creative adolescents in Dacey's (1989a) study also shared strikingly similar parental styles that evoked equally similar reactions from their children. For instance, they did not prescribe rules, per se, to govern their children's behaviour. Instead, they exercised control by modelling and engaging in family discussions regarding behaviour. They also rarely punished their children for actions for which they disapproved. The fact that parents were disappointed was enough to motivate the teenagers to modify their behaviour.

Moreover, the parents in the present study have also been influential by encouraging their children to explore their surroundings and learn from their own trial and error, notwithstanding threat of physical harm. This is congruent with the extant literature which demonstrates an environment that is free from external pressure or control, and one that is warm, risk-free and supportive, is required or at the very least quite helpful in fostering creativity (Goree, 1996; Macleod, 1987; Martindale, 1989; Rogers, 1976; Torrance & Myers, 1970). As well, Harrington, Block, and Block (1987) have demonstrated that child-rearing practices congruent with establishing psychological safety and psychological freedom were antecedents of adolescent creative potential. They state:

> creativity is most apt to occur when three internal psychological conditions are present: openness to experience, an internal locus of evaluation, and the ability to toy with elements and concepts. According to Rogers, these three internal conditions are fostered by the establishment of two external conditions: psychological safety and psychological freedom. (p. 851).

Additionally, the present findings suggest that older and younger siblings appear to play an important role in the development of creativity. On the one hand, younger siblings were seen

as providing safe companions for their older brothers or sisters of the same gender to explore ideas with. They also provided opportunities to regress, by fostering active childlike imagination through role-playing games which allowed older siblings to engage in this type of play much later in one's development than would normally be customary.

On the other hand, the presence of older siblings of the same gender was seen by the participants as detrimental to one's creativity by curtailing one's freedom, at least for the duration they are both present within the family household. Rather than viewing the sibling dynamic strictly in terms of the static birth-order variable, which has proven to be inconclusive, for instance, Runco and Bahleda (1986) report no differences between first-born, second-born and third-born groups on divergent thinking tests. Equally puzzling, Hetherington and Parke (1979) concluded that first and only borns manifested many traits which were not considered conducive to creative acts (e.g., anxious, conforming, and worried about failure), whereas, Simonton (1988) found that firstborns tended toward greater independence and achievement. Perhaps examining "special family position" as Albert (1980) suggests should be expanded to include a closer examination of the sibling dynamic while also considering gender, and the interaction that ensues over time.

As one examines the experiences reported by the participants of this study, the process of "being eased in" begins to emerge. Participants recalled early home environments that were, and continue to be, supportive of creative growth. Their parents have acted as role-models, in addition to having provided encouragement and opportunities for creative expression. As well, they employed a similar parenting style that permits the questioning of parental rules and decisions, as well as other forms of exploration. Additionally, for some participants having younger siblings also contributed to their creative development. It would appear, young minds

born into "free" and "stimulating" family environments, such as those reported by the participants of this study, are more apt to explore, toy, and be presented with creative ideas and avenues.

Discovering creativity (Person):

As conditions are optimized for creativity to surface, one begins to explore and discover this mysterious new gift. Creative self-discovery begins on two fronts, from within and from without.

From within. The findings of the present research suggest certain tendencies begin to tentatively form in response to familial conditions. For example, an imagination and curiosity, having an *Active Mind,* begins to surface and grow in an environment that permits exploration and the questioning of parental decisions. The emergence of these traits is consistent with previous studies. Authoritative parenting styles have been shown to correspond to the development of behavioural patterns in children, such as, curiosity and the ability to cope well with stress (Shaffer, 1989).

It would appear, other characteristics also begin to emerge under these familial conditions, for example, an open-mindedness, a willingness to try new things, as well as being unafraid to question authority. Recall, from chapter IV, organized under the categories, *Esprit-Ouvert* and *Unrestricted*, that participants expressed having many of these qualities. They perceived their open-mindedness, willingness to try new things, willingness to risk and their propensity for challenging the status quo as important characteristics that contributed to their creativity.

That the participants displayed many of these characteristics is not surprising if one considers the literature. For example, Tardif and Sternberg (1988) report many creative

individuals display a "proclivity to curiosity and inquisitiveness ... " (p. 435). As well, Csikszentmihalyi (1999) states, "perhaps the most salient characteristic of creative individuals is a constant curiosity, an ever renewed interest in whatever happens around them" (p. 330). Still, other research describes a "good" imagination as a cognitive characteristic of creative persons (e.g., Barron, 1988; Tardiff & Sternberg, 1988; Torrance, 1988). Tardiff and Sternberg (1998) also characterize the creative person as one who is "open to new experiences and growth ... ", as well as possessing, " ... a certain freedom of spirit that rejects limits imposed by others ..." (p. 435). The qualities of the creative participants that emerged as a result of this study and discussed under the categories *Esprit-Ouvert, Unrestricted,* and *Active Mind* are also congruent with a list of personality characteristics of creativeness compiled by Davis (1992) (see Appendix A).

Moreover, research by Amabile (1983), Hennessey and Amabile (1988), and Collins and Amabile (1999) has overwhelmingly demonstrated that an environment of constraint undermines one's intrinsic motivation and is detrimental to creativity. However, the findings of the present study suggest that as one is raised within a milieu that both encourages exploration and is also warm, supportive and risk-free, one's intrinsic motivation and fascination with creative endeavours is permitted to blossom. Also participants in this study overwhelmingly reported being curious and motivated, to the point of persistence, by their creative endeavours. Recall, under the category *Creativity's "Pull"*, how many participants reported the creative process as an urge, or need to find out more. Some described creativity as a feeling that comes over them almost forcing them to engage in creative endeavours. Interestingly, recent research suggests creativity may not only require motivation, but may also produce it (Sternberg & Lubart, 1999).

Furthermore, findings of this study suggest that as individuals continue to explore within

the world of creativity they are more apt to discover its rewards, joys and therapeutic qualities. Recall how participants reported getting much enjoyment and happiness from the creative process. Others perceived engaging in creative acts as an effective coping mechanism. This suggests that discovering one's creativity may be made as a result, in part, of the fertile home environment or as a result, in part, of a coping necessity. As research by Runco and Shaw (1994) suggests creativity may at once lead to anxiety as well as help resolve it. This may help explain why for some participants' creativity finds its impetus in a warm supportive environment whereas for others it seems to come about as a result of a negative mood or out of spite.

From without. The present research has demonstrated that individuals require a vehicle of expression to convey their creative offerings. By attempting creative expression via a variety of avenues, for example the multiple intelligences (Gardner, 1993; Lazear, 1991) an individual typically discovers a proficiency in one or several modes. This proficiency may lead individuals to tend to prefer some modes of expression over others. As well, as this experimenting continues, parents are more likely to recognize and reinforce perceived originality and talent in certain specific areas. As their children excel in some areas, for example, dance, music or art, parents encourage them by providing more supplies as well as spending more time engaging in these activities with them, further developing their emerging skills in certain areas. In the present study for instance, participants recalled engaging in creative activities, such as painting and writing, with their parents. They also remembered their parents providing special enrichment opportunities for them by permitting and paying for them to take classes or lessons of their choosing. Additionally, they purchased chemistry sets, musical instruments, painting supplies as well as other equipment needed for learning and completing creative projects. This scenario is similar to the findings of Davis (1992), who states, "it is hardly surprising that, beginning in

childhood, most creative people [demonstrate] involvement in music, dance, or theatre ... or other activities that grow from energetic originality." (p. 83). Research by Dacey (1989a) also demonstrates that parents of creative adolescents have provided many opportunities and equipment for their children's creative growth.

However, with one's entry into school for the first time, new atmospheres and rules are encountered. The advent of school socialization and formalized school instruction typically holds both positive and negative effects for one's creativity. As the creative individual interacts with the school system, namely teachers and peers, one may begin to gain further insight into one's creativity. Students may be introduced to new areas of expression. As well, one's talents may be further developed by learning, additional or new, techniques, styles, and genres. The present study, for instance, found that the favourite teachers of creative students suggest additional readings, teach new techniques and styles with regards to their respective subject areas, and encourage the learning of many and different tools to assist with one's creative production.

Yet one may also discover environments that are not receptive to one's budding characteristics, for instance, one's propensity to question all things, including authority, or one's penchant for challenging the status-quo, are not always viewed by teachers in a positive light. Participants in the present study described classroom situations in which teachers appeared rigid, defensive when questioned about lessons, concepts or models, and generally none receptive to their divergent ways of understanding. Although these characteristics may be conducive to creativity, they may not be conducive to acceptance by teachers or the school system (Isaksen, 1987; Passow, 1977; Sternberg & Lubert, 1995; Torrance, 1977). Bybee states,

> they [teachers] will see the children as being creative. Others may consider the

> children neglectful, inattentive, troublesome, even disobedient.... Children's creative behaviour is not always well-defined when considered in the context of the teacher's perceptions, the classroom, the curriculum, and the administration. (p. 7).

As this example demonstrates, when discussing traits one must also consider the environment where they are being evidenced. Traits should not be viewed as residing solely in the individual, but rather, in the interaction between the actor and the perceiver of such actions. Thus, traits should be viewed as a general propensity towards behaviours which are then perceived, and meanings attached as they are mediated by circumstance.

As one begins to explore his/her creativity within new environments, one no doubt encounters unreceptive environments, similar to those described above, as well as others that are encouraging, which recognize one's special talents. For example, Goree (1996) states, " ... many teachers recognize that to empower students to think creatively results in a more productive learning environment for both them and their students." (p. 37). Participants in this study also recalled teachers who fostered their creativity by being open-minded, and encouraging of exploration. As this process continues, creative individuals begin to acknowledge and accept their own creativity and discover the micro-ecologies which support its growth. Harrington (1990) describes this process:

> ... it may be useful to think of creative processes as placing *psychosocial* demands on creatively active individuals and their ecosystems-- demands that must be met if the creative processes are to flourish. Almost all forms of social creativity place demands on creative agents and ecosystems by requiring certain levels of knowledge, imagination, skills, physical resources, time, work space,

> communication channels, and access to appropriate audiences. If those psychosocial demands cannot be met, the process is apt to be stunted. By meeting those demands, on the other hand, conditions for creativity are established. (p. 154)

In this phase, participants discussed gaining insight regarding their creativity on two fronts, from within and from without. From within they had begun to experience the rewards, joys and therapeutic effects of engaging in creative activities. Also reviewed in this phase were the processes by which young minds express their creative inclinations through a variety of modes of expression and interact with their environment. Parents, peers and teachers helped participants become more insightful about their creativity and the environments that support its growth. As participants demonstrate interest or early proficiency in certain modes of creative expression they subsequently receive reinforcement or resistance. Parents were found to reinforce there children's creative offerings by engaging in activities with them and/or providing supplies and equipment. On the other hand, teachers and peers were perceived as being both helpful and detrimental to their creativity.

Acknowledging one's creativity (Situation/Behaviour)

As one's creativity and talent in a mode of expression develop, one becomes increasingly aware of one's own creativity. Recall how participants reported self-identifying themselves as creative. This is congruent with Davis (1992) who states creative people, "tend to be aware of their own creativeness ... " (p. 69). Also, as research by Kovac (1996) as well as the present study have demonstrated, creative modes of expression need not be restricted to the traditional fine arts paradigm, but may also include sports as well as one or several other forms of expression.

Additionally, as others begin to acknowledge one's creativity, support and encouragement are gained, although, one also encounters the increasing effects of peer pressure. Participants in this study found that peers both promote creative expression as well as hinder it. At times peers were perceived as providing an open-minded sounding board for creative ideas, other times they were seen as imposing labels on non-conformists and intimidating askers of questions in the classroom. As evidenced by this study, confidence and a willingness to risk as well as the magnitude of the risk, and perhaps most importantly, motivation begin to grow as creative endeavours are successfully attempted. Or perhaps as research by Rimm (1988) suggests, self confidence must be earned, "you will not earn confidence by doing easy things.... It is only when you take the risk of doing the difficult that you find you can accomplish what you formerly believed you couldn't" (p. 43).

Recent research by Collins and Amabile (1999) has found that "... evaluation or feedback that is informative or constructive or that recognizes creative accomplishments can also be conducive to creativity" (p. 304). They also report, "... extrinsic motivators which support one's sense of competence ... may act in concert with high levels of intrinsic motivation to increase creativity" (p. 305).

As one's talent is increasingly acknowledged by oneself and others, endeavours become more specialized within certain domains. Participants discussed, under the *peers* category, how others helped to legitimize their own creativity by seeking their input on creative matters. In addition to becoming increasingly concentrated in certain specific domains, participants also discovered other related environments. Participants began seeking opportunities for creative expression as well as environments to enhance it. These included areas within the regular school experience, such as, classes of interest, extra-curricular activities and other discovered locations,

such as nature, or "special" teachers or occasions which permit alone time.

Therefore, as creative young adults become exposed to various creative domains and techniques their proficiency in certain areas becomes more defined. As they begin to acknowledge their creative identity others also help legitimize it. Over time as creative talent in specific areas develop, one increasingly seeks out opportunities to cultivate one's chosen creative area.

Purposive honing: proactive-harvesting (Situation/Behaviour)

Recall how the creative participants in this study sought out environments in which to share and hone their skills with like-minded mentors and others. Similarly, Harrington (1990) states that the "... accounts of the lives of creatively successful people abound in reports of environmental modifications and migrations apparently designed to facilitate subsequent creative activity ..." (p. 161). As the findings of the present study suggest, creative individuals actively seek environments in order to expand both their creativity as well as their talent in a particular expressive area; often simultaneously. For example, an overwhelming proportion of participants sought out professional training in such fields as acting, art, music, and pottery, etc. This appears to be a typical process on one's quest to ever increasing creative accomplishment. Feldman (1999) lists education and preparation, both formal and informal, as a crucial dimension of creativity. He suggests approximately a decade must be spent mastering a domain before creativity of any great consequence can be produced. This is also congruent with research by Csikszentmihalyi (1990) and Feldman, Csikszentmihalyi and Gardner (1994) which suggests that before one may make creative contributions of any significance, substantial learning within the specific domain must have occurred.

Also figuring prominently in the interviews with these creative young adults was the

tension between the time required by the activities of purposive honing, a process often undertaken in addition to school requirements, and the time needed to complete one's school work. Additional tensions surrounding time involved the need for social interaction in order to hone and share one's creative enterprises and the need for alone time in order to develop, extend and complete these endeavours.

Moreover, Gruber and Davis (1988) suggest that as one's knowledge, purpose, and affect grow over time, deviations encountered are amplified, which leads to an individual's production of creative products. This view is quite consistent with the findings of the present study which witnessed participant clustering around community enrichment opportunities. Within these safe environments creative interests are intensified and inspired. As one encounters new ideas they act as a springboard further catapulting one's own creative offerings. As this process gradually becomes more and more a part of one's self, as it has begun for the participants of this study, one can only predict that it leads into the realm of creative self-actualization. Illuminating this process, Rogers (1954/1976) describes people's tendency to actualize themselves, to become their potentialities:

> the mainspring of creativity appears to be the same tendency which we discover so deeply as the curative force in psychotherapy ... the urge to expand, extend, develop, [and] mature-- the tendency to express and activate all the capacities of the organism ... (p. 298)

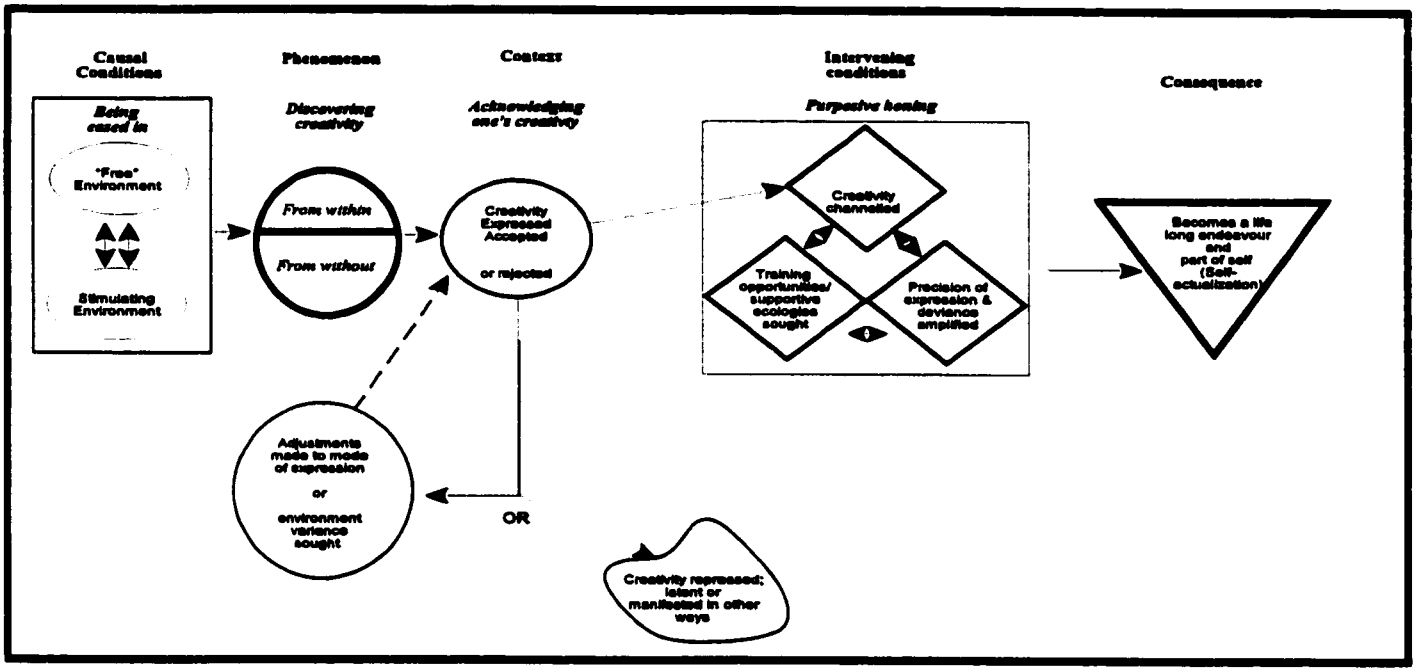
As the process of purposive honing and self-actualization evolves, creative individuals present their creative offerings to the field which ultimately judges whether they are "deviant" or creative and added or not, as a welcome innovation (Csikszentmihalyi, 1990). Recall how the creative offerings of some participants were not seen by the school system as creative at all, but

were rather seen as punishable, "deviant" behaviour.

The four phases or demarcation points to the process of "cultivating" creativity that have been described here can be depicted graphically. As highlighted in Figure 2, p. 100, this is a complex and interactive process. For instance, encountering a free and stimulating environment appears to lead to the facilitation of active creative thoughts as well as the discovery of one's creative self (*being eased in*). This discovery may take place from both within and without (*discovering creativity*). From within, the joys and benefits of creative expression may be discovered. As well, from without, the external rewards may also be discovered. As one acknowledges and expresses his or her creativity via one or a variety of modes of expression, his or her creativity can either be accepted or rejected (*acknowledging one's creativity*). If one's creativity is rejected by the surrounding ecology several situations may occur. One may either make adjustments to one's mode of creative expression or one may seek an alternative environment. Or creativity may be repressed or manifested in other ways. If, however, one's creative offerings are accepted, then one may begin to actively, purposively hone his or her creative talents (*purposive honing*). As one seeks greater training opportunities and more supportive ecologies one's precision of expression and deviance are amplified. Last, the consequences phase leading to self-actualization is speculative since it remains to seen if these participants will persist and succeed in continuing to be actively creative.

These phases were discovered, constructed, as a result of constant comparison of patterns and themes which "emerged" within the transcripts generated through the course of interviewing thirteen creative young adults enrolled in OAC courses in a local area high school. Since this study dealt solely with creative young adults, there are in all likelihood additional phases to this continuing "cultivating" process. Further research would provide greater theoretical sampling

Figure 2. "Cultivating" creativity: An environmental process model.



BEING EASED IN:

Stimulating Environment
- creative role models
- hands-on toys (i.e., Lego)
- sibling effect
- enrichment opportunities
- special equipment (i.e., musical instruments, art supplies, etc.,)

Free environment
- authoritative parental discipline style
- encouraged to explore

DISCOVERING CREATIVITY:

From Within
- imagination
- curiosity
- open-mindedness
- coping mechanism
- enjoyment

From Without
- creativity must be expressed via one or a variety of avenues (i.e., multiple intelligences)
- knowledge of one's needs for creative expression (i.e., other people, alone time, etc.)
- school

ACKNOWLEDGING ONE'S CREATIVITY:

- awareness of one's creativity
- vehicle of expression
- confidence
- intrinsic motivation
- just have to start/persistence

PURPOSIVE HONING:

- initiate opportunities for specialized training
- exposure to like-minded individuals
- other's ideas: a springboard

opportunities in order to more fully saturate existing categories as well as develop new ones perhaps leading to a more refined theory for "cultivating" creativity.

Section II: The three pronged identification technique

As previously presented in Chapter IV, the three pronged technique for identifying creative young adults within a high school proved highly useful. Employing a combination of methods for identifying creative individuals, for instance, both peer and teacher nominations as well as the ratings from the Creative Behaviour Inventory (Hocevar, 1979) as this study did, may prove to become a valuable tool for the identification of creative young adults in future research enterprises.

To this end, two modifications to the CBI are recommended. First, the findings that creativity may be expressed through sport as this study suggests, are consistent with research by Kovac (1996) which demonstrates that creativity is a distinct feature of soccer talent. Additionally, creative performance in sport has been used as a creativity indicator on alternative inventories of activities, for example the Tel-Aviv Inventory of Activities, (Milgram, 1990). Thus, it is advanced that item 17 and 18 of the CBI (see Appendix I) be collapsed into one question dealing with modern, ballet or popular dance, and adding a question regarding creativity in sport. For instance, "Received recognition from coaches or peers for innovative manoeuvres in regards to sportive play." By collapsing into one, the questions 17 and 18 that both deal with dance, the inventory would still be tapping into the world of dance as a form of creative expression, and moreover would now acknowledge that bodily/kinesthetic creativity may also be expressed through other sporting avenues such as, soccer or hockey.

In light of the present findings which suggest that creative products may not necessarily result in a tangible product, but may also be expressed by perceiving connections or complexities

and engaging in problem-solving exchanges with other individuals, another modification to the CBI is suggested. It is advanced that item 31 and 32 (see Appendix I) be collapsed into simply "Made a leather or ceramic craft.", and adding a question inquiring about whether the respondent had engaged in process-related creative enterprises, for instance, "I often discuss ideas for new designs for improving existing products." This is congruent with more process oriented definitions of creative products put forth by Koestler (1964) and Voss & Means (1989). Such definitions, rather than requiring a tangible product, instead require the perception of an important relation where one had not been known and/or connecting seemingly contradictory elements.

Section III: Limitations

The present study has several limitations. First, conducting and presenting qualitative research and more specifically, a grounded theory study, within the guidelines originally designed for positivistic inquiries is problematic. For instance, by requiring the researcher to generate a literature review before entering the field is a procedure in direct contrast to the inductive nature of the grounded theory method as put forth and practiced by the originators as well as the newer gatekeepers of the method (e.g., Glaser and Strauss (1967); Glaser (1978, 1992, 1998); Strauss (1987); Strauss and Corbin (1990, 1998); and Charmaz (1983, 1990, 1995). This practice forces upon the inquirer, a priori, biases in addition to conscious and unconscious assumptions already held, making the "discovery" of emergent themes more difficult.

Second, the present study only gained the informative input of students still within the educational system. Through the course of the present project, it has come to the attention of the researcher that many other creative students have decided to leave high school in pursuit of other avenues and outlets for creative expression. Their input and suggestions would have no doubt

contributed to informing educational practices and creativity research in general. Their voice would have been a welcome and valuable addition.

Third, an on-going problem plaguing creativity research is the lack of discriminant validity, both in terms of how creativity differs from other constructs and how the dimensions of creativity differ from each other (Hocevar & Bachelor, 1989). As well, the various ways of measuring creativity, for example, tests of divergent thinking; attitude and interest inventories; personality inventories; biographical inventories; ratings by teachers, peers, and supervisors; judgments of products; eminence; and self-reports of creative activities and accomplishments, often do not correlate with one another (Hocevar & Bachelor, 1989). However, because this study combines both peer and teacher nominations, as well as a creative activities and accomplishments inventory, it may overcome some of these complications by requiring interjudge as well as intertest reliability.

Last, due to the nature and scope of the present research, theoretical sampling was not possible. Future attempts to expand this research must include many other participants if categories are to be adequately saturated.

Practical implications

What are concrete avenues of action for our school system?

The participants of the present study were keen on suggesting many ways in which the school system could facilitate their creative growth. First, schools should allow for a certain number of credits to be obtained outside of the regular school experience. Students should be permitted to receive course credit for outside endeavours in a fashion resembling the popular co-op work experience programs currently in place. This is congruent with creativity research by Renzulli (1992) which suggests students should be given realistic practical experiences with

professionals in the field in order to more fully hone their creative skills.

Other suggestions volunteered by participants included having the school display much more of the products resulting from their various creative endeavours. These creative projects should be displayed throughout the school sending a clear message that creativity is an overt goal to strive for, as well as a source of pride to both the creative individuals and school officials. Moreover, as this study has demonstrated, these various creative undertakings will also play a vital role in the development of creativity by acting as idea "springboards" helping to generate and spark creative processes in others.

As well, teachers and schools should encourage or permit exploration, hands-on discovery, student control of their own acceleration, in addition to providing a general framework with clear criteria of basic expectations. Teachers, rather than feeling threatened by supplementary questions, should take the opportunity to suggest additional resources on topics of interest and convey a true passion for their respective subjects as well as for their students' interests and well-being. These findings are consistent with research by Renzulli (1992). He states:

> teachers who foster creativity tended to allow students greater choice in the selection of topics, welcomed unorthodox views, rewarded divergent thinking, expressed enthusiasm for teaching, [and] interacted with their students outside of class ... (p. 178)

Additionally, high school teachers should permit more choice in types of assignments; including as an option one that resembles the Independent Study. In recognition that students often differ in preferred modes of expression, teachers should strive to present their lessons in ways that vary the method of delivery.

Moreover, given the suggested beneficial effects of younger siblings on creativity, students may also benefit from cross-age tutoring and multi-level education. Finally, parents should be educated, made aware of the considerable impact they have on their child's creative development and growth.

Concluding Comments

In sum, the present study has identified several categories germane to creative endeavours which loosely fall under one of four strands of creative inquiry, either person, process, environment, or product. Furthermore, these categories appear to operate in conjunction with one another through a "cultivating" process. Identified phases to the "cultivating" process include, being eased in, discovering creativity, acknowledging one's creativity, and purposive honing; although future research should expand sampling in order to investigate the possibility of additional phases.

The present study has not only added the informative voice of creative young adults to creativity research, but has also proposed an environmental process model which can adjoin the double foci interactionist-ecological model, thus expanding and clarifying environmental determinants of creativity. As well, this study may contribute to creativity research by demonstrating the promise of the three pronged approach to identifying creative individuals within a high school, which has proved problematic in the past.

Perhaps most importantly, this study may help lend credence to the view that creative products arise as a result of a considerable amount of social influence. With this in mind, the relationship between a student and one's school and social community is transformed into one where considerable reciprocal responsibility emerges for the successful completion of creative endeavours. If we are to acknowledge such a responsibility, then continued efforts to include the

informative voice of creative young adults must be sustained.

Research must continue in order to inform our understanding of creative environments, as well as to inform our school systems, thus allowing them to better serve the creative and potentially creative students who operate within its halls. For ultimately, the promise of innovation and the answer to today and tomorrow's problems awaits... No longer should students enter our educational systems as questions marks only to leave as periods.

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Appendix A

Table 1. Personality Characteristics of Creativeness (Davis, 1992 p.70-72)

1. Aware of Creativeness
- -Value originality and creativity
- -Value own creativity

2. Original
- -Imaginative
- -Full of ideas
- -Flexible in ideas and thought
- -Is a 'What if?' person
- -Resourceful
- -Non-conforming
- -Unconventional in behaviour
- -Challenges assumptions
- -Enjoys pretending
- -Constructs
- -Builds and rebuilds
- -Finds ways of doing things differently
- -Radical
- -Bored by routine

3. Independent
- -Individualistic
- -Internally controlled, inner directed
- -Sets own rules
- -Self-aware
- -Self-confident
- -Self-sufficient
- -Self-accepting
- -Unconcerned with impressing others
- -Uninhibited
- -May dress differently
- -may not fit environment
- -May resist societal demands
- -Dissatisfied with the status quo
- -May experience conflict between self-confidence and self-criticism
- -May need to maintain distance from and avoid contact with peers

4. Risk Taking
- -Does not mind consequences of being different
- -Not afraid to try something new
- -Willing to cope with hostility
- -Willing to cope with failure
- -Rejects limits imposed by others
- -Optimistic
- -Courageous

5. Energetic
- -Adventurous
- -Sensation seeking
- -Seeks interesting situations
- -Enthusiastic
- -Alert
- -Spontaneous
- -Industrious
- -Persistent
- -Persevering
- -Impulsive
- -Unwilling to give up
- -Driving absorption
- -Drive for accomplishment and recognition
- -Ambitious
- -Thorough
- -Goes beyond assigned tasks
- -Strives for distant goals
- -Task-oriented
- -Excitable, enjoys telling about discoveries/inventions
- -High commitment
- -High intrinsic motivation
- -High need for competence in meeting challenges

6. Curious
- -Questioning
- -Experimenting
- -Inquisitive
- -Wide interests
- -Open to new experiences and growth

7. Humorous
- -Playful
- -Plays with ideas
- -Childlike freshness in thinking

8. Attracted to Complexity
- -Attracted to novelty
- -Attracted to the mysterious, asymmetrical
- -Is a complex person
- -Tolerant of ambiguity
- -Tolerant of disorder
- -Tolerant of incongruity
- -Tends to believe in psychical phenomena, flying saucers

9. Artistic
- -Artistic interests
- -Aesthetic interests

10. Open-minded
- -Receptive to new ideas
- -Receptive to other view points
- -Open to new experiences and growth
- -Liberal
- -Altruistic

11. Needs Alone Time
- -Reflective
- -Introspective
- -Internally preoccupied
- -Sensitive
- -Likes to work by himself or herself
- -May be withdrawn

12. Perceptive
- -Intuitive
- -Sees relationships
- -Uses all senses in observing

Appendix B

Definition of terms as found in Davis (1992, p. 89-90). Reprinted from Davis: Creativity is Forever. Copyright 1992 by Kendall/Hunt Publishing Company.

Fluency: is the ability to produce many ideas, verbal or nonverbal, for an open-ended problem or question.

Flexibility: is the ability to take different approaches to a problem, think of ideas in different categories, or view a problem from different perspectives.

Originality: Is just that- uniqueness, nonconformity in thought or action.

Elaboration: is the important ability to add details to an idea, which includes developing, embellishing, improving and implementing the idea.

Transformation: is "seeing" new meanings, implications or applications or adopting something to a new use.

Sensitivity to problems: reflects the ability to find problems, detect difficulties, detect missing information, and ask good questions.

Problem defining: includes the abilities to (1) identify the "real" problem, (2) isolate important and unimportant aspects of a problem, (3) clarify and simplify a problem, (4) identify subproblems, (5) propose alternative problem definitions, (6) define a problem more broadly.

Visualization: is the ability to fantasize, to "see" things in the "mind's eye", to mentally manipulate images and ideas. Used interchangeably with imagination.

Analogical/Metaphorical thinking: is the ability to borrow ideas from one context and use them in another, borrow a problem solution from a related problem, or otherwise "see a connection" between one situation and another.

Predicting outcomes or consequences: is the ability to foresee the results of different solution alternatives and actions.

Analysis: is the ability to separate details, break down a whole into its parts.

Synthesis: is the ability to see relationships, to combine parts into a workable, perhaps creative whole.

Appendix B (continued)

Evaluation: is the ability to separate the relevant from the irrelevant, to think critically, to evaluate the "goodness" or appropriateness of an idea, product, or solution.

Logical thinking: is the ability to make reasonable decisions and deduce reasonable conclusions.

Ability to regress: includes a facility for "thinking like a child," whose mind is less cluttered by habits, traditions, rules, conformity pressures, etc.

Intuition: is a little-understood capability to make "mental leaps" or "intuitive leaps," to see relationships based upon little, perhaps insufficient information, to "read between the lines"

Concentration: is the ability to focus one's attention.

Appendix C

Figure 3. Components of Creative Performance (Amabile, 1983)

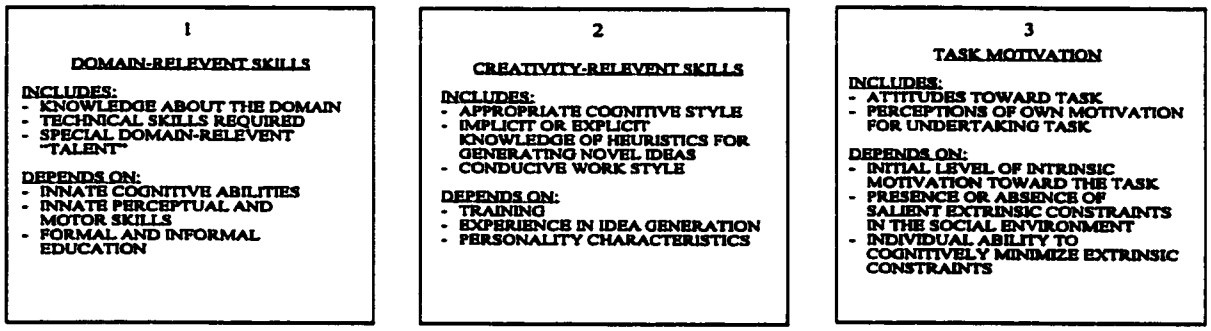
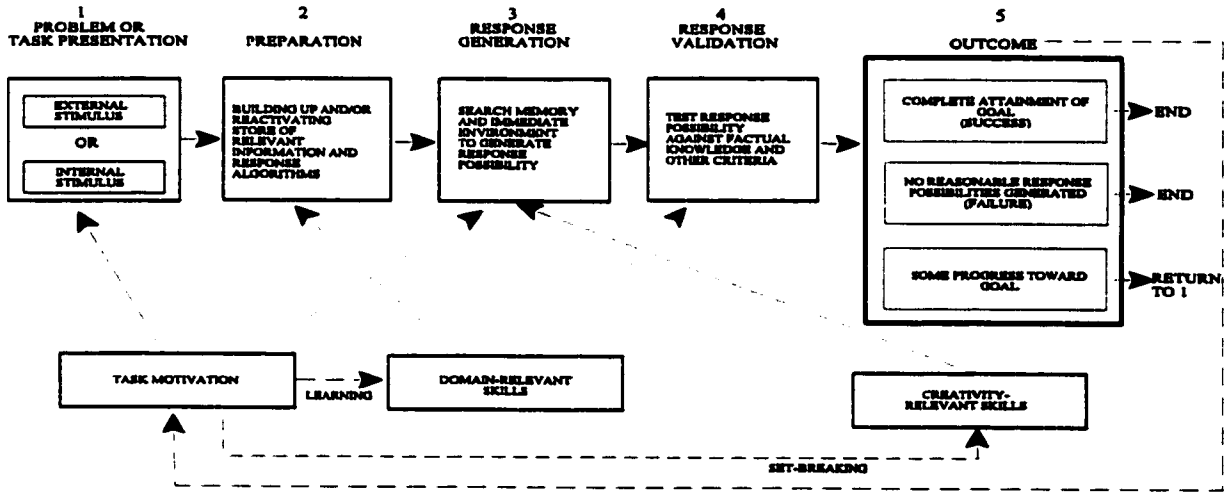


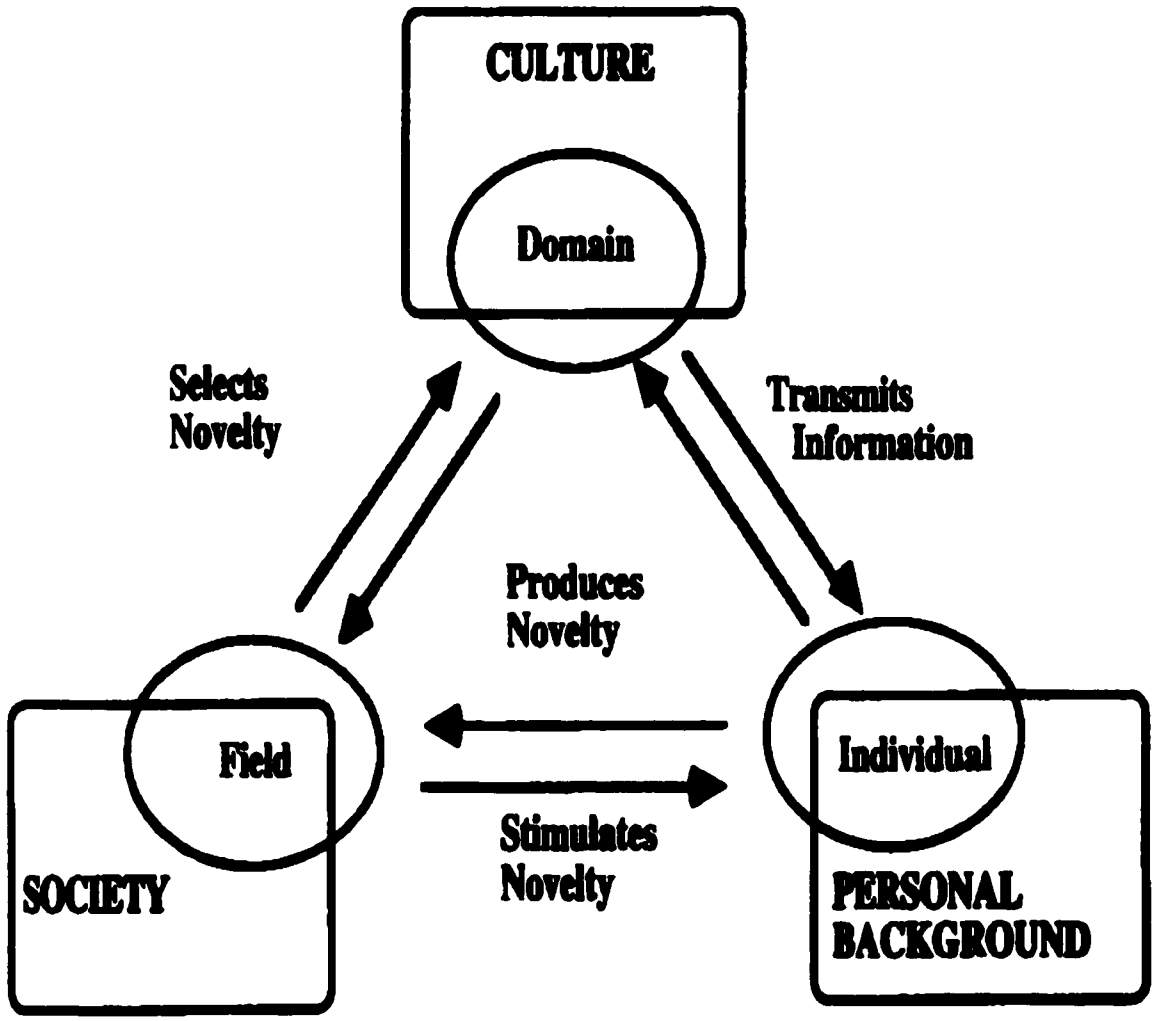
Figure 4. Componential Model of Individual Creativity (Amabile, 1983).



NOTE: Broken lines indicate the typical sequence of steps in the process. Only direct and primary influences are depicted here.

Appendix D

Figure 5. The systems view of creativity. (Csikszentmihalyi, 1999, p. 313)



The system view of creativity. For creativity to occur, a set of rules and practices must be transmitted from the domain to the individual. The individual must then produce a novel variation in the content of the domain. The variation then must be selected by the field for inclusion to the domain.

Appendix E

Short Biographical Questionnaire

Instructions: Please complete the following questionnaire. You are **NOT** required to answer any question you do not want to. All answers will be kept confidential.

1. Name:_____

2. Date of Birth (YY/MM/DD):_____

3. Please check, I am: Male ☐ Female ☐
Right-handed ☐ Left-handed ☐

4. In my home: No parent ☐ Single parent ☐
Two parents ☐

5. I am the _____ (1,2,3,4,5, etc) child and I have _____ sister/s and _____ brother/s.

6. Regardless of my actual ordinal position, I see myself as the *first*, *middle*, *youngest* or *only* child. (Please circle one of the following: *first*, *middle*, *youngest* or *only*).

7. My estimated average grade throughout high school is _____%.

8. Please define creativity in your own words (there are no right or wrong answers here!):

_____

_____

_____

_____

_____

9. Please compose a list and briefly describe approximately ten "things" that impact upon your creativity (positive or negative). Just to remind you, no one but me and my research committee will see this form.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Appendix F
Interview Question Guide

Name:_____

1. What characteristics do you see in yourself that contribute to your creativity?

2. What have you accomplished that you consider creative?

3. Do you have a process you use (go through) when you create?

4. What environments encourage your creative behaviour? How?

5. What conditions have blocked, stifled, or inhibited your creative ability?

6. Who helped (encouraged) you to pursue your creative endeavours?

7. What environments have you sought out as an outlet for your creative behaviour?

8. How would you describe your parent's discipline style? (possible probe: For example, what are some things you get in trouble for, and what typically happens after?)

9. What is the most important "thing" to your creativity?

10. How have your siblings or family position affected your creativity?

11. Is there anything else you would like to add?

Appendix G
Nomination Form (Teachers)

Hi, my name is Marc Spooner. I'm currently conducting a study on creativity for my M.A. (Education) at the University of Ottawa. The Ottawa-Carleton Research Advisory Committee as well as your principal has granted me permission to seek your knowledgeable insight; **your participation is completely voluntary**. If you are willing, I would be very grateful if you could take a few minutes to nominate students, enrolled in at least one OAC course, you feel have demonstrated creativity through their actions and products. Once completed simply return this questionnaire in the self-addressed envelope provided. **All replies will be confidential.**

Guidelines: creative qualities considered for this particular study are:

- -lots of ideas
- -many different ideas
- -unique ideas
- -curiosity
- -problem-solving ability
- -inventiveness

*** Reminder: these qualities may be expressed in wide areas, including: fine arts, crafts, literature, music, performance arts, or math-science.

The following (approx. 10) students have displayed such creativity (first name, last name):

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Appendix H
Nomination Form (Students)

Hi, my name is Marc Spooner. I'm currently conducting a study on creativity for my M.A. (Education) at the University of Ottawa. The Ottawa-Carleton Research Advisory Committee as well as your principal has granted me permission to seek your knowledgeable insight; **your participation is completely voluntary**. If you are willing, I would be very grateful if you could take a few minutes to nominate your fellow students, enrolled in at least one OAC course at this school, you feel have demonstrated creativity through their actions and products. Once completed simply place the form in the envelop provided and return this questionnaire to me or your teacher. Students receiving many nominations may be asked to complete a short checklist of creative activities and accomplishments.
All replies will be confidential.

Guidelines: creative qualities considered for this particular study are:

- -lots of ideas
- -many different ideas
- -unique ideas
- -curiosity
- -problem-solving ability
- -inventiveness

*** Reminder: these qualities may be expressed in wide areas, including: fine arts, crafts, literature, music, performance arts, or math-science.

The following (approx. 10) peers have displayed such creativity (first name, last name):

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Appendix I

Creative Behavior Inventory (CBI)

Name: _____

Phone: _____

Sex: _____ (M/F)

PLEASE RETURN TO THE OFFICE BY: Tuesday April 27, 1999

Instructions

This is an inventory not a test!

For each item please circle the letter answer that best describes the frequency of the behaviour in your adolescent and young adult life (Adapted from Hocevar, 1979). For each question simply circle, a, b, c, or d, depending on how often the question applies to you. If you are not sure, just answer with your best guess.

Please be sure to answer every question. Have Fun! ☺

Appendix I (cont)

For each item numbered from 1 to 90 below, please circle the letter answer that best describes the frequency of that behaviour in your adolescent and young adult life. *Unless otherwise stated these examples do not include school work, but do include any extra-curricular activities.

(a) never (b) once or twice (c) 3-5 times (d) more than 5 times

1. Received an award for acting	a	b	c	d
2. Worked as an editor for a school literary publication	a	b	c	d
3. Worked as an editor for a newspaper or similar organization	a	b	c	d
4. Constructed something that required scientific knowledge such as a radio, telescope, scientific apparatus, etc., *(excluding school course work)	a	b	c	d
5. Painted an original picture *(excluding school course work)	a	b	c	d
6. Entered a speech contest	a	b	c	d
7. Designed and made your own greeting card	a	b	c	d
8. Gave a recital	a	b	c	d
9. Presented an original mathematics paper to a professional or special interest group	a	b	c	d
10. Founded a literary magazine or similar publication	a	b	c	d
11. Made a craft out of metal *(excluding school course work)	a	b	c	d
12. Made candles	a	b	c	d
13. Knitted or crocheted something *(excluding school course work)	a	b	c	d
14. Put on a puppet show	a	b	c	d
15. Made your own holiday decorations	a	b	c	d
16. Built a hanging mobile *(excluding school course work)	a	b	c	d
17. Received an award for performing in modern dance or ballet	a	b	c	d
18. Received an award for performing in popular dance	a	b	c	d
19. Had a mathematics paper published	a	b	c	d
20. Made a sculpture *(excluding school course work)	a	b	c	d
21. Had original music published or publically performed	a	b	c	d

Appendix I (Cont)

Items 22-90 continued

(a) never (b) once or twice (c) 3-5 times (d) more than 5 times

22. Had a piece of literature (e.g., poem, short story, etc.) published in a school publication	a	b	c	d
23. Developed an experimental design *(excluding school course work)	a	b	c	d
24. Wrote poems *(excluding school course work)	a	b	c	d
25. Wrote a play *(excluding school course work)	a	b	c	d
26. Entered a project or paper into a science project	a	b	c	d
27. Received an award for an artistic accomplishment	a	b	c	d
28. Received an award for making a craft	a	b	c	d
29. Made a craft out of plastic, plexiglass, stained glass or a similar material *(excluding school course work)	a	b	c	d
30. Made cartoons	a	b	c	d
31. Made a leather craft *(excluding school course work)	a	b	c	d
32. Made a ceramic craft *(excluding school course work)	a	b	c	d
33. Wrote music for one instrument *(excluding school course work)	a	b	c	d
34. Wrote music for several instruments *(excluding school course work)	a	b	c	d
35. Designed and made a piece of clothing *(excluding school course work)	a	b	c	d
36. Cooked an original dish	a	b	c	d
37. Prepared an original floral arrangement	a	b	c	d
38. Applied math in an original way to solve a practical problem *(excluding school course work)	a	b	c	d
39. Wrote an original computer program *(excluding school course work)	a	b	c	d
40. Drew a picture for aesthetic reasons *(excluding school course work)	a	b	c	d
41. Wrote lyrics for a song *(excluding school course work)	a	b	c	d

Appendix I (cont)

Items 42-90 continued

(a) never (b) once or twice (c) 3-5 times (d) more than 5 times

42. Choreographed a dance *(excluding school course work)	a	b	c	d
43. Wrote a short story *(excluding school course work)	a	b	c	d
44. Wrote something humorous such as jokes, limericks, satire, etc. *(excluding school course work)	a	b	c	d
45. Planned and presented an original speech *(excluding school course work)	a	b	c	d
46. Made jewelry *(excluding school course work)	a	b	c	d
47. Cut a record	a	b	c	d
48. Put on a radio show	a	b	c	d
49. Had a piece of literature (e.g., poem, short story, etc.) published *(not in a school publication)	a	b	c	d
50. Took and developed your own photographs *(excluding school course work)	a	b	c	d
51. Performed ballet or modern dance in a show or contest	a	b	c	d
52. Had art work or craft work publically exhibited	a	b	c	d
53. Won an award for musical accomplishments	a	b	c	d
54. Wrote clever or humorous letters	a	b	c	d
55. Designed a game	a	b	c	d
56. Directed or organised a political group	a	b	c	d
57. Won an award for a scientific project or paper	a	b	c	d
58. Performed on television	a	b	c	d
59. Assisted in the design of a set for musical or dramatic production *(excluding school course work)	a	b	c	d
60. Had art work published in a school publication	a	b	c	d
61. Had a role in a dramatic production *(excluding school course work)	a	b	c	d

Appendix I (cont)

Items 62-90 continued

(a) never (b) once or twice (c) 3-5 times (d) more than 5 times

62. Had art work published not in school publication	a	b	c	d
63. Started but did not finish a novel *(excluding school course work)	a	b	c	d
64. Wrote and completed a novel *(excluding school course work)	a	b	c	d
65. Made or helped make a film or video tape *(excluding school course work)	a	b	c	d
66. Made a musical instrument	a	b	c	d
67. Helped design a float	a	b	c	d
68. Won an award for some achievement in literature	a	b	c	d
69. Entered a mathematical paper or project into a contest	a	b	c	d
70. Had a scientific paper published	a	b	c	d
71. Planned and kept a garden	a	b	c	d
72. Kept a sketch book	a	b	c	d
73. Was participating member of a symphony orchestra	a	b	c	d
74. Entered a contest as a singer	a	b	c	d
75. Entered a contest as a musician	a	b	c	d
76. Designed and constructed a craft out of wood *(excluding school course work)	a	b	c	d
77. Planned and directed a school or community event	a	b	c	d
78. Won an award for speech and debate	a	b	c	d
79. Wrote a play which was given in a public performance	a	b	c	d
80. Directed or managed a dramatic production	a	b	c	d
81. Designed and made a costume	a	b	c	d
82. Made up magic tricks	a	b	c	d

Appendix I (cont)

Items 83-90 continued

(a) never (b) one or two years (c) 3-5 years (d) over 5 years

83. Played an instrument (percussion, including piano) with a reasonable degree of proficiency	a	b	c	d
84. Played an instrument (string) with a reasonable degree of proficiency	a	b	c	d
85. Played an instrument (brass) with a reasonable degree of proficiency	a	b	c	d
86. Played an instrument (wind) with a reasonable degree of proficiency	a	b	c	d

Items 87-90 continued

(a) never (b) one or two organizations (c) 3-5 organizations (d) over 5 organizations

87. Participated in a drama workshop, club or similar organization	a	b	c	d
88. Participated in a craft workshop, club or similar organization	a	b	c	d
89. Participated in a writers' workshop, club or similar organization	a	b	c	d
90. Participated in a dance workshop, club or similar organization	a	b	c	d

THE END!!!

THANK YOU ☺

Appendix J

*** REMINDER TO ALL TEACHERS***

If you haven't filled out a creativity nomination form, I urge you to do so; your input is greatly needed... The pick-up box will be in the office until 3:30 PM, Monday, April 19.

***To the teachers who have already done so, **un gros merci!-thank you**!
Your input will contribute to a better understanding of creativity.

Thank you for your time, I realize the many pressures placed upon teachers...

Marc Spooner
Faculty of Education
University of Ottawa

Appendix K
Consent Letter

Principal Investigator: Marc Spooner Tel: (613)-230-1557

Affiliation: Faculty of Education, University of Ottawa

Whenever a research project is undertaken with human participants, written consent must be obtained. This does not imply, of course, that the project in question necessarily involves a risk. In view of the respect owed to the participants, The University of Ottawa and the research funding agencies have made this type of agreement mandatory.

This project has been approved by the Ottawa-Carleton Research Advisory Committee and by the principal of the school.

The purpose of the study is to gain insight into the environments young adults find conducive to creative endeavours.

If I agree to allow my son/daughter to participate, his/her participation will consist essentially of attending 1 individual interview and 1 focus-group session attended by four other peers; these will be audio taped for transcription purposes. Both the interview and focus-group session will last approximately 1 hour and will be scheduled within the school at a mutually convenient none disruptive time during which your son/daughter is not in class. **He/She will also be asked to** complete a short biographical questionnaire (approximate time to complete: 15 min.).

My son/daughter is free to withdraw from the project at any time, before or during an interview, refuse to participate, and refuse to answer questions **without consequence.** Only students with written permission may participate.

I have received assurance from the researchers that the information shared will remain strictly confidential. All materials gathered as a result of my son/daughter's participation will be kept under lock and key. **No other** information will be gathered from files or records nor will any information gathered as a result of this research appear in any school records.

Information collected will be used to inform the body of research dealing with creativity. My son/daughter is guaranteed anonymity. **Only pseudonyms** will be used in a manner that will in no way identify any participant.

Any information requests or complaints about the ethical conduct of the project may be addressed to the Secretariat of the Ethics Committee (562-5800, ext. 4057). **If I have any questions about the project,** I may contact Marc Spooner, Tel.: (613)-230-1557.

Appendix L

Consent Form

The information collected for this project is confidential and protected under the Municipal Freedom of Information and Protection of Privacy Act, 1989.

I have read and understood the request for my son/daughter to participate in the study Young Adults Perceptions and Interactions with Creativity Enhancing Environments. I have discussed it with my son/daughter and ...

_____ I give permission for my son/daughter to participate.

_____ I do not give permission for my son/daughter to participate.

Name of Student: *(please print)*_____ Date:_____

Name of Parent/Guardian: *(please print)*_____

Signature of Parent/Guardian:_____

or

Signature of Student (if 18 or older):_____

Appendix M

Summary of Participant Biographical Data

Name:	**Alex**
Sex:	Female
Handedness:	Right-handed
D.O.B (YY/MM/DD):	80/04/25 (19)
Parents in home:	Single: mother
Perceived family position:	Only: 2 sisters (much younger), 1 brother (much older)
Estimated average grade: (throughout high school)	78%
Main creative domain:	Painting, sculpting, sports
Name:	**Ani**
Sex:	Female
Handedness:	Left-handed
D.O.B (YY/MM/DD):	80/05/26 (18)
Parents in home:	Both
Perceived family position:	Firstborn: 2 younger brothers
Estimated average grade: (throughout high school)	88%
Main creative domain:	Painting, drawing, art design
Name:	**Axel**
Sex:	Male
Handedness:	Right-handed
D.O.B (YY/MM/DD):	80/01/09 (18)
Parents in home:	Both
Perceived family position:	Firstborn: 2 younger brothers
Estimated average grade: (throughout high school)	74%
Main creative domain:	Drama, comedy, school "ham", sports
Name:	**Borts**
Sex:	Male
Handedness:	Right-handed
D.O.B (YY/MM/DD):	80/03/20 (19)
Parents in home:	Single: alternates mom & dad
Perceived family position:	Middle: twin brother
Estimated average grade: (throughout high school)	80%
Main creative domain:	Mathematics, physics, metaphysics, problem-solving

Name:	**Dylan**
Sex:	Male
Handedness:	Right-handed
D.O.B (YY/MM/DD):	80/09/23 (18)
Parents in home:	Both
Perceived family position:	Firstborn: 2 younger brothers
Estimated average grade: (throughout high school)	80%
Main creative domain:	Physics, mathematics, metaphysics, pottery
Name:	**Geoffrey**
Sex:	Male
Handedness:	Right-handed
D.O.B (YY/MM/DD):	80/04/27 (19)
Parents in home:	Both
Perceived family position:	Youngest: 1 older sister
Estimated average grade: (throughout high school)	90%
Main creative domain:	Music, language (English class)
Name:	**Harvey**
Sex:	Male
Handedness:	Left-handed
D.O.B (YY/MM/DD):	79/09/04 (19)
Parents in home:	Single: dad
Perceived family position:	Only: 2 older brothers, 1 older sister
Estimated average grade: (throughout high school)	60%
Main creative domain:	Drama, music, language (lyrics)
Name:	**Janis**
Sex:	Female
Handedness:	Right-handed
D.O.B (YY/MM/DD):	81/07/15 (17)
Parents in home:	Two: dad & his wife
Perceived family position:	Only: no siblings
Estimated average grade: (throughout high school)	70%
Main creative domain:	Painting, sculpting, music

Name:	**Marie**
Sex:	Female
Handedness:	Right-handed
D.O.B (YY/MM/DD):	80/02/25 (19)
Parents in home:	Single: mother
Perceived family position:	Firstborn: 2 younger brothers
Estimated average grade: (throughout high school)	87%
Main creative domain:	Music, student leader, drama, art
Name:	**Patrick**
Sex:	Male
Handedness:	Right-handed
D.O.B (YY/MM/DD):	80/04/05 (19)
Parents in home:	Both
Perceived family position:	Firstborn: 1 younger sister & brother
Estimated average grade: (throughout high school)	75%
Main creative domain:	Music, drawing, language (English class)
Name:	**Shannon**
Sex:	Female
Handedness:	Right-handed
D.O.B (YY/MM/DD):	80/05/05 (19)
Parents in home:	Both
Perceived family position:	Firstborn: 1 much older sister, 2 younger sisters
Estimated average grade: (throughout high school)	92%
Main creative domain:	Language (poetry), puppet shows, role-playing
Name:	**Steve**
Sex:	Male
Handedness:	Right-handed
D.O.B (YY/MM/DD):	79/12/30 (19)
Parents in home:	Both
Perceived family position:	Firstborn: 1 older and younger sister, 2 younger brothers
Estimated average grade: (throughout high school)	85%
Main creative domain:	Computer programming, sports

Name:	**Sylvie**
Sex:	Female
Handedness:	Right-handed
D.O.B (YY/MM/DD):	81/01/18 (18)
Parents in home:	Single: mother
Perceived family position:	Firstborn: 2 much older sisters, 1 older brother, 1 younger sister
Estimated average grade: (throughout high school)	75%
Main creative domain:	Music, dancing, language (lyrics), drawing, painting