TOWARDS A MODEL OF THE DEVELOPMENT OF MUSICAL CREATIVITY:
A STUDY OF THE COMPOSITIONS OF CHILDREN AGED 3 - 11

by

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ABSTRACT

The first part is concerned with the literature. The first chapter deals with the problem of definition and is a general outline of all the issues, many of which will be discussed in more detail later. The second examines the positions taken by a wide variety of writers including psychologists, psychiatrists and artists themselves on the subject of the creative process and in particular whether it can be divided into stages. In it there is a greater concern with creativity in the arts in general. In the third the writings on the creative process are linked with those about children's creativity and in particular their musical work. The fourth chapter examines the history of the relationship between creativity and education and draws on the preceding chapters to set out some of the educational implications.

The second part turns to a survey of children's compositions and the development of an eight-stage spiral of development. This is based on the psychological concepts of mastery, imitation, imaginative play and metacognition and on an interpretation of hundreds of children's compositions. (The age range is 3 to 11). The second chapter links this spiral with the preceding chapters on creativity.

The last chapter outlines the implications for various aspects of the curriculum and possible wider implications. It also contains a wide variety of areas that future research might explore. The first appendix deals with practical suggestions for implementing the implications in the classroom. The second hints at its possible use in understanding the work of adult composers. The third appendix deals in more detail with the children's compositions and thus illuminates the progress of the development more fully.
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## CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstract</td>
<td>1</td>
</tr>
<tr>
<td>Acknowledgements</td>
<td>2</td>
</tr>
<tr>
<td><strong>PART ONE - The Literature on Creativity</strong></td>
<td></td>
</tr>
<tr>
<td>CHAPTER I Definitions of Creativity</td>
<td>5</td>
</tr>
<tr>
<td>CHAPTER II The Process of Creativity</td>
<td>81</td>
</tr>
<tr>
<td>CHAPTER III Creativity and the Development of Children</td>
<td>176</td>
</tr>
<tr>
<td>CHAPTER IV Creativity and Education</td>
<td>232</td>
</tr>
<tr>
<td><strong>PART TWO - Towards a Model of the Development of Children's Creativity in Music</strong></td>
<td></td>
</tr>
<tr>
<td>CHAPTER I The Sequence of Musical Development</td>
<td>1</td>
</tr>
<tr>
<td>CHAPTER II Creativity and the Developmental Spiral</td>
<td>2</td>
</tr>
<tr>
<td>CHAPTER III Curriculum Implications and Suggestions for Further Research</td>
<td>61</td>
</tr>
<tr>
<td>Bibliography</td>
<td>73</td>
</tr>
<tr>
<td><strong>APPENDIX ONE</strong> Classroom Texts and Teaching Strategies</td>
<td>120</td>
</tr>
<tr>
<td><strong>APPENDIX TWO</strong> A Note on the Systematic Mode</td>
<td>139</td>
</tr>
<tr>
<td><strong>APPENDIX THREE</strong> The Analysis of the Children's Compositions</td>
<td>152</td>
</tr>
<tr>
<td><strong>APPENDIX THREE</strong> The Analysis of the Children's Compositions</td>
<td>158</td>
</tr>
</tbody>
</table>
PART ONE

THE LITERATURE ON CREATIVITY
CHAPTER I

DEFINITIONS OF CREATIVITY

Introduction

Creativity and creative are much used words today. There are catalogues of 'creative percussion' and handbooks of 'creative activities'. It is a bandwagon, a rallying cry for the converted, a bastion against the upholders of traditional methods. But if we look at its meaning we find that it is as multi-faceted as a diamond and that each writer on the subject is looking at that collection of facets that happen to be facing him at the time. The first chapter will be an attempt to tease out some of the strands of meaning. Indeed the term 'creativity' did not appear in the Oxford Dictionary till the twentieth century when in 1972 'creativity' is defined as the creative power or faculty: ability to create; (1) 'creation' on the other hand was earlier defined as the action or process of creating.

Golann puts together in this quotation many of the strands that it is hoped will be unravelled later:

A striking feature of the literature on creativity is the diversity of interests, motives and approaches characteristic of many investigators. Creativity has been viewed as a normally distributed trait, an aptitude trait, an intrapsychic process, and as a style of life. It has been described as that which is seen in all children, but few adults. It has been described as that which leads to innovation in science, performance in fine arts, or new thoughts. Creativity has been described as related to, or

The Myth of Divine Creation

The notion of creation must be implicit in the term 'creativity'. Elliott outlines how the concept of creativity as traditionally applied to works of art is linked with the myth of divine creation. Creativity is bringing a new thing into being; it is part of the concept of an artist.

Either instantaneously or by process of making, God freely brought into being, ex nihilo or from some pre-existent indefinite material, a concrete, infinitely rich, perfectly ordered and beautiful world, the most wonderful of all created objects save man himself. He made it for man, not only as his environment and to sustain him, but, more importantly, for him to contemplate and wonder at a perpetual occasion for him to praise his maker. (2)

This link may be in part due to an ancient link between art and religion. Much early art was not for art's sake but for religious ends. Bell (3) and Tolstoy (4) both see a link between art and religion today. Indeed later references to the role of play in

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creativity have their roots in religion too, as in Sachs. (1) And a concept of the word "God" by Rickman (2) is used at one end of an evaluation scale as the absolute beauty at the other end of which we recognise the power of death which we say is ugly.

Perhaps the most worked out link is in Dorothy Sayers. The speech of Archangel Michael at the end of *The Zeal of Thy House* sums up her thinking (worked out in more detail in *The Mind of the Maker*). (3)

Praise Him that He hath made man in His own image, a maker and craftsman like Himself, a little mirror of His triune majesty.

For every work of creation is threefold, an earthly trinity to match the heavenly.

First: there is the Creative Idea; passionless, timeless, beholding the whole work complete at one, the end in the beginning, and this is the image of the Father.

Second: there is the Creative Energy, begotten of that Idea, working in time from the beginning to the end, with sweat and passion, being incarnate in the bonds of matter; and this is the image of the Word.

Third: there is the Creative Power, the meaning of the work and its response in the lovely soul; and this is the image of the indwelling Spirit.

And these three are one, each equally in itself the whole work, whereof none can exist without other and this is the image of the Trinity. (4)

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Elliott continues:

Our ordinary concept of creativeness is still dominated by this divine creation myth. Instances of creating are arranged in a hierarchy, from accidental production and mechanical fabrication through simple originate making (as when a schoolchild makes something of his own choice out of clay) to production which involves uniqueness or originality and is further classified as invention or artistic creation. The closer the analogy between human activity and the mythical paradigm, the more confidently we attribute creativeness to the agent. This is why the artist's claim to creativeness is unassailable. (1)

The artist is even said to create a world (e.g. Shakespeare, Dostoyevsky). The creation of the world is seen as the model of artistic creation. 'Creating a job' (out of nothing), 'creating havoc' (out of nowhere) and so on are examples of the use of the term in this sense. Very good scientists that reconstruct the world fall into this category (e.g. Newton, Einstein, Freud) but not lesser ones. All successful artists fall into it. People see artists as set apart, as having God-given qualities. The creator 'par excellence' is God and whenever we create some new thing we feel we are God-like and achieving immortality. (Lytton, 1971). (2)

Lorenz (3) coined and redefined the term 'fulguration' for creative acts. It is a term used by mediaeval mystics for God's creative acts and contains the idea that God's lightning caused new things to come into existence.


This divine aspect of creativity has fascinated man down the ages. One early explanation of the flash of inspiration that leads to the reinterpretation of human experience was that it was a divine madness, a seizure of the individual by the gods. The Greeks called it 'enthusiasmos' (from which came their word for inspiring creators, 'enthusiasts') - or God within. It is found in contemporary literature too. Kris quotes Helene Deutsch who has to use God to explain inspiration.

The stage nearest to inspiration is ecstasy:

What had been projected as a vision, God, is now in ecstasy taken back into the ego, but not as an antithesis between ego and superego, or between ego and God; ego and God are one. (1)

This view explains how some people are reluctant to inquire into the sources of creativeness; it is a feeling almost of sacrilege and a fear that such inquiry will cause the departure of God within. There is a vast literature on the subject starting with Homer and Socrates.

It is this line of thinking that leads to the position taken by some researchers into creativity that creative acts cannot and should not be analysed because doing so will destroy the very essence of the act of creation. It can be observed and appreciated but not caught. MacLeod writes:

The psychologist who insists that creativity can be studied scientifically must bear the burden of proof in the face of centuries of testimony from mystics and artists, and even from ordinary people, who claim that in at least his moments of inspiration man is not subject to the laws of nature. (2)


And after a carefully reasoned account of the creative products and creative processes Briskman concludes:

The creative artist or scientist does not simply produce a transcendent product; in a certain sense he actually transcends himself on producing something he could not have willed, which he could not know he has the ability to produce. As a bearer of a tradition he has not only gone beyond it, he has gone beyond himself, he has transcended himself. One is reminded of the beautiful story about Haydn who listening for the first time to his Creation, broke into tears and said: 'I have not written this.'(1)

It is this mystery that leads some people to be antagonistic towards research projects into creativity. Barron says that a fifth of the writers approached to take part in his survey saw it as intrinsically evil.

The objections to such research are mainly on these counts: it is an expression of the effort of organised society to encroach upon the individual and rob him of his fruits; it is presumptuous because it seeks to describe and to understand what is intrinsically a mystery. Psychological diagnosis is, moreover, a form of name calling; it is the way of having the last word; it does not respect the individual. Finally, it is the present seeking to impose itself upon the future and to perpetrate the status-quo through techniques which will identify the potentially constructive deviant and permit society to control him.(2)

He quotes Pope Paul Xllth speaking to astronautical scientists in his justification for research:

All creation has been committed and offered to the human spirit, that man may penetrate it and thus be able to understand more and more fully the infinite grandeur of his Creator.


Creativity in Humans and Animals

It is in this spirit that people claim that it is creativity that sets man apart from animals. Wehner writes:

The importance of arts education must instead be based on an ideal view of man as something more than animal - as a creature who can use his leisure in humane ways. (1)

And Duerkson writes:

The things and events we call music are human behaviours. There are no other animals that use sounds in the musical sense with the level of sophistication and variety of purpose characteristic of human musical activity. The human being never seems satisfied with his environment as he finds it. He reconstructs his surroundings so he can control them. Music is a way in which the human constructs his environment of sound, and participation in music by definition, makes a person more human than other animals. (2)

Flannery talking about the value traditionally placed on conceptual thinking attempts to redress that balance in saying:

In other words the prevailing thought about the nature of man existing over hundreds of years has cheated each of us of a special kind of consciousness that is possible to us and only to us - as homo sapiens. The ability for aesthetic consciousness sets us apart from the rest of the animal kingdom as sharply as conceptual thinking does. It is the kind of consciousness which helps us to learn why our own particular life is important enough to endure. Without this kind of consciousness one starts to think of himself as just another person - nothing special. (3)


Later she describes aesthetic consciousness in terms of imagination which usually means fantasy or 'creativity'.

It must, however, be added that other writers see it differently. Chisholm(1) makes the case for the creative element in bird, fish and insect sounds and claims that apart from social reasons such as mating, identifying a territory etc., some sounds are made 'purely for the pleasure of doing so'.

Lorenz(2) sees the link between animals and art in the area of perfecting rituals (the beautiful colours of fish and birds may have evolved in order to enhance particular ritualised movements.) This brings us back to the religious links in art mentioned earlier. He says that we cannot know whether emotions are involved in animals, but has a feeling that they may be.(3)

The Self as God and Creativity

Having outlined the divine concept of creativity Elliott(4) goes on to describe how this traditional concept has been influenced by philosophers such as Nietzsche. Although Sachs sees the modification as originating with Rousseau, when:

The emphasis was no longer on the expectation of nature's parental solitude (once thought to be the gift of the benevolent God) but, on a consistent, well-planned - in the wider sense of

the word - scientific activity. This and only this was looked for to bring about desired results. The ideal was now no longer to leave as much as possible of nature's own free will, but to compel it to deliver the goods that had been hitherto accepted as voluntary gifts. (1)

It led to the invention of machines.

Nietzsche, in Zarathustra sees the concept of God as now obsolete and calls upon man to assume the role of creator. In looking to the future for a still-to-be accomplished transformation of the moral and spiritual life-worlds, (2) he retains the idea of infinitude in creation; but man is now the creator. But the re-creation of man depends upon the recreation of the individual self. The relationship between the two concepts is clearly seen in the title of the book, Psychology as Religion: The Cult of Self-worship (3) which deals with four of the major theorists of the view - Erich Fromm, Carl Rogers, Abraham Maslow and Rollo May. Their concept of artistic creation as being somehow a process of self-realisation arises from this modification of the divine concept.

There is much written about the idea that somehow artistic creation is an exploration of one's self. At its lowest, art is seen as a form of therapy or, indeed, as a working out of our neuroses, (although such principles are not an adequate basis for the use of the techniques in the classroom.) Freud set out this view when he wrote that the artist is an incipient introvert who is not far from being neurotic.


(2) Elliott, R.K., op.cit.

He is impelled by too powerful instinctive needs. He wants to achieve honour, power, riches, fame and the love of women. But he lacks the means of achieving these satisfactorily. So, like any other unsatisfied person, he turns away from reality, and transfers all his interests, his libido too, to the elaboration of his imaginary wishes, all of which might easily point the way to neurosis .... The artist finds his way back to reality in this way .... In the first place, he understands how to elaborate his daydreams so that they lose their essentially personal element, which could repel strangers, and yield satisfaction to others as well. He also knows how to disguise them so that they do not easily disclose their origin in their despised sources. He further possess the puzzling ability of molding a specific material into a faithful image of the creature of his imagination.... If he is able to accomplish all this, he makes it possible for others, in their return, to obtain solace and consolation from their own unconscious sources of gratification which had become inaccessible. (1)

Storr(2) disputes this view that all human beings are 'neurotic' and that artists are acting as therapists by providing symbolic solutions to inner conflicts. He writes that the term 'neurotic' implies mental illness and that we know that mental illness causes a deterioration in the quality of production and often the quantity too. Painters who have been schizophrenic often show a decline in flexibility and Schumann's output lessened during his depression. Neurosis blocks creativity and it is a myth that artists are more neurotic than other types of people. Rudolf and Margaret Margot Wittkower in their book


Born under Saturn illustrate how painters have been of every conceivable personality type. We all carry with us the tensions and immaturities of childhood and there is a possibility of resolving them symbolically in artistic production but that does not mean we are neurotic. Storr sums up:

We are, therefore, creatures of conflict who seek for reconciliation of conflict and creatures who tend to become cut off from the emotional springs within us because of our capacity for abstraction. The hypothesis of science and the theorems of mathematics may move us aesthetically to some extent, since they provide some degree of order in the midst of complexity. But they do not, as does music, put us in touch with the emotional basis of our inner life.

Psychopathology and Creativity

Hilgard also claims that only some creative people are neurotic and argues that excessive neuroticism prevents creativity. He does, however, list some 'immature or child-like' qualities manifested among some creative people;

1. The dependency upon others, with refusal to accept (or carry out) the ordinary social responsibilities of adult life,
2. Defiance of authority or convention,
3. A sense of omnipotence or what Gough has called sense of destiny,

(1) Referred to in Storr, A., op.cit.
4. **Gullibility** or uncritical acceptance in some intellectual sphere, no matter how critical in others.

He cites examples of these in his experience. It is worth commenting here that in the chapter on the creative process the regression to childish processes is discussed, so perhaps it is not surprising to find these qualities in creative people. He concludes that psychotherapy might make a person more or less creative. There is no knowing. Others like Lussheimer\(^1\) claim it can only improve talents. Indeed there has been much writing about the relationship between mental abnormality and psychopathology and creativity. Some suggest that insanity or some form of mental abnormality is related to, or even identical with, the mental conditions which promote genius. Lombroso\(^2\) is the classic exponent of this view. But there is equally much literature that says that while creative individuals may be of insane temperament the insanity is a block to creativity and they operate best at their sanest, such as Jacobson\(^3\). **Genius makes for insanity but neither insanity nor the insane temperament makes for genius.** Others differentiate between normal and abnormal genius like Babcock\(^4\); nonetheless he dismisses the normal genius who achieves his status by 'industry and tact' and says his work will not be remembered but gives long lasting fame to the products of the abnormal, adding:

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(3) Jacobson, A.C., Literary Genius and Manic Depressive Insanity, Medical Record LXXXII, 1921, pp. 937 - 39.

Undoubtedly, the preponderance of great natural gifts of mind, which in themselves insure great renown, entails a corresponding deficiency in the other parts of the mental and physical economy, and though in many respects the man of genius may well be the subject of envy, he may in other regards, as consistently be the object of pity.

Others deny any association between creativity and mental abnormality on the grounds that there are creative individuals who are not abnormal, or that there is no creative personality type and that personality factors predisposing one to be creative are antithetical to pathology, a view much favoured by those like May and Fromm who view creativity as a route to psychological health. Some add that predisposition to abnormality sensitizes the genius to aspects of his environment of which others are unaware e.g. Lange-Eichbaum(1). However, although a genius shares some characteristics with the abnormal, he also possesses different characteristics - the ability to give direction to his work(2) and to be critical of it.(3)

The Psychological Roots of Creativity

Storr, summarizing the power of music to resolve conflicts, quotes from Zuckerkandl:

Words divide, tones unite. The unity of existence that the word constantly breaks up, dividing thing from thing, subject from object is constantly restored in the tone.


(2) Lombroso (1891) op.cit.

(3) Jacobson (1912) op.cit.
Storr concludes:

Music and other works of art have the capacity of reordering experience of thought in their own image, so that we may obtain from them something far more than pleasure. It is something more akin to experiencing life as a whole. In music, man does not give expression to something (his feelings, for example), nor does he build autonomous formal structures; he invents himself. In music, the law by which he knows himself to be alive is realised in pure form.

Krausz supports this view as he writes: I regard the making of art objects as part of this larger process of becoming, one that is continuous and open-ended. He quotes Dewey on the inter-penetration of self and the world of objects and events. Instead of signifying surrender to disorder, it affords our sole demonstration of a stability that is not stagnation but is developing. He also refers to Chang Chung-Yuan:

As we know Tao is the ontological experience by which subjective and objective reality are fused into one .... When the Chinese artist says that he enters the spiritual court he speaks of the ontological experience, the state of no thought. This experience leads to the underlining interfusion of subjective and objective realities. This interfusion initiates the process of creativity, which in turn establishes unit and multiplicity, the change in the ever-changing. The artist who has reached the state of oneness is supported by all the powers inherent in multiplicity and changes, and his work will be far beyond what his egoform self could accomplish.

Robert Henri (1865-1929), speaking of modern art, expresses somewhat the same idea. (The object, which is the base of every true work of art, is the attainment of a state of being, a state of high functioning.

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(1) Storr, A., op. cit.


a more than ordinary moment of existence. In such moments activity is inevitable, and whether this activity is with brush, pen, chisel or tongue, its result is but a by-product of this state, a trace, the footprint of the state. The work of art, is indeed, the bi-product of the state of high functioning. This state of spiritual exultation is fundamentally creative activity, whilst skills and measurements are secondary. It is the manifestation of the ontological experience.

Krausz(2) goes on to postulate an affinity between At-Oneness and religious experience, referring also to the works of George Santayana, John Dewey, Aldous Huxley, Anais Nin, Martin Buber and Abraham Maslow. He concludes:

> What I make conditions how I experience, and how I experience conditions what I make; my more perspicuous ways of experiencing give rise to yet more perspicuous art objects. It is by virtue of much perspicuity that I speak of self-development rather than mere change. However, my work as a painter is not merely catalytic from my self-development, because the autonomous emergent features of my painting especially when I am AT-ONE with them, populate and enlarge my inner world.

(This interaction between material and creator is explored in Chapter Two).

Witkin is in tune with this kind of thinking, when, in The Intelligence of Feeling,(3) he sees artistic creation as the solution of an inner sensate problem; and Gutman in a closely argued article sees man's creations as objectifications of his own self. He sees human creativity as the:

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highest level of manifestation of the principle of self-duplication which started its evolutionary course with the self-duplicative activity of the DNA molecule. We have pointed out that in this process of self-projection there is more involved than simple self-duplication. It is self-transformation, involving at the same time amplification. The various products of creation thus appear as externalisations of certain aspects of man's self-tools and machines of his body mechanisms, instruments of his sense organs and nervous system, art of his perceptual images, music of his emotions, language of his conceptualisation and structures of his functional organisation as a whole, physical as well as behavioural. (1)

Laub-Novak sees creation as a bringing about of internal order:

In reaction against rote discipline, some have held that 'Creativity' means complete subjectivity, whim, loss of order and discipline, and, in a word, chaos. As usual, human life is fullest when these two extremes are transcended. There is a middle way above the two extremes. Not merely a compromise, a different way altogether. It consists of finding one's own order. But recognise that order is already written in the human heart. Children love, need, and continually create order. Order is natural. It is interior. Finding the law within is not subjectivity, neither is it mere external order. (2)

Hollander elaborates the same theme:

What is man for? The answer, I believe, is search inward. Go inward. Search into yourself. This means the intellectual search, the religious search and, from this, artistic creation. (3)

The Tanglewood Declaration of 1967 from a conference of those concerned in music education put out this statement:


The arts afford a continuity with the aesthetic tradition in man's history. Music and the other fine arts, largely non-verbal in nature, reach close to the social, psychological and physiological roots of man in his search for identity and self-realisation. (1)

Dudek links this in with man's search to relate to the outer world:

The main motivation at the roots of creative exercise is man's need to relate to the world around him .... This need is apparent in the young child's interest in all the objects around him, in his ever-renewed exploration and play with them .... without the basic need to relate to the world, without openness toward the world, the experience will not enlarge, deepen and make more alive the person's relationship to the world, that is, will not be creative. (Schachtel 1959).

Creativity is man's striving for self-actualisation. According to this definition, the created product is always the person himself. The principle leads to the development of maturity and of a happy, stable, productive and constructive life. Creativity and mental health are, therefore, intimate bedmates. Fromm, however, indicates, that only if one has reached a degree of inner maturity which reduces projection and distortion to a minimum can one experience creatively. (Fromm 1959)(2).

(There will be further discussion of this point later). And Cottle makes a similar point:

Creativity involves the capacity to work simultaneously with human impulses and aspects of external reality and to apply one's imagination and impulse onto reality - through a means of expression, such as drawing .......... Creativity, of course, implies an expression of self. What we see in a child's earliest drawings is an expression delivered from the inside, from an inner darkness, which is dropped on the outside as a snowflake falling on cold ground. It arrives and, in freedom, remains there, unmodified, an entity unneeding of temporal sequence in recognisable content. Later, the same expression undergoes natural maturation, as thought processes become more complex and relations with others more sophisticated. Children's art reveals the poignant interactions between a single self, still unformed, and a social world, still uncomprehended. While the content


of children's imaginations and expressions is always changing, the desire to create and establish something that is uniquely their own remains very much alive despite our fear that it may be slipping away. (1)

Beittel, on the other hand, sees this process as distinct from creativity when he says:

If there is an end to the experiences of which we speak, it is not creativity, not education through art, but more likely the continuing symbolic construction of the self. (2)

However, Barron(3) looked at all the psycho-therapeutic literature and the creative relationship to psychological health and peace of mind and remembered Hooke's headaches, giddiness, indigestion and insomnia, Beethoven's apocalyptic rages, Swift's savage indignation, and Van Gogh's loneliness, Rimbaud's criminality, Emily Bronte's despair, Heine's physical pain and concluded that in their picture of a well-adjusted ego, there is warmth but no heat, spontaneity but no passion and no wilfulness, fierce self-assertion or hatred of established order. He links with this vision the fact that his findings show that creative individuals are more at home with complexity and apparent disorder than other people and more in touch with the unconscious.

The Philosophical Roots of Creativity

Philosophers have linked it with freedom. Briskman(4) explains

Popper's view. (1)

No scientific prediction (and hence, no scientific explanation) of the growth of science knowledge is possible, on the grounds that we cannot come to know today what we shall only come to know tomorrow. It follows that what Popper calls the world of "objective mind" (or of "theories, arguments and problems in themselves") is an essentially open world, in that it cannot contain a theory which will predict this appearance in that world of all future theories. But for Popper this world of "objective mind" (his "3rd World") interacts both with the world of mental states (his "2nd World") and with the world of physical states (his "1st World") - the latter interaction being mediated through the "2nd World". It follows that both the mental world, and more importantly, the physical world are also open; and this rules out physical determinism and, in time, kicks open the door to the possibility of human freedom. In other words, for Popper the creative potentiality of human thought, the possibility of genuinely creative, unpredictable additions to his "3rd World", opens up the door to human freedom. (2)

The existential philosophers also connected the possibility of human freedom to the possibility of human creativity - man is free precisely because he both can and must create himself, as his existence precedes his "essence". Sartre writes:

If existence really does precede essence there is no explaining things by reference to a fixed and given human nature. In other words, there is no determinism, man is free, man is freedom. (3)

These are 'heroic' views of creativity and philosophers can afford these in a way that psychologists, whose interest since the early 1950s has been deliberately pragmatic, cannot.


(2) Briskman, L., op.cit.

A further extension of this view is that these powers once attributed to a transcendent Person outside the order of nature, are now known to be immanent in nature, especially human nature, to constitute, in fact, one of the givens at the hidden, unconscious 'core' of nature; so that instead of being a rare capacity it is shown in some way and to some extent by almost everybody. Murray outlines Whitehead's position on this:

Whitehead adumbrated a theoretical system of systems in which creativity is a metaphysical ultimate. His conception is that of a procession of over-lapping and inter-dependent events, or actual concrete occasions, in space-time. Each concrete occasion is a temporally bounded crescense (organisation, composition) of prehensions (appropriating or vectorial processes), the duration of each occasion being the time required for the composition of the prehended elements into a single unit. A fine micro-analysis would yield a sequence of occasions, or actual entities, each of which - with a duration, say of a fraction of a second, would perish at the instant of its composition and then be immediately succeeded by another actual occasion. A grosser, macro-analysis would take a whole act or endeavour, as the "really real thing" (Whitehead), the direction and quality of which has imposed itself on its constituent parts.

The moving picture, here, is that of a sequence of discrete corpuscles of actuality, bound together, as it were, by a vectorial force or continuity of aim. Translated to the mind, this could be illustrated by the composition of an image which is immediately decomposed, only to be followed by the composition of another image, or with the formation of a word which dies as another word succeeds it, and so forth. Our senses being less acute that certain delicate instruments, we are scarcely aware of these individual "drops" of mental life and are more prone to choose metaphors of fluid continuity, such as the "stream" of consciousness or the "flow" of thought. One might say that a "wave theory" is closer to our immediate experience than a "corpuscular theory". The latter, however, may prove more serviceable in the end.
Now, according to Whitehead, every actual concrescence is unique in some respects, and hence, strictly speaking, a creation, since an infinitesimal variation is sufficient to justify the adjective "unique". Thus the actual world is said to have the character of a temporal passage into novelty. If we accept this, then every coherent series of actual occasions, short or long - a sentence, a paragraph, a ten minute conversation, or a ten-year correspondence between two people - is even more of a creation, since each of these is a unique and temporal integration of unique components, the creation of creations. Personally, I am content with this, but would prefer - at least for the duration of this discourse - to substitute "composition" for "creation", and reserve the latter term for valuable compositions with a high degree of novelty relative to sameness. (1)

Thus, one of the most effective geniuses of this century was committed to the notion that creativity is of the very essence of reality.

Murray then outlines his own theory of creation:

Sufficient concentration within a given region of different mobile or mobile entities with mutual affinity, entities which have never been combined. Then, as a fifth requirement, sufficient circulation of these entities, which means a sufficient source of energy. Finally, there must be the possibility of favourable conditions for combination. Granted these seven factors, the mutual attraction, approximation, and association of two or more entities, in other words, creation - is certain to occur. (2)

Thus he arrives at a definition from a philosophical stand-point that Koestler arrives at from a psychological stand-point although he applies it to the story of evolution as well as to human endeavour. This theory of creativity does to some extent tie in with the view of music being essentially a collection of joins between past and future time - a succession of ever new events.


A New Theory of Creativity

These quotations will serve to show how widespread this adaptation of the traditional view of creativity still is. Elliott\(^{(1)}\) goes on to define a new concept of creativity which came into prominence in the first two decades after World War II. Razik outlines how before that genius is where one finds it, creativity is where one finds it, and little can be done through education to affect it.\(^{(2)}\) In the 1930's in America came the Progressive Education Movement and teachers and parents observed children's natural curiosity, experimenting and exploration with such spokesmen as William James, John Dewey, William Heard Kilpatrick, Francis Parker, Boyd Bode, George Counts and others. It centred on the interests of the child, emphasized democratic ways of behaving, made group standards important and used problem-centred enquiry. Psychologists such as G. Stanley Hall\(^{(3)}\) stressed creativity placing emotions above intellect and intuition above reason. He also believed too much analysis of the process destroyed spontaneity. He believed in the potentiality of man and deplored time spent in school orderliness, standing, sitting, etc. He criticised teachers helping children over difficulties rather than spurring them to self-activity. William James also believed in potentiality and exhorted:

\(^{(1)}\) Op.cit.


\(^{(3)}\) Hall, G.S., Aspects of Childhood and Education, Boston, Ginn and Co., 1907.
Be patient, then, and sympathise with the type of mind that cuts a poor figure in examinations. It may, in the long examination which life sets us, come out in the end in better shape than the glib and ready reproducer, its passions being deeper, its purposes more worthy, its combining power less commonplace and its total mental output consequently more important. (1)

Francis Parker (2) favoured democratic education, a belief in relative, not absolute truth and saw curiosity, fantasy, imagination, intellectual courage and observation as important. The leader of the movement was William Heard Kilpatrick (3). He sought answers in the individual learner and emphasized purposeful activity, intrinsic motivation, planning, open-mindedness, honesty, group action and child-centredness. John Dewey was one of the most prolific writers and showed how scientific method can be applied to all fields of enquiry. He stressed active learning.

The word 'creative' was applied to this movement, but the connection was not made between it and men of genius. In World War II creativity was forgotten. After it, the atomic bomb demonstrated the power of science and technology and other innovations in industry and projects like Sputnik demonstrated what development was possible by having many creative people at work in a constant effort to transcend what had already been done with accomplishments still more novel and powerful. So passages like this were written by Guilford:

(1) James, W., Talks to Teachers on Psychology, New York, Holt, Rinehart and Winston, 1900.

(2) Parker, F.W., How to Teach Geography, New York, Appleton-Century, 1905 (c) 1899.

With artificial satellites and even an artificial planet circling over our heads, the day of Buck Rogers is arriving with accelerated pace. The imagination of all of us is in for considerable stretching, just to keep up with developments of this kind. It is obvious that we are in a tight race with Russia with respect to these technological advances. It is almost as obvious that we are in competition with Russia also with respect to education, and in fact, in respect to other areas of social and economic progress. In many respects our adversaries have shown more initiative and imagination than we have. It is unlikely that our potential intellectual resources are inferior to those of Russia. We may well ask ourselves, therefore, what we are doing that is wrong and how we may promote better use of the intellectual resources that we have.\(^{(1)}\)

Efforts must be made to identify creative people and cultivate them and schemes like those at Esalen Institute on the Pacific Coast and the Creative Education Foundation in New York and the Synectic Group in Massachusetts were founded, while aid was forthcoming from the Carnegie Corporation and the Richardson Foundation and the US Office of Education. Creativity could no longer be left to the chance occurrence of genius; neither could it be left to the realm of the wholly mysterious and the untouchable. Men had had to be able to do something about it; creativity had to be the property of many men; it had to be something identifiable; it had to be subject to the effects of efforts to gain more of it.

And so materials for developing creative ability were produced like 

\(\text{Can you Imagine?}^{(2)}, \text{Invitations to Thinking and Doing,}^{(3)} \) Invitations

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\(^{(3)}\) Myers, R.E. and Torrance, E.P., Invitations to Thinking and Doing, Boston, Ginn & Co., 1965.
Numerous tests of creative abilities were created, notably by Guilford and Torrance, (although it is not yet proved whether children who rated high on these tests became creative adults).

So the softer view of creativity gave way to a hard and more realistic one closely connected with hardware and survival, as are machines of war and industrial production. Research into creativity became legitimised as a properly serious concern of the military, government and industry.

The crucial impetus to the research was given by Guilford's parting address as president of the American Psychological Association in 1950(3) in which he pointed out that only 186 of 121,000 topics listed in Psychological Abstracts dealt with creative imagination.

By the time of the first national conference on creativity sponsored by the National Science Foundation at the University of Utah in 1956 the number had doubled. By 1962 when Scientific Creativity (edited by Taylor, C.W. and Barron, P.) was printed with a summary of three biennial Utah-NSF Conferences approximately 400 references appearing since 1950 were available for citation. In 1964 the comprehensive bibliography published by the Creative Education Foundation listed 515 items most of which had appeared since 1960. In 1965 4176 references were listed. Courses multiplied and research programmes started.

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(1) Myers, R.E. and Torrance, E.P., Invitations to Write and Think Creatively, Boston, Ginn & Co., 1965.


especially at the University of Buffalo, University of Minnesota (with Paul Torrance), University of Utah, Malacester College, Wayne State University, Drake University and the University of California (with Frank Barron). Adult education centres started courses and businesses as well, such as General Electric, US Steel, General Motors, Westinghouse and Bell Telephone. In 1967 the Creative Education Foundation launched the professional journal, *The Journal of Creative Behaviour*. Osborn claimed that 100,000 copies of his book *Applied Imagination* had been sold and that 1,000 courses on creative problem-solving had been inaugurated:

> Until recently the world took it for granted that a person was creative or non-creative and nothing could be done about it. But new scientific research has proved that creative ability can be deliberately and measurably developed .... A course in creative problem-solving can almost double the average person's ability to think up good ideas .... We have to be even more productive of good ideas than our enemies. (1)

It is interesting that Frank Barron who would be seen in Elliott's view to belong to this group of thinkers reverses the traditional concept of God when, at the beginning of his article, he writes:

> By his imagination man makes new universes which are "nearer to the heart's desire". The sorcery and charm of imagination, and the power it gives to the individual to transform his world into a new world of order and delight, makes it one of the most treasured of all human capacities. Indeed, when we imagine divinity, we impute to it the power to have imagined us and by an act of will to have created us. Ever since man became conscious of himself, imagination has had in it something of mystery and magic, and has seemed a process which cannot be completely understood. (2)

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Here the divine and the human again feature and man now appears to make God in his own image rather than man being made in God's image as in the traditional concept. Man is now supreme. (Despite the mystery that he says still surrounds it he goes on to outline eight years of research into a structured imagination and original thought, although he says that the mystery is not greatly diminished).

Development of the New Concept

The new concept, according to Elliott has two main versions:

According to the first of these, a problematic situation is defined as one for which no adequate response is available in terms of existing knowledge, methods and techniques, and creativity is taken to be the capacity to resolve situations of this kind. The second version identifies creativity with getting novel ideas and making something of them. By "making something of" an idea is meant either solving some existing problem by means of it, or putting it to some other acceptable purpose, or just making it available to others who actually do or might well find such employment for it. These may seem very similar but the second recognises that someone might hit on a valuable idea during a free play of fancy rather than under the pressure of a need to solve some problem and that the value of the novel idea may not lie chiefly in its usefulness for problem-solving. (1)

The decline in the old concept is seen as a result of the decline of belief in the myth that gave it its being; but the danger now is that the old concept in relation to artistic creation will be misconstrued in an effort to assimilate art and science and accommodate the old concept within the new one. In the quotations already given can be seen an attempt to view artistic creation as one aspect of problem-solving. Is it an attempt to solve the artist's inner problems? Or

problems of manipulating materials? (All this however may be unknown to the artist himself. There is more discussion of this in Chapter Two).

In fact, in the mid 1950s there were some attempts to move away from the movement of the 1920s and 1930s and pre-war years that favoured science and technology but were hostile to the introspection of the arts. People had tended to be regarded as objects, that may or may not have problems. Scientists were not interested in the finer shape of human thought and feeling but what people can be seen to do, exemplified in the behaviourist, Skinner. (1) But now articles appeared in the mid-1960s like Kagan's (2) and books like Liam Hudson's Human Beings (3) which attempted to combine this approach with the rich hinterland of intuitive judgment, ethical assumption and personal commitment on which all forms of rational activity draw.

The Relationship between Artistic and Scientific Creativity

Many writers have addressed themselves to this subject and attempted to tease out the problems in various ways. Mackinnon distinguishes between the two kinds of creativity:

Artistic creativity, represented in our studies by the work of poets, novelists and essayists, results in products that are clearly expressions of the creator’s inner states, his needs, per-

ceptions, motivations and the like. In this type of activity the creator externalises something of himself into the public field.

In scientific creativity, the creative product is unrelated to the creator as person, who in his creative work acts largely as a mediator between externally defined needs and goals. In this kind of creativeness, the creator represented in our studies by industrial researchers, physical scientists, and engineers simply operates on some aspect of his environment in such a manner as to produce a novel and appropriate product, but he adds little of himself or of his style as a person to the resultant. (1)

He goes on to say:

It would be an over-simplification to assert that the Type 1 creator creates a project or form made up of elements which did not exist for himself while Type II creator creates a novel product from already existing elements, but such a statement would probably not be far wrong.

Here we seem to be back with Elliott's two versions of creativity.

Funk and Whiteside(2) see developmental theory divided between those who look largely at 'physiognomic' properties which are concerned exclusively with dynamic and affective qualities like Gardner(3) and those whose concern is 'technical-geometric' which is essentially static and limited to measurable properties of stimuli like Piaget. (4)

Gardner maintains that participation in the arts is a more universal accomplishment than participation in the sciences and one that is achieved

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well before adolescence. Werner(1) examined both and saw the artist as largely concerned with physiognomic processes and the scientist with technical geometric. However, Wohlwill(2) and Gibson(3) in their view of perception and conception being continuous produced theories applicable to the perceptual processes of the artist and the most abstract thought of the scientist.

Sayers sees two distinctions between scientific and artistic creativity:

The first is that any invention or creative act will necessarily tend to supercede an act of earlier date. This may be true of mechanical invention and scientific formulae: we may say, for example, that the power-loom has superceded the hand-loom, or that Einsteinian physics has superceded Newtonian physics and mean something by saying so. But there is no sense whatever in which we can say that Hamlet has superseded Agamemnon .... The later in date leaves the earlier achievement unconquered and unchanged; that which is at the summit remains at the summit until the end of time. [This point will be returned to in the discussion of originality.]

The second suggestion is that, once an invention has been brought into being and made public by a creative act, the whole level of human understanding is raised to the level of that inventiveness. This is not true, even within its own sphere of application. The fact that every schoolboy can now use logarithms does not lift him to the intellectual level of the brain that first imagined the method of logarithmic calculation. But the absurdity of the suggestion becomes glaringly obvious when we consider the arts. If a ruthless education in Shakespeare's language could produce a nation of Shakespeare's, every Englishman would at this moment


be a dramatic genius. Actually all that such an education can possibly do is to improve a little the general apparatus of linguistic machinery and so make the way smooth for the appearance of the still rare, still incalculable genius. Genius is, in fact, not subject to the "law" of progress, and it is beginning to be extremely doubtful whether progress is a "law" at all. (1)

Dewey sees the distinction between artistic and scientific thus:

The thinker has his aesthetic moment when his ideas cease to be mere ideas and become the corporate meanings of objects. The artist has his problems and thinks as he works. But his thought is more immediately embodied in the object. Because of the comparative remoteness of his end, the scientific worker operates with symbols, words and mathematical signs. The artist does his thinking in the very media he works in, and the terms lie so close to the object that he is producing that they merge directly into it. (2)

Agha highlights another difference. He sees the romantic artist as working alone with a flash of inspiration but sees this concept dying with the industrial revolution:

which meant the introduction of team work, division of labour, mass-production in manufacturing and in all other fields, including the field of creativity. (3)

However, through factor analytic procedures (which are dealt with later in the characteristics of the creative person) Lowenfeld and Beittel (4) discovered in the visual arts the same factors as Guilford and his team had found in the sciences.

(4) Lowenfeld, V. and Beittel, K., Interdisciplinary Criteria of Creativity in the Arts and Sciences, in Research in our Education Yearbook NAEA, 1959, pp. 35 - 44.
Creativity as a Universal Attribute

As the new concept of creativity emerged people began to see that the words used were similar to those being used by educationalists about children. It became apparent that it might be possible for education to provide the vast numbers of people needed for creative developments in the future. In a few years public opinion about creativity had changed so that it became the potential property of all people. So we have statements like Addison's:

It is not a word used about music at all: it is human beings who are, in varying degrees, creative. All music is, or has been, created by wonderfully made humans. It is only when a teacher realises this that he can tap the sources of power that lie within every pupil we teach. (1)

Evans under the heading Creative expression by adults in the same vein writes:

Most people at some time in the safety of their bathroom indulge in a form of singing. Relations and neighbours might vary in the name they give this vocal exploration, but the fact remains that, relieved of the inhibitions caused by the external environment and stimulated by the physical process of towelling, a great many people indulge in some form of bathroom vocalising. If the atmosphere of the bathroom extravaganza could be taken on to the primary classroom of this land, a musical revolution would thrust itself upon us overnight. (2)

And Paynter declares:

It will be clear that, for imagination and inventiveness to flourish successfully, the opportunities for decision-making


and for drawing upon one's inner resources must be genuine. This is creativity and, of course, it cannot be exploited at second hand. At one end of the scale it covers that rare quality, original genius. But a high degree of originality is only one aspect of creativity. Also included is the ordinary, everyday inventiveness which grows from a combination of necessity, awareness and imagination. In this sense, creativity is something we all possess and employ, to some extent, every day of our lives. \(^{(1)}\)

(Feminists will also be glad to read this, for Maslow comments that most studies of creativity have been of essentially male or masculine definitions and male and masculine products. He advocates a research field into feminine creativity because it is less involved with products, less involved in achievement, more involved with the process itself. \(^{(2)}\)

I must add here that Vernon claims that there is no evidence that the increase in self-initiated learning in the classroom produces more artistic or scientific geniuses. Nevertheless he adds:

Perhaps they become more tolerant, open-minded, adaptable, very cultured and aesthetically sensitive; perhaps they are even happier, more fully developed personalities, but we just don't know... above the 99th percentile in the population high creative talent is not so much a matter of acquiring skills as of some inner drive which we do not understand, though we are beginning to learn about it through such work as McKinnon's and through the psycho-dynamic psychologist's explorations. \(^{(3)}\)


Paynter\(^{(1)}\) goes on to stress the role of the imagination — what Witkin\(^{(2)}\) calls *The Intelligence of Feeling*. Indeed Elliott sees the new concept as but a part of an existing concept of imaginativeness — Under the new concept to proceed imaginatively is *ipso facto* to be *creative*\(^{(3)}\). Indeed imagination is one of a number of qualities that have been equated with creativity, and there is much writing about its nature.

A definition by Andrews runs: *the process by which items of experience are combined to form new products.*\(^{(4)}\) Flannery refers to R.G. Collingwood’s definition of imagination as *human consciousness which encounters sensuous images* and likens this to aesthetic consciousness:

> An image is each sight, sound, motion, smell and taste I encounter in the world .... An image is a concrete, sensuous entity. I must have sensory contact with some part of my environment to get an image. An image is not a symbol; it is the real thing .... If you are able to think in images that process could be called 'imaging' or 'imagining'.\(^{(5)}\)

Sinnott describes its results thus:

> Hence must have come the use of fire, communication by written symbol, the

\(^{(1)}\) *Op. cit.*


\(^{(3)}\) *Op. cit.*

\(^{(4)}\) Andrews, E.G., *The Development of Imagination in the Pre-school Child*, *University of Iowa Studies Character 3 (4)*, 1930, pp. 1 - 44.

\(^{(5)}\) *Op. cit.*
invention of the wheel and bow, domestication of animals and many more. They were all novelties that could not have appeared unless there had been someone who could imagine a situation never yet experienced, who could picture in his mind something he had not seen .... But how, in turn, can we distinguish between the constructive processes of creative imagination and that image-forming which is such an important part of all mental life from childhood to old age .... Imagination of this simple kind seems to be a characteristically human trait. Indeed, it is necessary if reason is to be fruitful, for most reasoning processes require assumptions, if nothing more and these are constructions of the imagination.

The imaginative process doubtless did not come into being suddenly, but probably arose when men began to contemplate the possibility of achieving one goal rather than another. Perhaps when he first recognised the significance of the concept 'if', it was born. At any rate, its development seems to have gone hand in hand with rationality. These primitive forms of imagination, we can agree, are potentially creative though often not actually so. They have led, however, at the higher levels of men's minds to what seems a truly creative process. (1)

Writers have distinguished between forms of imagination. Roe(2) describes three modes of thinking - visual imagery, verbal imagery (divided into auditory or auditory-motor) and imageless thinking. Biologists and experimental physicists are primarily visual; theoretical physicists use verbal or other symbolic images. Psychologists and anthropologists are in the verbal group. She adds too that the type of images influenced the vocation of the person. Seashore(3) distinguishes several types of musical imagination - the 'sensuous', the 'intellectual', the 'sentimental', the 'impulsive',

the 'motor'. A person may be mainly one of these types but a musician is more usually an integration of two or more. He described a 'balanced imagination' in which this integration is well developed.

Agnew in her two papers\(^{(1)}\)\(^{(2)}\) points to more intense auditory images in musicians and indicates that it had developed through practice and training. The auditory imagery of composers was spontaneous and there was also evidence of visual and kinaesthetic imagery as well.

Griffiths\(^{(3)}\) differentiates imagination, a mode of thinking concerned with fantasy and day-dreams from imagery, a type of sensory experience in which images arise independent of external stimulation. Gerard says that:

> Imagination is more than bringing images into consciousness. That is imaging or at most hallucination. Imagination, creative imagination, is an action of the mind that produces a new idea or insight. \(^{(4)}\)

He differentiates between memory, reasoning and imagination and sees the imaginative solution as the one that relieves tension and if it is a really important imaginative insight, brings a restructuring of the universe that persists from then on in mankind. He claims that both


scientists and artists express their personality through it and that artists mould the world as well as scientists. (The nineteenth century, as we know it, is largely an invention of Balzac.) He says that ordinary people have flashes of inspiration but the survival of the idea depends on the courage to do the testing. He claims that machines can be given the functions of reasoning, memorising and hard work but they cannot have built into them the attributes of the arrival of the new (observation, attention and ordering of experience.)

Bartlett differentiates three types of imagination which he distinguishes from flights of fancy by the idea that in imagination there is a sense of a whole:

In imagination the bond is to be found in the whole imaginative structure considered in its completeness. A plan or programme is at work which cannot be found by any amount of analysis of any separate bit of the material dealt with. (1)

(This is similar to Sayers writing about 'The Idea' in 'The Mind of the Maker'.) (2) His first type of imagination is 'assimilative imagination' which is characterised by a 'resonance of feeling' with the objects of imagining. The imagination is 'directed without effort of analysis on the whole situation' and there is complete absence of criticism so that the changes made in the object are a product of 'those deep lying tendencies which are the basis of his psychological life, and which work always, though he may not know what they are doing'. His second type is 'higher' and is termed 'creative interpretation'.

The resonance of feeling is still present but the 'lack of criticism' is gone and the individual 'does not quite lose himself'. The nature of the criticism is not, however, rational and has 'no reference to any supposed objective purpose or centre of the work which is being interpreted, but only to the personal expression of the interpreter'. His third type 'constructive imagination' contains critical analysis and resonance of feeling has little or no part. It is characterised by 'the adumbration of a scheme; the articulation of a plan; the collection of material; the sorting and criticism of the material, and its relating to the central plan. The plan shapes all that follows, though at the same time the plan itself grows, changes, may even become very different from what it was at the beginning. This form of imagination may be interspersed with periods of assimilative imagination or creative interpretation and these may mark the high points of the work'. He sees the favouring of a particular type of imagination as related to temperament but sees the products of the third kind as being the most original because 'they breathe a certain uncompromising aggressiveness'. (Later it is possible to see a link between these types and various phases in creative development.) The idea of imagination being a link between the outer world and the feeling world is further developed by Dewey (1) and Polanyi (2).

Gordon relates feeling to imagination thus:


The process of becoming conscious of our desiderata is the very heart of imaginative creation. It is making our objects and our aims concrete, the reduction of a vague unrest to specific purpose, a clarification of our goal. (1)

(This links with later writers dealing with creation as the solution to a sensate problem.)

The Role of Memory

In a later article she links it with memory which she defines as the whole mind viewed as the consumer of experience.

When a stimulus is met there begins a spontaneous act of appropriation and breaking up and reworking of the object. Parts are eliminated and the rest made as available as possible for our life designs. This is the very essence of imagination. And when further, we are recognisant of the sources of the materials on which we work, this is the very essence of memory. (2)

She discusses twelve outstanding features of memory:

1) All memory is creative.
2) Memory is both productive and reproductive.
3) In the classical view of memory we do not have a complete act of remembering unless there is repetition.
4) It is possible to reproduce without recognition of it.
5) It is possible to have the subjective experience of recognising something that is really new.


Memory is selective.

There is distortion of memory.

It is of considerable theoretical interest that adults cannot recall the earliest years of their life.

Memory is greatly helped by verbal expression.

It is, however, possible to remember without words.

The very existence of substance memory makes it hard to conceive the basis of memory in mechanical terms.

Methods of memorising help to determine what is remembered.

She also notes that there is a parallel between factors favourable to memory and principles of artistic composition.

Rossman(1) distinguishes between reproductive imagination: 'the simple recall of past experiences' (practically the same as memory), constructive imagination which 'reproduces the constructive arrangements of experience' and creative imagination which 'forms arrangements which did not have a previous existence.'

Ribot(2) in an article as early as 1900 discusses the relation between creative imagination and imagination that merely represents the old. The creative imagination:

has its origin and principal source in the natural tendency of images to transform themselves into acts - more simply expressed, in the motor elements that inhere in the image.

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He discusses how hearing involves tendencies to reproduce what is heard through speech (I would add music as well) and vision is associated with movement and less accommodative, for the mental image calls for responses similar to those called forth by the corresponding actual perception.

The imagination is in the intellectual order the equivalent of the will in the order of movement, both being complex operations, goaldirected, spontaneous and needing to have an external manifestation to have any value. The intellectual side of it involves two complementary processes: dissociation - the simplification of acquired images, the heightening of some details and reduction of prominence of others - a stage preparatory to the creation of new images and association - the joining of mental states, one tending to evoke the other.

In the latter he distinguishes between association by contiguity which merely reproduces the environment and by resemblance either direct or by using a mediating idea or affect which is the basis of analogical thinking, so important in the creative process. He discusses the affective side which, although not always present, he claims, is the actual source of aesthetic creation, which can be sparked off by positive emotions and negative ones. He gives examples of fear as a source of religious creation, depression for literary works and desire for mastery over other minds as a general impetus. It also influences the association process. He sees a principle of unity behind each creation - an idea or affect around which the factors arrange themselves. If this element is weak the creation is disorganised; if too strong, it has an obsessive quality - both tending to weaken products. He discusses the unconscious side of creation and says that as the outcome of the process becomes conscious the inspiration is sudden and felt to come from a quarter outside the self.
This introduces the whole area of the place of inspiration in artistic creation. Stephen Spender describing its role in his poetic creation links it with memory:

It is perhaps true to say that memory is the faculty of poetry, because the imagination itself is an exercise of memory. There is nothing we imagine which we do not already know. And our ability to imagine is our ability to remember what we already experienced and to apply it to some different situation. Thus the greatest poets are those with memories so great that they extend beyond their strongest experiences to their minutest observations of people and things far outside their own self centredness. (The weakness of memory is its self centredness, hence the narcissistic nature of most poetry.)

Fantasy and Imagination

Pickard in dealing with the centrality of imagination to creativity makes a distinction:

No creativity is possible without imagination. But imagination is not concerned with some underworld of ego-centric realities. It enables individuals to envisage at the level of mental constructs what other younger individuals must know in concrete translations. Imagination is an integral part of intellectual development. In both logical and creative thinking it enables the individual to move beyond the immediate. It is a way of representing construction and reconstruction. According to Piaget the formal operational thinker is capable of 'delighting in what is not' (1950). The younger non-operational thinker indulges in phantasy not imagination which he lacks (Piaget 1951).

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Despite this distinction, imagination and fantasy have been used interchangeably. Singer\(^{(1)}\) differentiates early fantasy characterised by verbal role-taking from later internalised fantasy chiefly of a visual imagery type; but he does also equate it with daydreams and imaginative play and the resulting images thereby produced. Some people see fantasy as more rooted in unconscious needs while imagination is freer to work at the will of the person. Pickard writes:

> It \textit{imagination} has been confused with phantasy which has its role and value but lacks an ordered relationship with reality. Phantasy is egocentric in that it is controlled by the need and wishes of the child (Lowenfeld 1969). It is subjective assimilation.\(^{(2)}\)

And Storr in refuting Freud's view of the creative process writes:

> When we have finished reading War and Peace or left the theatre after a performance of John Gabriel Borkman we feel that our appreciation of life has been deepened, and our understanding of people extended. This is why Freud's designation of creative ability as an evasion or escape from life will not hold up. All art depends upon phantasy; but it is phantasy used to come to terms with life, not phantasy used to escape from it.\(^{(3)}\)

Sayers writes vehemently against the psychologists:

> It is here that we reach the great watershed that divides Imagination and Fantasy-activities often confused by psychologists. "The subject" they say "invents things about himself", as though there were but one kind of invention. In fact, the two things have almost nothing in common, except that the personality is the raw material for both. They can exist side by side in the same child, and are distinguished by him immediately and infallibly.


Fantasy works inwards upon its author, blurring the boundary between the visioned and the actual, and associating itself ever more closely with the Ego, so that the child who has fantasised himself a murderer ends by becoming a Loeb or a Leopold. The creative Imagination works outwards, steadily increasing the gap between the visioned and the actual, till this becomes the great gulf fixed between art and nature. Few writers of crime-stories become murderers - if any do, it is not as a result of identifying themselves with their murderous heroes ......

It is hard to persuade psychologists that this distinction between Imagination and Fantasy is fundamental - chiefly because of their rooted refusal to receive the writer's testimony on their behalf .... The same thing may be said of Imagination and Fantasy: the personality is the raw material of both, the only difference is what becomes of it. The stronger the creative impulse, the more powerful is the urge away from any identification of the Ego with the created character.

Creative Imagination is thus the foe and antidote to fantasy-a truth recognised by psychologists in practice, but frequently obscured in their writings by a muddled use of the two terms as though they were interchangeable. Evidence of a habit of fantasy in a child is no proof of creative impulse: on the contrary. The child who relates his fantasied adventures as though they are facts is about as far removed from creativeness as he can possibly be; these dreamy little liars grow up (if into nothing worse) into the feeble little half-baked poets who are the irritation and despair of the true makers. The child who is creative tells himself stories, as they do, but objectively; these usually centre about some hero of tale or history, and are never confused in his mind with the ordinary daydreams in which he sees himself riding rough-shod over the grown-ups or rescuing beloved prefects from burning buildings. Even if he does dramatise himself and make "the bard the hero of the story", this is pure dramatisation, and can be carried on parallel with his consciousness of real life, without ever at any point meeting it. It is not that the one kind of fancy develops into the other; they are completely and consciously independent. Accordingly, the first literary efforts of the genuinely creative commonly deal, in a highly imitative manner, with subjects of which the infant author knows absolutely nothing, such as piracy, submarines, snake-infested swamps, or the love-affairs of romantic noblemen. The well-meant exhortations of parents and teachers to "write about something you really know about" should be (and will be) firmly ignored by the young creator as yet another instance of the hopeless stupidity of the adult mind. Later in life, and with increased
practice in creation, the drive outward becomes so strong that the writer's whole personal experience can be seen by him objectively as the material for his work.

I am not arguing with the authorities about this; I am telling them, because it is a thing that they often find very foxing. The child who dresses up as Napoleon, and goes about demanding the respect due to Napoleon, is not necessarily a little paranoiac with a Napoleon fixation; he is just as likely to be an actor. (1)

She is supported by Fernberger(2) who distinguishes four kinds of thinking: fancy (the new arrangement of concrete images without direction), revery (the rearrangement of verbal images without direction), creative imagination (directed rearrangement of old concrete images), reasoning (directed rearrangement of verbal images). He claims that artist and engineer both use creative imagination but the difference is in the goal and images used. (This is discussed again when the products of creative thinking are examined).

The Role of Curiosity

Another element in creating is curiosity. Maw and Maw(3) see it as an:

aspect of creativity and problem-solving ...... It is related to or is a part of motivation, set, perception and interest and .... it may have a genetic origin.


(2) Fernberger, S.W., Thinking in Fernberger, S.W., Elementary Psychology, New York, Crofts, 1936, pp. 227 - 58.

Berlyne(1) distinguishes perceptual curiosity, elicited by novel stimuli which reward the organism, from epistemic curiosity generated by the perception of conflicting solutions to a problem.

Arnold(2) sees that children's curiosity needs encouraging along with his fantasies if he is adequately to attempt the preparation stage in the creative process. In a later article(3) he also lays great store by the questioning aspect of the creative process (which he regards as the first stage) and outlines how parents and teachers inhibit children's innate desire to question and remarks how little part questions play in adult conversation.

Pielstick and Woodruff(4) postulate a third aspect (very relevant for musical work) that evoked by manipulative stimuli (reinforced by Torrance.) (5) But Walker(6) criticises the Manhattanville Music Curriculum Project for using creativity interchangeably with curiosity, quoting a reference to:


'man's propensity to probe the unknown, to experience the world imaginatively and to form impressions from his contact with the elements in his environment (p.1)'.

Walker also mentions later references to removing 'inhibiting' factors in the teaching situation. He comments:

Creativity is confused with a process of exploration and the utilisation of this process as a tool with which to generate interest in music. If one can say that creativity means the process and the product of a Mozart conceiving, writing and completing his Symphony in C minor No.40, then it is something more than mere curiosity and exploration of sound. But this is a much more complex argument than there is space for here. The important point is although the writers use the word creativity they do go on to specify in some detail what they conceive the process and its relevance to a number of aspects of music be. For instance, they advocate 'free exploration of sound in the classroom'; the inevitable noise is called 'creative fall-out' (p.1). This is not necessarily far removed from the kind of situation one imagines composers like J.S. Bach, Beethoven and Chopin to be involved in as they improvised, that is, tried out their musical ideas in sound, before committing themselves to paper. There must have been a good deal of 'creative fall-out' in the process. Indeed Beethoven's notebooks would tend to confirm this. If this is creativity then it clearly has validity not only in the world of musical artists but possibly in education, if one wants to provide situations for children which resemble those of the artist in acts of 'creating' music.

The Role of Originality

This is another important component in creativity. Guilford defines it as:

the production of unusual, far-fetched, remote or clever responses .... measured in terms of a certain population that is culturally homogeneous.(1)

Torrance accepts this with the proviso that the response is:

relevant to the task, shows intellectual strength or represents some breakaway from the obvious, the commonplace and banal. (1)

This aspect is very important in so-called tests of creativity. Indeed the Thesaurus of Eric Descriptors defines creativity as:

The attribute of constructive originality often manifested in the ability to discover new solutions to problems and find new modes of artistic expression. (2)

Hallman (3) lists several elements in originality - newness, unpredictability (they have new configurations), uniqueness (they are incomparable), surprise. He questions whether originality requires a tangible object. And Whiting (4) differentiates between 'creative thinking' and 'original thinking', the latter involving the production of new, but not necessarily useful ideas, the former combining usefulness and originality.

However, Sayers takes a passage from her book Nine Tailors and shows how she drew on The Book of Job, Isaiah, Milton's At a Solemn Musick, Keats's The Eve of St Agnes, Browning's The Statue and the Bust, the angels in the roof of March and Needham Market parish churches and Tennyson's The Holy Grail. She concludes:


But what is important and not always understood in these days, is that a reminiscent passage of this kind is intended to recall to the reader all the associated passages, and so put him in touch with the sources of power behind and beyond the writer. The demand for "originality" - with the implication that the reminiscence of other writers is a sin against originality and a defect in the work - is a recent one and would have seemed quite ludicrous to poets of the Augustan Age, or of Shakespeare's time. The traditional view is that each new work should be a fresh focus of power through which former streams of beauty, emotion, and reflection are directed. (1)

Jenny Fowler outlines what originality means for a composer:

Someone has asked for a piece for violin and piano. I think of the sound of a violin, the sound of a piano. Stale. There are instruments which have been constantly 'worked over'. It is a bit like the "big bang" development of the universe. First the middle, strongest and most resonant sounds are explored, then the edge are expanded: composers pushing out constantly to the edges of register, to the peripheral sounds of whispers and grittiness. Sometimes whole pieces are made solely from outer-most edges: I think of a piece for piano by Michael Finnissy ("Grainger"). It takes place entirely in the top octave and bottom octave of the piano - the player stretched out, reaching to the limits of his own reach, to the limits of the known keyboard. Sometimes whole concerts take place at the edges of the sounds made by an instrument, particularly when an adventurous player, willing to explore new methods of sound production, attracts new pieces. There are times when one longs for a "normal" sound in the middle range! - probably an element of bad programme-planning here. I have no doubt that there are plenty of new, exciting sounds still to be found on pianos and violins: developments with electronics, still new methods of production. (That is the amazing thing about the standard instruments in the "classical" tradition - the extent to which they have been able to expand and develop: meeting the demands of so many composers with quite different aims.) ... People sometimes ask why composers are always in search of new sounds. Perhaps we are also suspected of implied criticism of what has gone before. ("What was good enough for Beethoven" .... As also:

"What was wrong with C major then?"

Why always seek the new? We have to do battle against the inertia of the human mind which is biased towards travelling along known paths in known directions. Ask anyone to think up a bit of music and it so easily comes out as yet another version of the familiar. Even in the great composers' notebooks, this is sometimes true of the first attempts. One's own expectations like everybody else's, - are formed from the known. Somehow one has to trick the imagination into making a step - see a vision outside itself - communicate the excitement - have something to say.

Of course, playing with new sounds, does not necessarily mean that a composer has something new to say! But it is one way of stimulating the imagination into a new direction. There are lots of others: combining known patterns into unknown simultaneity or juxtaposition; hearing music from another culture remote in distance or time; using ideas from other art forms; creating a conscious and rigorous grid to force the construction out of other moulds (how difficult it was for composers to escape that soft, seductive, all-embracing cushion of romantic harmony, and what efforts they made to struggle from its embrace!)

Looking back from a perspective of about 50 years, some of the "steps" of a composer's imagination, seeming huge at the time, tend to dwindle. That composer will suddenly seem very well-rooted in his past. But that step, though small, was never inevitable. Out of the million possible directions that one was taken; not the other 999,999. (1)

But in the same article she deals with another view of originality - that of being new to the composer:

When I look back over past work, I am sometimes surprised by observing the constant recurrence of certain ideas - almost obsessions. It always seemed to me that I was creating a completely new piece, beginning from scratch, each time. The vision of each new piece comes complete with the feeling that it is unique; carries with it the heady excitement of the new. That is what one tries to convey.

This isn't entirely an illusion. Each solution could have been something else. One exercises choice all along the way.

I find it odd that so many writers on music sound such a pessimistic note about the future .......
(loss of direction; all paths dried up; complete fragmentation; cul-de-sac, cul-de-sac ...........)

It reminds me of the sad thought that came to me when I was about eight years old. I was secretly day-dreaming about becoming a composer (not very hopefully: I knew that composers were German, and that they lived a long time ago). It suddenly seemed that perhaps all the combinations of notes possible, had already been written. Surely Bach by himself, must have explored every permutation and combination? I started to work it out, and was relieved to find that the possibilities of note following upon note, or combined with other notes, were infinite. No doubt I was right to feel humble, and wonder if anyone could say something that Bach hadn't already said, but my pessimism had been rather naively literal.

It is always possible to imagine "something other". Almost by definition, only a non-creator can talk about cul-de-sacs. (1)

Hausman makes this claim: creativity occurs on condition that a new and valuable intelligibility comes into being (2) which embodies many of the elements explored later in this thesis. Hausman investigates the problems definitions may run into, either by reducing creativity to natural events or by treating it as wholly unintelligible and mysterious. Although the structure to be intelligible must have some link with the past, it must have coherence despite the fact that its structural constitution contrasts with all that was intelligible before it came into being. The concept of value will be examined later but he makes the points that judgements of value change but that the notion of value excludes works produced only to be different eccentricities. He also adds to his definition the notion of spontaneity as well as directed


control and for this reason excludes the child's learning his

tables as creative. He then summarises:

The criteria of creativity are:

1. created outcomes have intelligible structures that are irreducible,
2. the structures of created outcomes are unpredictable and inherently and usually instrumentally valuable,
3. and the acts that lead to creative outcomes include an element of spontaneity so that although they are directed and are controlled they are discontinuous.

The Four Areas of Creativity

It is with such writing about originality that we come to very important distinctions in the definitions of creativity. These distinctions have so far been undifferentiated here. Research into creativity has followed four areas - the creative products, the creative process, the characteristics of people who produce creative products and environmental factors that favour creativity. The last of these does not affect the definition but creativity has been defined in terms of all of the first three. The creative products approach is favoured by those taking responsibility for the consumer's or society's welfare such as administrators of a business enterprise or of a public institution, the creative process by those who are themselves creative individuals e.g. novelists, painters, musicians, the characteristics of people who produce creative products by those who are responsible for picking people to fit particular positions such as personnel
managers and environmental factors that influence creativity by those responsible for the continuing care and cultivation of personnel such as teachers and managers or those involved in explaining changes taking place in persons because of cultural or physical surroundings such as sociologists, cultural historians and anthropologists.

Rossman defining 'invention' makes five uses of the word which could also be used of 'creation':

1. The thing invented;
2. The quality and property of the invention;
3. The mental process;
4. The ability to invent;
5. The historical fact that the invention has been made. (1)

In 'creation' the first two have been telescoped and also to some extent combined with 5. It is nonetheless possible in the literature on creativity to see these three strands present in those concerned with the created product.

Hallman links them all together when saying that the creative act has five major components:

1. It is a whole act, a unitary instance of behaviour;
2. It terminates in the production of objects or of forms of living which are distinctive;
3. It evolves out of certain mental processes;
4. It co-varies with specific personality transformations;
5. It occurs within a particular kind of environment. (2)

Despite these links it is still useful to look at the various areas separately.

The Creative Product

First of all creativity has been defined as the making of novel products. Bruner presents a succinct definition in this way. According to him the hallmark of creativity is that the created work produces:

effective surprise; the work must be novel and original, it must take us beyond common ways of experiencing the world and it must be of some value .... The triumph of effective surprise is that it takes one beyond the common ways of experiencing the world. Or perhaps this is simply a restatement of what we have been meaning by effective surprise. If it is merely that, let me add that it is in this sense that life most deeply imitates art or that nature imitates science. Creative products have this power of re-ordering experience and thought in their image. In science the reordering is much the same from one beholder to another. In art, the imitation is in part self-imitation. It is the case too that the effective surprise of the creative man provides a new instrument for manipulating the world - physically as with the creation of the wheel or symbolically as with the creation of e = m^2 (1).

Later he outlines three types of this - 'predictive surprise', 'the kind of surprise that yields high predictive value' like scientific formulae, 'formal surprise' usually found in Logic and Mathematics and possibly Music ('the ordering of elements') and 'metaphoric effectiveness' 'connecting domains of experience previously apart'. He adds (thus agreeing with later accounts of unconscious activity):

I would propose that all of the forms of effective surprise grow out of combinatorial activity - a placing of things in new perspectives. (2)


Briskman\(^{(1)}\) argues strongly for the priority of the product:

In other words, a) the creativity of the product has logical priority over b) the creativity of the person and his or her psychological processes, so that we cannot identify b) independently of a). And this means that we equally cannot explain a) when making reference to b). So if we do want to explain the creativity of some scientific or artistic product, we shall, it appears, have to make reference not to b) but to the objective relation to prior scientific or artistic achievements.

He adds the further argument:

We shall not be able to describe, let alone understand, the creative process unless we make reference to the intermediary products which "function" so to speak as "tools" in the creative process itself .... Not only are we unable to identify a psychological process as creative in the absence of an identification (or evaluation) of its resultant product but we are unable to identify any purely psychological process at all as the creative process. For any such process which we are likely to call "creative" will involve an ineliminable interaction between the creator's psychological state and his own products, with the latter having a genuine feedback upon, and thus themselves actually helping create the former.

(This problem of the interaction of the creator and medium is further explored in Chapter Two when a linear view of the process is opposed to one of more subtle interaction between artist and medium.) He sums up his definition:

A creative, scientific or artistic, product has, I suggest, the following characteristics: First, relative to the background of prior product, it is a novel product, second it puts this novelty to a desirable purpose by solving a problem, such problems being themselves relative to this background and emerging from it. Third, it does so in such a way as to actually conflict with parts of this background, and necessitate its partial modification, and to supplant and improve upon parts of it. Finally, this novel, conflicting problem solution must be favourably evaluated:

\(^{(1)}\) Op. cit.
it must meet certain exacting standards which must in themselves be part of the background it partially supplants. Any product which meets all four of these elements I shall call a 'transcendent product' for it may be said to transcend a background of prior product against which it emerged.

Stein defines the creative product similarly:

The creative work is a novel work that is accepted as tenable or useful by a group in some point in time ... By 'novel' I mean that the creative product did not exist previously in precisely the same form. It arises from a reintegration of already existing materials or knowledge, but when it is completed, it contains elements that are new. (1)

There is a sense in which all products are new, not exactly the same as any other - even a child's colouring in of the outline of a house but I do not think Stein means that. However, Korzenik writes of this problem over originality (which will be discussed again later):

By contrast, Guilford's factor of originality appears to be inappropriate because young children's picturing involves exploitation of given sensory knowledge of the world without the firm knowledge of the social conventions of picturing. Originality, deviation from convention such as 'boundary pushing' and 'boundary breaking' (Eisner (1965)) are more applicable to adult art than to the art of the young child. (2)

There is a danger in stressing novelty. Elliott (3) sees it as one of the dangers of applying the new concept of creativity to artistic creativity. The traditional concept allows creativeness to be ascribed


to beautiful objects regardless of whether they are innovative:

Although Eliot has contributed more than Yeats to the language of twentieth century poetry many artists would want to say that Yeats is the greater and more creative poet ...........

Here is an instance where the new concept serves art worse the traditional concept. (In music the same comparison could be made of Haydn and Mozart and it links with the Sayers quotation on p. 34.) Meyer\(^{(1)}\) makes a very closely argued case for the evaluating of compositions along the line of information theory that requires the unexpected for musical meaning. He says that:

> musical meaning arises when an antecedent situation, requiring an estimation of the probable modes of pattern combination, produces uncertainty about the temporal-tonal nature of the expected consequence.

He goes on to describe how music must be evaluated syntactically, writing:

> Yet in so far as the intricate and subtle interconnections between musical events, whether simultaneous or successive, of a complex work involve considerable resistance and uncertainty - and presumably information - value is thereby created.

He adds that greatness also involves the interaction of syntactical relationship and associative-characterising and from this analysis declares Beethoven's 9th Symphony to be a greater work than the more sensuous *Afternoon of the Faun* by Debussy. Many may dispute this conclusion but it does tie in with the discussion in Part Two of the development of childrens' compositions and how with increasing maturity they develop the capacity for introducing musical surprises in an

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established style - speculating in a musical style.

Other writers, although primarily concerned with the process, do see the interpersonal aspect of the creative process in the communication between the creative individual and as his audience as important e.g. Dewey(1) and Kris(2).

The Creative Person

The next definition centres round the person who produces novel products. Guilford expounded this view to the full:

In its narrow sense creativity refers to the abilities that are most characteristic of creative people. Creative abilities determine whether the individual has the power to exhibit creative behaviour to a noteworthy degree. Whether or not the individual who has the requisite abilities will actually produce results of a creative nature will depend upon his motivational and temperamental traits. (3)

He brought the intellectual aspects of the problem into focus in his theoretical model of the structure of the intellect. He divided intellectual factors into five operations - cognition (in which knowledge is discovered), memory (a retention of knowledge), divergent thinking (the production of the best or only solution) and evaluation - into five kinds of content - figural (e.g. size, form, colour, texture, things we see or hear), symbolic (letters, digits, conventional signs), semantic (verbal meanings or ideas), behavioural (what he calls social

(2) Kris, E., Psychoanalysis and the Study of Creative Imagination, Bulletin of New York Academy of Medicine, XXIX, 1953, pp. 334 - 51.
(3) Guilford, J., Creativity (1950), op.cit.
intelligence concerned with desires, intentions and thoughts, although he said he has done little research into this area) - and into six products - units, classes, relations, systems, transformations, implications. This he drew as a three-dimensional figure giving 150 ways of intellectual functioning. He claimed to be able to identify at least 50 of these by tests. He went on to identify the creative abilities which he listed as:

1. Sensitivity to problems;
2. Fluency, which can be divided into word fluency (identified by L.L. Thurstone) (the ability to produce words each fulfilling the same letter requirements); ideational fluency (ability to produce quickly units of meaningful words in response to a problem), associational fluency (ability to produce words with relation to a given word) and expressional fluency (the ability to put words into organised phrases or sentences);
3. Flexibility (the ability to change the meaning or re-interpret something) which he divided into spontaneous flexibility (flexibility when it was demanded) and adaptive flexibility (flexibility in response to a problem);
4. Originality;
5. Elaboration.

(He found two abilities - to synthesise and analyse - not supported by his research.) He then linked these abilities to his intellectual model such as ideational fluency being the using of divergent thinking operations to produce semantic unity and elaboration being the use of divergent thinking operations to produce semantic classes, word fluency - the using of divergent thinking abilities to produce symbolic units and
expressional fluency - the using of divergent thinking abilities to produce symbolic systems. He concluded that most creative abilities fell into the divergent thinking operations although there were some exceptions. He listed semantic redefinition and symbolic redefinition as being in the convergent thinking operations and sensitivity to problems as being in the evaluation operations area. He also concluded that cognitive abilities were basic. Without having information there was no intellectual performance of any kind. Learned information was of no value later unless it was retained. Evaluative abilities were needed if there was to be any self-criticism, which there should be if the creative thinker was to complete his job. He claimed that IQ tests had concentrated on a very few factors in the structure of intellect. For example, the IQ for verbal intelligence concentrated on verbal comprehension - the ability to cognise semantic units. He added that there is nothing of divergent thinking or transformations involved. He concluded that there was, therefore, not necessarily a correlation between IQ and creativeness and also that creativeness was a product of both heredity and the environment. In the latter he exhorted teachers to include more tasks involving divergent thinking in the curriculum, although he made the point that it is not clear that developing children's creative ability in art, for example, will necessarily affect their creative ability in other areas. (In this he differed from the view of Lowenfeld and Read.) For the musician, it is clear that musical composition is in the figural area and that most of the operations and the products will be involved in it. All these factors will operate in the thinking of the children about music as well.
His original survey was of the scientist, technologist, including the inventor. But he concluded:

Some of the hypotheses mentioned here may apply also to areas of creative endeavour other than science, technology and invention. .... The factorial conception of personality leads to new way of thinking about creativity and creative productivity. According to this point of view creativity represents a pattern of primary abilities, patterns which vary with different spheres of creative activity. Each primary ability is a variable along which individuals differ in a continuous manner.

Guilford's thesis has been developed by many writers. Hilgard\(^{(1)}\) talks of the limitations of factor analysis because it is limited by what the tester includes in his battery and the people he finds to test. He supports Gough\(^{(2)}\) who list five factors:

- Intellectual confidence;
- Enquiringness of mind;
- Cognitive flexibility;
- Aesthetic sensibility;
- Sense of destiny.

These last two are additional to Guilford. Aesthetic sensitivity is a deep seated preference for an appreciation of elegance of form and of thought, of harmony wrought from complexity, and of style as a medium of expression. Sense of destiny includes something of resoluteness and certainty of one's worth and validity of one's own future and (naturally) of egotism. (Here can be seen another attempt to merge Elliott's two versions of creativity).

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Barron in a survey of creative scientists and artists lists the following characteristics of creative people:

Creative people are especially observant and they value accurate observation (telling themselves the truth) more than people do.

They often express part-truths, but this they do vividly; the part they express is the generally unrecognised; by displacement of accent and apparent disproportion in statement they seek to point to the usually unobserved.

They see things as others do but also as others do not. They are thus independent in their cognition and they also value clear cognition. They will set a great personal pain to testify correctly.

They are motivated to this value (independent sharp observation) both for reasons of self-preservation and in the interests of human culture and its future.

They are born with greater brain capacity, they have more ability to hold many ideas at once, and to compare more ideas with another - hence to make a richer synthesis.

In addition to unusual endowment in terms of cognitive ability, they are more vigorous and have available to them an exceptional fund of psychic and physical energy. Their universe is thus more complex and in addition to usually leading more complex lives, seeking attention in the interest of the pleasure they obtain upon its discharge.

They have more contact with most of the unconscious - with fantasy, revery, the world of imagination.

They have exceptionally broad and flexible awareness and the self is strongest when it can regress (admit fantasies, naive ideas, impulses in consciousness and behaviour) and yet return to a high degree of rationality and self-criticism. The creative person is both more primitive and more cultured, more destructive and more constructive, crazier and saner, than the average person. When the distinction between subject (self) and object is mostly secure, the distinction can with most security be allowed to disappear for a time (as in mysticism and in deep love). This is based on true sympathy with the not-self, or with the opposite of those things which comprise defensive self-definition. The strong self realises that it can afford to allow regression, because it is secure in the knowledge that it can correct itself. The objective freedom of the individual is at a maximum when this
capacity exists, and creative potential is
directly a function of freedom. (1)

Although this definition is linked with a definition of the creative
person it will be seen in Chapter Two as having much in common with
the characteristics of the creative process.

Lange-Eichbaum distinguishes between talent and genius. Genius
he says:

cannot be anything absolute, cannot be
anything firmly established once for
all ...... On the contrary genius must
be a valuation, a denomination of value or
an experience of value. All types of
individuals can be raised to the rank of
genius, all conceivable varieties and grades
of talent, or half-talent or no talent at
all ...... No one is primarily a genius;
he becomes a genius ...... Genius is the
consummation of sociological, religious and
psychological factors. (2)

But talent he adds, is an inborn endowment. Talented people can more
readily become geniuses but not necessarily. Society decides a
genius by means of fame: the living recognition on the part of
numerous persons that something has at some time been peculiarly
impressive. Hence is raised the nature/nurture question and also the
issue that person and product are also closely linked.

Creative Ability

Against these definitions is the view that creativity is not an
ability that can be applied in any sphere. The Gulbenkian Report
The Arts in Schools refutes the idea that there is:

(1) Barron, F., The Psychology of Imagination, in Parnes, S.J. and
Harding, H.P. (eds.), A Source Book of Creative Thinking, New York,

(2) Lange-Eichbaum, E., The Problem of Genius, New York, Macmillan,
1932, p. 187.
a separate mental faculty responsible for creative work whose absence or presence in a person can be measured. A second misconception associated with this is that some people have this faculty or capacity for creative thinking and that others do not. (1)

The report concludes that creativity is not a general capacity but is seen in relation to specific activities - writing, painting, composing, philosophy or whatever. Creativity in one sphere does not guarantee it in another. So it must be learned in every medium. The report also criticises talk about creativity as a mental capacity not linked inextricably with what a person does or produces:

Talk about different degrees of creativity has to be related to the criteria by which these products and activities can be assessed in the public form by those who have the knowledge and ability to make informed judgements about them.

White agrees with this and also refutes the idea that there is:

Some sort of inner source of mental energy which can be dammed up or, alternatively set free to flow into different channels of intellectual or aesthetic activity. (2)

In this he attacks Lowenfeld and Read who saw free activity in art lessons as a way of promoting creativity in any discipline. Read, quoting Jaensch observes:

Once the creative process is freed in one direction .... once the shackles of school passivity are broken at one point, a kind of inner liberation, the awakening of a


higher activity sets in. Above all, to the eidetic sphere of development, as well as to the mentality of the artist, there belongs a peculiar structure of the mental powers, particularly of thinking; and the arousing and vivifying of these powers benefits all subjects taught, even the most rigorously logical.(1)

While it is undoubtedly true that the faculty needs specific skills and experience in a specific discipline to find its realisation in created products (which will be discussed more fully in Chapter Two) it would seem that there are common faculties in creative people in a number of spheres, faculties like originality, imagination, divergent thinking and so on.

The DES document The Curriculum from 5-16 seems to straddle these two approaches. It defines an area of learning and experience called 'aesthetic and creative' which it says:

is concerned with the capacity to respond emotionally and intellectually to sensory experience; the awareness of degrees of quality; the appreciation of beauty and fitness of purpose. It involves the exploration and understanding of feeling and the processes of making, composing and inventing. Aesthetic and creative experience may occur in any part of the curriculum, but some subjects contribute particularly to the development of pupils' aesthetic awareness and understanding because they call for personal, imaginative, affective and often practical, responses to sensory experience. Art, crafts, design, some aspects of technology, music, dance, drama and theatre arts, in particular, promote the development of the imagination and the creative use of media and materials. (2)

(1) Read, H.E., Education throughout Art, London, Faber and Faber, p. 59.

This would seem to imply that there is some generalised creative capacity that is linked with the imaginative and the affective. However, later, is added:

Primary age children can begin to consider the importance of the choice of medium in creating a particular effect, while older pupils may examine the relationship between aesthetic and fitness for purpose in design.

Laub-Novak takes up the same idea:

In speaking to and reading the lives of creative writers, scientists, theologians, artists, I find marked similarities in the way creative people proceed. To take an idea, an image and force all detail into a preconceived order is to make the work rigid. One would fail then to respond to interior contradictions, suggestions, new lines of thought, images, colour and form. Each decision on how to proceed must be perceived clearly-evaluated and re-evaluated. Our perception needs to be open, flexible. Not set solely upon one solution, but able to perceive multiple solutions to a problem. Finally we transcend conscious acts. Then a truly creative act emerges. (1)

This leads to the next area of definition.

The Creative Process

If Guilford and his followers are concerned primarily with the abilities or nature of the creative person, others sees the process as supremely important. Indeed, the American Patent Office in its legal definition of an invention once defined it as a process which creates:

It is the giving birth to a new idea capable of physical embodiment. (2)

(2) Merwin, H.C., Patentability of Invention, Boston, Little, Brown and Co., 1883, p. 10.
Torrance defines creative thinking as:

the process of sensing gaps or disturbing missing elements, forming hypotheses concerning them; testing these hypotheses and communicating the results, possibly modifying and restesting the hypothesis. (1)

However this would seem to have more to do with scientific and problem-solving situations than artistic ones (although it does link with Witkin's idea of a sensate problem).

Pickard sees it like this:

Creativity which is a way of knowing involves the knower in the reinterpretation of ideas and events as he has come to know them. It requires that reality be transformed in some way. In order to change something we must first understand it if our action is to have meaning and we are to grasp the implications of the changes we make. An important step, therefore, in all our transformations of reality is that of our understanding and interpretation of subjects and events, for according to our construction of reality so we shall set about reconstructing it. (2)

(Referring to the possibility of young children being creative as they have insufficient grasp of reality, a point which is discussed later in Chapter Two.) She continues:

A creative transformation is a process. Apprehension of the issue or problem is a first step in the process though it may well be preceded by less conscious activity ..... A creative process does not guarantee a creative outcome. A process may fail to produce a conclusion or it may lead to a conclusion that is not recognised as creative either by the individual responsible for the process or by society at large.

(1) Torrance, E.P., Guiding Creative Talent, op.cit. p. 76.
Such a definition leaves room for a wider definition of creativity as Tyson suggests:

How valid is it to talk of creativity in human relationships, for example? A housewife and mother, providing a happy supportive background for her family, may be being creative, although it may not be possible to assess what appears to be an intangible product. (1)

Fromm defines what he calls his second type of creativity - not that of creating something new like a symphony or poem but creativity as a character trait - the ability to see (or to be aware) and to respond. He sees it operating within the self and in relation to others and concludes:

Let me say again that creativity in this sense does not refer to a quality which particularly gifted persons or artists would achieve, but to an attitude which every human being shares and can achieve. Education for creativity is nothing short of education for living.

Thus he sees the creative potentialities as an interacting process, unlike Rogers, Maslow or Guilford who have more of a sense of communication, energy, stimuli flowing outwards.

Cottle takes up the point of the uncertainty of the outcome of the creative process:

For although the creative act is not one in which there is total conscious control of technique creativity does require an ability to start with certain ideas and to be able to assess and perhaps change goals and ideas as the work in progress. Often, too, it requires one to be able to work without knowing where one's project is heading. (3)


Mackinnon also stresses the adaptiveness necessary in the process. It fulfils three conditions: It involves a response or an idea that is novel or, at the very least, statistically significant.\(^{(1)}\) It must be adaptive to reality:

It must serve to solve a problem, fit a situation or accomplish some recognisable goal .... It involves the sustaining of the original insight, an evaluation and elaboration of it, a developing of it to the full. Creativity from this point of view, is a process extended in time and characterised by originality, adaptiveness and realisation. It may be brief, as in musical improvisation, or it may involve a considerable span or years as was required by Darwin’s creation of the theory of evolution.

Bruner’s definition also includes both process and product for he claims it demands:

a high degree of motivation and persistence, passion and decorum, commitment and detachment; it demands intellectual and emotional openness and flexibility and fluency in thinking. The created object (idea) is the product of such a process and its creation requires that the raw material, the initial inspirational sources, be transformed. This means that the artist (scientist) selects, changes, fashions the initial material by a process of will and decision, into a final articulated form which in the end bears little resemblance to the raw material, and is finally detached from the maker’s personal motivation.\(^{(2)}\)

Inherent in this type of definition is the notion that creativity is, at least to some degree, an innate gift, talent and temperamental disposition. Thus his definition combines much of the previous thinking.

\(^{(1)}\) Op.cit.

\(^{(2)}\) Quoted in Dudek, S.Z., Creativity in Young Children - Attitude or Ability, op.cit.
Roger's definition also takes up this point:

My definition, then, of the creative process is that it is the emergence in action of a novel, relational product, growing out of the uniqueness of the individual on the one hand, and the materials, events, people or circumstances of his life on the other. (1)

He has, however, already stated:

Creativity is not in my judgement, restricted to some particular content. I am assuming that there is no fundamental difference in the creative process as it is evidenced in painting a picture, composing a symphony, devising new instruments of killing, developing a scientific theory or creating new formings of one's own personality as in psychotherapy.

This links back to the Laub-Novak quotation cited earlier on p. 70.

Marsh introduces the term discovery:

Creativity is not possible without discovery, for when an individual thinks or acts creatively, he is discovering something previously unknown to him. As a child explores a given musical problem, he may think in ways that are new to him, and, in so doing, make discoveries, or find solutions which he may then apply to further musical expression. (2)

Discovery is also one of the fundamental activities in the Manhattanville Music Curriculum Project. (3) As the basic position regarding the nature of the student was obtained from the works of Bruner, Holt, Piaget, Parnes and others it is not surprising that:

inductive, deductive and intuitive reasoning, the discovery-orientated strategies and the obvious concern for the development of analytical, judicial and creative thinking were all consistent with decisions regarding the nature of the learner.


Discovery is further defined as 'creative discovery' and distinguished from 'clever observation' which is defined as 'recognition of factors which, while they may evoke a personal response are basically external'. Walker, however, questions these claims:

The argument is detailed and intricate but not entirely convincing, for how can one discover entirely from personal experience the intrinsic values of a historical work of art? If one cannot, then where in the scheme of things does an education for an appreciation for such works of art come? In the detailed content of cycles and strategies it appears that one should explore a particular aspect of musical language and then listen to recordings of works which exemplify this. But this comes after extensive examination of the works completed by students in the exploring process. This exploring is in fact a problem-solving situation in the manner expounded by Bruner. Thus concept understanding is the primary goal of the curriculum (1).

Although this type of learning situation may be seen as a modern development, Froebel in 1879(2) suggested that educators took their cues from the early learning activities of children. He urged then:

- to comprehend the earliest activity of the child, the impulse to spontaneous and personal activity, to encourage the impulse to self-culture and self-instruction through self-shaping, self-observation and self-testing.

He considered knowing, feeling and willing as the three activities of the mind. He advocated the involvement of the child with as many sensory experiences as possible – sound (song and rhythmic bodily

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movement), modelling, drawing, painting, printing. He believed that nothing is more contrary to nature than to forbid a young child the use of its hand.

Although these methods may seem a modern development in music education, it is interesting to read this passage from Yorke Trotter:

The aim of the teacher should always be to develop the innate feeling for music in the child. This can best be brought about by causing the pupil to do things himself. One of the best means of developing the feeling is to cause the pupil to finish a theme, as soon as sufficient material has been given. The teacher sings or plays a phrase, the pupil at once sings an answer to it. From the answer the teacher learns if the first principles of musical construction are in the child's mind. If the answer is a suitable response to what is given, the tonalitive principle of key centre is present. It will be found that the principle of reiteration appears when a certain stage is reached. The child will reproduce the material that appears in the question, not generally as mere repetition, but as development. The length of the phrase that is offered depends on how much the child can hold in his mind. Obviously, a very young child can only assimilate a very short phrase; an older child can understand long phrases; and will be able to sing complete melodies without modulation to different keys. In every case the answer must be given without premeditation. It must be the intuitive expression of the pupil's feelings. Answers made by consideration of the various factors of the given theme are of no service in developing musical feeling. Unless there is spontaneity, there can be no good results. (1)

It is clear from this that he has considerable experience in this work and this conclusion echoes the findings of other people working in creating music with children that will be discussed later. It is interesting to note too that he recommends an intuitive response and

the suspense of critical faculties in common with the American writers on creativity of some 50 years later.

Dewey in the early 20th century was also advocating 'reflective enquiry', and the process rather than the product as educationally more sound, for the use in inquiry of doubt, of tentative suggestion, of experimentation will help deal with the problems in the future. School subjects may be used as:

presenting problems to be solved by personal reflection and experimentation, and by acquiring definite bodies of knowledge leading later to more specialised scientific knowledge. (1)

This involves again the linking of artistic creation with problem-solving techniques (although it is clear that some musicians are unhappy about this).

Bronowski (2) however, distinguishes among discovery, invention and creation by pointing out that Columbus discovered the West, Bell invented the telephone and Shakespeare created Othello. A fact is discovered, and a theory invented, but only a masterpiece is created - for creation must involve the whole mind.

Koestler's (3) definition of creativity also centres round the creative act, which for him is the bringing together of simultaneously activities occurring at several levels of the mind distant from one another. The mind is conceived as a pyramid in which habits or skills

at various levels and distances from one another can suddenly come into contact. The term 'bisociative' refers to the sudden integration of two dissimilar hierarchically ordered habits or skills in the pyramid.

So there are three groups of definitions of creativity available in terms of product, ability or process. They are interrelated in most writings but in all cases creativity is concerned with people not equipment or activities. Activities and equipment can only be said to be creative in so far as they help people display or develop their own creativity. It is clear from this discussion that creativity is an umbrella term that includes within it several different concepts which have common to them terms like imagination, fantasy, curiosity and originality. Elliott concludes:

Even the present confusion of the concept, once we have charted its contributory features, can be seen as a fair reflection of our human situation. If the concept yokes together real or apparent incompatibles, by doing so it presents us with problems which we have to face in any case in life. We have to decide concerning the relative values of the arts and sciences; we have to choose between or find a way of reconciling achievement in the recognised disciplines and the cure of the soul; how far to seek innovation; how far to be content with success in a stable convention. (1)

He stresses the importance of the individual teacher discovering what creativity (or creativeness) means for him and the degree of importance he attaches to it.

Mooney goes to great length to show that these three approaches and a freedom of examining the environment that facilitates creativity are at heart a unity, drawing a picture of a living being as having four essential conditions:

1. 'Out', 'his belonging to the universe as a whole' (the environment),
2. 'In', 'his being integrative of the whole' (the person),
3. 'Out and in and out and in again and again', 'his continual coming to be through give and take, incoming and outgoing' (the process),
4. 'Fit', 'his continued fitting of specific incomings and outgoings, his rendering potentialities actual in concrete sequential instances' (the product).

He follows this fourfold unity through into the works of artists, applying it in music to the elementary conditions: 1) harmony, 2) melody, 3) rhythm, the fitting of which makes, 4) a song.

Summary

Elliott sees two concepts of creativity - the traditional one and the more modern. The traditional is linked with the idea of the creation myth, of God creating something out of nothing with the traditional view of the artist's having God-given ability. (Some people see this as setting humans apart from animals.) The traditional view was modified by Nietzsche who places man in God's role. Creativity thus becomes self-realisation which is interpreted in various ways - as a form of therapy, as a working out of neuroses (Freud) as a solution to a inner sense to problem (Storr and Witkin), as part of the drive to self-duplication (Gutman), as a bringing about of an internal order (Laub-Novak), as a means of relating to the outer world (Dudek), as an expression of one's own personality (Maslow and Cottle). The modern concept of creativity came about

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through the linking of the trends in the Progressive Education Movement with society's need for inventors in the field of science and technology. Its characteristic is that creativity is the potential property of many people and that it consists in the having of novel ideas arising from a problem with no known solution or from a free play of fancy. Some writers see the traditional concept of creativity relating to artists and the modern to scientists and see dangers in trying to equate or confuse these two forms of creativity. They do, however, have in common features like imagination, fantasy, curiosity, discovery and originality. There has been much modern research into creativity - on the creative products, the creative process, the characteristics of people who produce creative products and environmental factors that favour creativity. Definitions of creativity centre on one of these. There is a problem in defining 'novel' products and a question mark over whether children can be original and whether artists really need to be original or can be just beautiful. Creative characteristics include amongst others divergent thinking abilities. There is a dispute about whether creativity is a general capacity or can only be applied to specific areas. A definition centred on the processes includes the idea of transforming reality in some way and may include problem-solving. Thus there are two concepts of creativity and three interlinked areas of definition.
CHAPTER TWO

THE PROCESSES OF CREATIVITY

Introduction

In this letter of Tchaikovsky we see him battling with the nature of the creative process:

You ask if, in composing this symphony I had a special programme in view. To such questions regarding my symphonic works I generally answer: nothing of the kind. In reality it is very difficult to answer the question. How interpret these vague feelings which pass through one during the composition of an instrumental work, without reference to any definite subject? It is a purely lyrical process. A kind of musical shriving of the soul, in which there is an encrustation of material which flows forth again in notes just as the typical poet pours himself out in verse. The difference consists in the fact that music possesses far richer means of expression and is a more subtle medium in which to translate the thousand shifting moments in the mood of a soul. (1)

There has been much research into how this process with which Tchaikovsky is grappling operates. Ribot (2) attempts to express this by distinguishing two types of imagination - sensorial which has its origins without, and affective which begins within and includes music. Other writers such as Poincaré and Henry James see it as a one flash experience at the moment of illumination.

Jung combines the two by seeing the person and the process as distinct:


Every creative person is a duality of contradictory attitudes. On the one side he is a human being with a personal life, while on the other side he is an impersonal creative process. (1)

Other descriptions of the process try to marry these two elements - the affective and the structural.

It does also seem important for creative people to understand something of their own creative process, a view expounded by Taylor. (2)

However, it must be said that there are some people who believe that the following description of the stages in a linear model is unsuccessful and that the process must be seen as a whole e.g. Sanford. (3)

(More will be said of this after the linear model has been discussed.)

The Linear Model

Carl Wallas (4) produced the first general description of the creative process. He took the German physicist, Helmholtz's writings as a basis. Helmholtz identified three stages:

a) a stage of laborious preparation or loading up of ideas during which he makes himself familiar with all the 'turns and complexities' of the problem that he can think of while away from his desk,

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b) a resting stage leading up to:
c) a condition of freshness in which the happy thought occurs. (1)

And this is Helmholtz's description at a banquet in 1891 of how his most important new thoughts came to him:

in all directions ... happy ideas come unexpectedly without effort, like an inspiration. So far as I am concerned, they have never come to me when my mind was fatigued, or when I was at my working table ... They come particularly readily during the slow ascent of wooded hills on a sunny day.

From this and from the mathematician on Poincaré, (2) Wallas identifies four stages - Preparation in which the problem is investigated fully in all directions; the second stage when he is not consciously thinking about the problem, which he calls Incubation; the third consisting of the appearance of the happy idea, which he calls Illumination. He added a fourth stage not included in Helmholtz but in Poincaré - Verification. But he continues:

In the daily stream of thought these four stages constantly overlap each other as we explore different problems.

Hutchinson (3) identifies four similar stages which he called the stages of preparation or orientation, the stage of frustration, the period or moment of insight, the stage of verification, elaboration or evaluation. The stages and their interrelatedness have been verified by experimental work in a variety of ways. These include interviews, introspective reports, questionnaires, observations of individuals

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in specially designed situations, analyses of work sheets, and general knowledge of and experience with creative individuals.

Patrick(1) (2) studying poets and non-poets, painters and non-painters and Eindhoven and Vinacke(3) suggested that the process is the same in people in professions generally regarded as requiring creativeness and in non-professionals, although there were differences in technique, speed and attack. Lowenfeld(4) too saw (see p. 68) creativeness as a faculty which, if developed in childhood, will transfer to any sphere and extolled the Russian idea of allowing a young child's creativity to develop freely before channelling it into political ends.

Mackinnon saw five stages:

1. A period of separation during which one acquires the skills and techniques and the elements of experience which make it possible for one to pose a problem to oneself.

2. A period of concentrated effort to solve the problem, which may be suddenly solved without delay or difficulty, but which perhaps more often involves so much frustration and tension and discomfort that out of sheer self-preservation one is led to,


3. A period of withdrawal from the problem, a psychological going out of the field, a period of renunciation of the problem or recession from it,

4. A period of in-sight accompanied by exhilaration, glow and elation of the "ah ah" experience. Later in the article he sees this as 'the meaning of serendipity, the finding of valuable or agreeable things not sought for'.

5. A period of verification, evaluation and elaboration of the insights which one has experienced. (1)

It can be seen that he has added a period of skill acquisition and the idea of a problem to the process and sees the incubation stage (his withdrawal) as an escape from the tensions it creates which are resolved in the insight.

Sparshott sets out five stages based on Robert Graves and T.S. Eliot:

First comes the original formulation of a problem or conceiving of a theme (preceded possibly by the poet finding himself excited, troubled or sensitised). Second comes a period of random search not directed by the will, unconscious incubation, and so on. Third comes the flash of insight, a relief from the suspense or tension, a sense of how things will go together. Fourth comes the deliberate elaboration of this insight; and fifth is the criticism and refinement of the elaborated solution. (2)

Here elaboration and verification are divided. However, it must be added that Sparshott cast considerable doubt as to the accuracy of this view of the creative process, putting forward Collingwood's account of artistic expression: (3)


Here there is no determinate in first stage, no known structured message to be encoded. There is only an encoding that is at the same time of deciphering. The creative process is a passage from unclarity to clarity, the imparting of structures to inchoate feeling. But this is seen not as a passage from beginning to end, as though the clarification were brought about by the successive application of even finer filters, but as the arrival of an absolute beginning. So there is and there is not a process: there is, because the artist has progressed from unclarity to clarity, and what he has clarified is in an unexplained sense the 'same feeling' that he began with, but there is not, because the end has the status of an absolute beginning in the light of which earlier stages are of no account, sublated, aufgehoben, or something. And what is transmitted from artist to public is supposed to be in a code or to admit of decoding because the artist's encoding was also a deciphering and all paths of transmission are magically bi-passed. This is strange stuff indeed, but the strangeness may be demanded by the nature of the case. Attempts to apply information theory to art seem to fail just because they see no need for such oddness. They simply take it for granted that a work of art is the encoded version of the pre-existing message that the artist wishes to transmit. (1)

This view is included here for completeness. Less simple ways of viewing the process are dealt with after looking at the stages in detail. Sparshott sees the whole process as a 'giving birth to beauty' - the triggering experience being insemination, the initial formulation being conception, the incubation period being gestation, the moment of intuition being the moment of birth and the phases of elaboration and criticism being the yielding of nature to nurture and the infant grasp of movement and speech and social skills. He sees our adoption of this model as much religious as evidential, giving art the status of the birth of a new being and sees its roots in the 18th century notion of a genius who is less of a fabricator than the place where an autonomous and natural evolution takes place. (This links with the divine myth definition of creativity in Chapter One.)

(1) Sparshott, op.cit.
Rossman broke down the process in a study of over 700 productive inventors into seven stages (and they are very similar to those outlined by Osborn). (1)

1. Observation of a need or difficulty,
2. Analysis of the need,
3. Survey of all available information,
4. Formulation of objective solutions,
5. Critical analysis of the solutions for their advantages and disadvantages,
6. The birth of the new idea - the invention,
7. Experimentation to test out the most promising solution, and the selection and perfection of the final embodiment by some or all of the previous steps. (2)

The list is very similar to Wallas but for the reference to incubation in the Wallas list. However, reading Rossman more fully shows that there is an incubation period with intermittent recurrence of the idea during it, as will be noted by Patrick later in a more detailed look at this period.

Guilford (3) infers from this type of analysis that the process of problem-solving and creative production are similar. Indeed, Vinacke defines a 'creative situation' as one in which realistic thinking and


imagination are combined. It:

resembles a problem situation as soon as
the effort commences to achieve the final
product or to convert the feelings, images,
plots etc. into a tangible medium. (1)

He goes on to see the instigating factor as a personal need for self
expression or self-realisation, the creation being governed more by
autistic factors than realistic demands and the goal being not the
solution to a problem but the satisfaction of the internal needs of
the creator. The creator, however, differs from the dreamer in that
he:

must be guided by the nature of the medium
with which he is dealing, by the demands
inherent in relating one part to another,
and by the tangible organisation of the final
externalised product.

Dewey writes that a complete act of thought has five more or
less logical stages:

a) a felt difficulty,
b) its location and definition,
c) the suggestion of a possible solution,
d) the development by reasoning of the
suggestion,
e) further observation and experiment leading
to acceptance and rejection. (2)

But he has been misused by some authorities for he is not describing
a lengthy creative process but rather logical steps in thinking. He
therefore omits the need to rest before illumination and the time order

(1) Vinacke, E.W., Creative Thinking, in Vinacke, E.W., The Psychology

of the different stages. All of his steps may occur in one stage of the process, as in preparation. In that stage one may get an idea, follow it up, or reject it.

Stein prefers a three-fold division of the process into:

1. Hypothesis formation,
2. Hypothesis testing,
3. Communication of the results. (1)

**Motivation**

Rossman (2) lists a number of suggested motives: the Gestalt view as a desire to complete a configuration viewed as incomplete; needs arising from the subconscious; self-expression; necessity; the instinct of workmanship; the behaviourist view of stimulus and response; chance; imitation (the correspondence of man-made things with things in nature); the inventive faculty which he divides into reproductive (memory), constructive (invention of symbols or words) and creative (governed by emotions, desires).

Kris (3) saw it in psychoanalytical terms, that the artist was trying to solve a personal problem. This clearly links with Freud. It is refined by Witkin (4) who sees the driving force as a sensate problem. It links with Hutchinson (5) who distinguishes the systematic

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thinking and 'creative insight' which are extreme ends of a scale with the varying factor being 'the degree of psychic frustration'.

Greenacre takes issue with the attitudes that the artist's product is a result of the narcissism of the artist and sees the artist as carrying on 'a collective love-affair' with the world and the art products as having:

the character of the love gift to be brought as near perfection as possible and to be presented with pride in his giving.\(^{(1)}\)

Gowan\(^{(2)}\) lists among others that it is the function of the child's oedipal response to the affectional approach of the opposite sexed theory so that boys who were close to their mothers and girls who were close to their fathers will become more creative than others. (Such a theory also explains why there appear to be more creative men than women.)

Ribot\(^{(3)}\) sees the origin of the creative process in man's needs, appetites, tendencies, desires including those for individual preservation (resulting in food getting, housing etc.), individual and social expression (resulting in military, commercial, industrial inventions and in its disinterested form, aesthetic creation), sexual fulfillment (with effects on art and everyday life), and the need of knowing and explaining leading to myths, religion, philosophical systems, hypothesis. He concludes:

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Every want, tendency or desire may, then, become creative, by itself or associated with others, and into these final elements it is that analysis must resolve "creative spontaneity". This vague expression corresponds to a sum, not to a special property. Every invention, then, has a motor origin: the ultimate base of the constructive imagination is motor.

He goes on to include one more element:

But needs and desires by themselves cannot create - they are only a stimulus and a spring. Whence arises the need of the second condition - the spontaneous arrival of images.

This may be what writers call inspiration.

Other drives have already been suggested in the section on definitions. Maslow (1) and Rogers (2) favour the drive for self-actualisation. Sinnott sees in it:

a searching ...... for something still inchoate, unformed, which is seeking, so to speak, to reach expression. (3)

Stein writes of a:

state of disequilibrium - one might say homeostasis is disturbed or that there is a lack of closure, or, from a hedonistic point of view, that the individual experiences a lack of satisfaction with the existing state of affairs ...... The creative person has a lower threshold, a greater sensitivity for the gaps or the lack of closure that exists in the environment. The sensitivity to these gaps in any one case may stem largely from forces in the environment or from forces in the individual. (4)


Taylor\(^{(1)}\) says that capacity to be puzzled is an important characteristic of a creative person. The ability 'to know when you don't know' may be a crucial ability.

Ghiselin also sees the creative person as working from a sense of dissatisfaction with the established order to the attainment of a new one:

> The creative process is the process of change, of development, of evolution, in the organisation of subjective life. \(^{(2)}\)

The creative person works 'from the unrealised towards realisation', a process that involves the will in the preparation and revision stage and the unconscious in between (but the unconscious processes 'are induced and focused by intense conscious effort'). The completion of the work is evaluated by determining whether 'it will serve to organise experience in a fresh and full and useful way'.

Elsewhere he rejects the view that creativity is an expression of a neurosis:

> Creation is not the exploitation of any fixation, hidden or overt. It is always to some extent an assault on fixation. \(^{(3)}\)

Patrick\(^{(4)}\) starts with the idea of a want and shows how in the

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\(^{(4)}\) Patrick, C., How Creative Thought is Related to Thinking, American Psychologist, IV, 1949, p. 266.
preparation stage ideas related to past experience and the problem occur but do not fulfil the want; even the original idea in its original form fails to meet the want and is superceded by irrelevant ones; but the pre-solution idea as it recurs is modified in different mental sets and finally recurs in a form to terminate the unfulfilled want; illumination occurs and the solution is reached, which is then revised to compare with accepted standards involving processes of perception and judgement.

Indeed when it comes to the problem of motivation writers are almost equally divided between those who see the starting point of the creative drive as some sort of problem - in the case of the arts an emotional or 'sensate' problem - and those who maintain that a certain level of security is necessary before taking the risk of creative work and therefore the problem must have been worked through before the creative process can even start. For example, Tumin sees a certain degree of 'status-assurance' as necessary for creative life, which he calls a 'self-consummating experience' as opposed to 'instrumental actions' which are primarily orientated towards end results. He writes:

For those individuals - the rare few-who break through to individuality and creativity without status assurance, the creative life serves as a compensation for, the equilibration, if you wish, of the imbalance presented in the status-life. Most individuals, however, cannot and will not dare take the challenge of the creative life until they reach a considerable amount of status-safety and assurance. (1)

Wertheimer adopts a problem-solving model and identifies two kinds of links between the beginning of the thought process and the solution of the problem. In one the links arise from the forces in the structure

of the objective situation and personal interests play no role or only a minor one. In the other the individual's personal needs are the source of the problem, but even here one must gain access to the objective structural requirements and the problem may remain unsolved if one focuses only on his own needs. The person does need to have certain characteristics:

An attitude is implied on his part, a willingness to face problems straight, a readiness to follow them up courageously and sincerely, a desire for improvement, in contrast with arbitrary, wilful or slavish attitudes.  

He identifies various types of problem-solving situations - one which is in a chain of events, one which leads only to the realisation that all that exists is not 'in good order' and a third (in some instances of artistic creation) where the goal to be achieved comes first and the individual may proceed 'from above as he tries to concretise it in all its parts' or attempt to get the central idea clearer or get the parts more clearly in focus; but even in these he sees the critical elements being 'determined by the nature of the inner structural requirements'. He illustrates it from Galileo's discovery of the law of inertia and Einstein's thinking that led to the theory of relativity.

Inspiration

But it is not entirely clear where inspiration fits into the scheme, although it has been mentioned earlier. It is a dilemma that Stephen Spender puts succinctly:

    Inspiration is the beginning of a poem and it is also its final goal. It is the first idea

which drops into the poet's mind and it is
the final idea which he at last achieves
in words. In between this start and this
winning post, there is the hard race, the
sweat and toil. (1)

Writers sometimes take the initial idea from without, sometimes
within. Lowell (2) writes:

Sometimes the external stimulus which has
produced the poem is known or can be traced.
It may be a slight sound, a thought or an
emotion. Sometimes the conscious has no
records of the initial impulse, which has
either been forgotten or springs from deep,
unrealised memory. But whatever it is,
emotion, apprehended or hidden, is a part of
it for only emotion can rouse the subconscious
into action.

Jenny Fowler gives a composer's account of inspiration and its
role in the creative process:

So, in the beginning there is an idea, a plan:
partly map, partly seed. It has to be flexible
enough to allow things to happen. As one makes
progress into the piece, so one constantly returns
to the beginning to allow that first page to carry
the right implications. Through writing the piece,
one modifies the original plan, so for a long time
there is constant interaction between the plan-in-
advance and the piece as it actually emerges.

I suppose the necessity for this interaction
arises because one starts with an idea for some
suitable ground rules, and also an idea of the piece
as a whole. The final reconciliation between these
two things requires an "elegant solution" (to borrow
the language of mathematics). I find that the
"solution" needs to be forged anew for each new piece,
and this means that even a piece of modest scope seems
to generate a seemingly disproportionate amount of
effort, and also that it is very difficult to tell in
advance how long the creation of the piece will take. (3)

(3) Fowler, J., My Own Ears, NMA4, Victorian Ministry for the Arts,
1985, pp. 3 - 6.
Stages in the Process: Preparation

This leads to an examination of the stages the creative process.

The linear model will be examined first. The first stage of Wallas includes the first three of Rossman's, the first two of Mackinnon's and is part of Stein's first stage.

Wallas sees this stage as including:

the whole process of intellectual education ...... the whole traditional one of logic, the mathematical forms which are the logic of the modern experimental sciences and the methods of systematic and continuous examination of present and recorded phenomena which are the basis of .... "observational" sciences as well as the "problem attitude" or habit of setting the mind a clear question (1).

Taylor (2) takes Wallas's description but calls the preparation stage 'exposure' and stresses the need to absorb life experiences without conscious awareness of how useful they might be and without a need to categorise each experience. This is particularly relevant to later discussions on how to prepare children for creativity and create a bank of sound experiences upon which to draw in later life. (It explains Mackinnon's division of this phase into two.) It is clearly these experiences on which Mozart is drawing in this passage from his letters:

When I am as it were completely myself, entirely alone and of good cheer - say, travelling in a carriage, or walking after a good meal, or during the night when I cannot sleep; it is on such occasions that my ideas flow best. Whence and how they come, I know not; nor can I force them. Those pleasures that please me I retain in memory, and am accustomed, as have been told, to hum them to myself. If I continue in this way, it soon

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occurs to me how I may turn this or that morsel to account, so as to make a good dish of it, that is to say agreeably to the rules of counterpoint, to the peculiarities of the various instruments etc. (1)

It is interesting to note how even at this stage there is a combination of inspiration and experience of compositional skills.

Stephen Spender describes his preparation in an account of the creation of a poem:

The method which I adopt, therefore, is to write down as many ideas as possible, in however rough a form, in notebooks (I have at least twenty of these on a shelf beside my desk, going back over fifteen years). I then make use of some of the sketches and discard others. (2)

Aaron Copland writes:

Every composer begins with a musical idea a musical idea, you understand, not a mental, literary or extramusical idea ... The idea itself may come in various forms. It may come as a melody or or as a melody with accompaniment or, on the other hand, the theme may take the form of a purely rhythmic idea. Now the composer has the idea. He has a number of them in his book, and he examines them in more or less the way that you, the listener would examine them if you looked at them. He wants to know what he has. Every composer keeps in mind the possible metamorphoses of his succession of notes. First he tries to find its essential nature, and then he tries to find what might be done with it - how that essential nature may momentarily be changed. (3)


And again Roger Sessions:

The process of execution is first of all that of listening inwardly to the music as it shapes itself: of allowing the music to grow, of following both inspiration and conception wherever they may lead. A phrase, a motif, a rhythm, even a chord may contain within itself, in the composer's imagination, the energy which produces movement. It will lead the composer on, through the force of its own momentum or tension, to other phrases, other motifs, other chords. (1)

Seashore describes this as 'auditory imagery' (the capacity to hear music in recall). This is fed by imagery through the other senses: 'visual' 'tactile' and especially 'motor'. He adds:

It is clear that the mental image and particularly the auditory and motor images, operate in music in the following three ways: 1) in the hearing of music; 2) in the recall of music; and 3) in the creation of music. (2)

Jenny Fowler writes of this:

I have been using the word "vision". It is strange that our language doesn't have a word for aural imaginings. All the words: "revelation", "insight", even "imagination" itself, stem from the visual sense. Only "inspiration" is different, and comes from breathing. Is there a linguist who could tell me of any language has an equivalent word based on sound? Why do we lack a word?

Talking of vision and inspiration sounds a little old-fashioned. But those words can, of course, cover anything which stimulates a new direction of thought, including reaction against the idea of composition as "self-expression".


Even so, we need a word. Wanted a word to convey both the vivid, direct experience of music in the mind, and the sense of excitement and discovery. As in "insight", what about "insound"?(1)

It can be seen how in these statements this stage involves both an initial idea and the retrieval of information from the memory - but retrieved in such a way as to make new connections or in a new form. (However, it must be added that Piaget agrees with Erikson that there are two possible interpretations of memory - one that consists of considering memories as stocked or accumulated in the unconscious where evocation would remove them at will and a second which admits that every operation of the memory includes a reorganisation. Piaget favours the second of these and this would make every moment of recall a creative act of a kind.)

In the case of Stephen Spender's poem the idea came from the environment-a scene observed. All the musicians quoted refer to an original musical idea but other composers have taken extramusical ones. In conversation with a composer it transpired that an idea for a piece had come from a many-branching plant which gave her the idea for the overall plan of the piece, for example.

The Incubation Phase

Some writers leap over the next of Wallas's stages largely because it is not amenable to scientific experiment. Wallas describes it as largely an unconscious process or partly conscious and how during it nothing should be allowed to interfere with these processes which he

describes as 'unconscious and involuntary (or foreconscious and fore-voluntary). Voluntary abstaining from conscious thought may take two forms - conscious mental work or relaxation from conscious work. The first is time-saving and he says that it is often possible to get more results by beginning several problems in succession, and voluntarily having them unfinished while we turn to others, than by finishing our work on each problem at one sitting. It may require physical exercise and he calls industrious passive reading a dangerous substitute.

In many descriptions of it there is an element of confusion, madness, dreaming. Hutchinson\(^1\) sees sometimes the appearance of mild psychoneurotic symptoms as the creator strives to realise his goals which will help restore his balance. Because of these he sees relaxation as being essential, either planned or enforced. Tchaikovsky writes:

> Generally speaking the germ of a future composition comes suddenly and unexpectedly. If the soil is ready - that is to say, if the disposition for work is there - it takes root, with extraordinary force and rapidity, shoots up through the earth, puts forth branches, leaves, and, finally, blossoms. I cannot define the creative process in any other way than by this simile. The great difficulty is that a germ must appear at a favourable moment, the rest goes by itself. It would be vain to try and put into words the immeasurable sense of bliss which comes over me directly a new idea awakens in me and begins to assume a definite form. I forget everything and behave like a madman. Everything within me starts pulsing and quivering; hardly have I begun the sketch ere one thought follows another. In the midst of this magic process it frequently happens that some external interruption wakens me from my sonnambulistic state; a ring at the bell, the entrance of a servant, the striking of the clock, reminding me that it is time to leave off. Dreadful, indeed are such interruptions. Sometimes they break the thread of inspiration for a considerable time; so that I have to seek it again-often in vain.\(^2\)


Mozart writes similarly:

All this fires my soul, and, provided I am not disturbed, my subject enlarges itself, becomes methodised and defined, and the whole, though it be less, stands almost complete and finished in my mind, so that I can survey it, like a fine picture or a beautiful statue, at a glance. Nor do I hear in my imagination the parts successively but I hear them as it were all at once (gleich alles zusammen). What a delight this is I cannot tell. All this inventing, this producing, takes place in a pleasing, lively dream. (1)

There is general agreement that conscious effort alone cannot produce creative achievements but authors use different terms to describe the nonconscious factors. Wallas (2) in line with those like Ghiselin (3) who are not psychologists and psychoanalysts uses the terms unconscious, involuntary and fringe-consciousness, which does not seem to have the same meaning for them as it does for the psychoanalysts. Hadamard (4) terms them sub-conscious which he defines as being one of the superficial layers of the unconscious. Psychoanalysts like Kris (5) and Kubie (6) prefer preconscious. There are others e.g. Dashiell (7) and Woodworth (8)

who do not use or question the use of these terms and relate the phenomena of the creative process to experimental psychology's research into the phenomena of successful recall.

The automatic involuntary quality has been experienced by many creative people - Spencer, Nietzsche, Gauss, Poincaré, Henry James and others. Poincaré(1) struggled for days with the problem of functions to no avail. One night, unable to sleep, he says that the ideas came in crowds, colliding, sometimes interlocking and finally making some stable combinations from which he discovered the existence of Fuchsian functions. Shortly afterwards on a geological excursion with no thought of mathematics in his head, a profound insight came to him that the transformations he had used were identical with those of non-Euclidean geometry. Schiller describes this phase thus:

The reason for your complaint lies, it seems to me, in the constraint which your intellect imposes upon your imagination. Here I will make an observation and illustrate it by an allegory .... Apparently it is not good and it hinders the creative work of the mind - if the intellect examines too closely the ideas already pouring in, as it were at the gates. Regarded in isolation, an idea might be quite insignificant and venturesome in the extreme, but it may acquire importance from an idea which follows it; perhaps in certain colloca-
tions with other ideas, which may seem equally absurd, it may be capable of furnishing a serviceable link. The intellect cannot judge all these ideas unless it can retain them until it has considered them in connection with the other ideas. In the case of a creative mind, it seems to me, the intellect has withdrawn its watchers from the gates, and the ideas rush in pell-mell and only then does it review and inspect the multitude. You worthy critics or whatever you may call yourselves, are ashamed or afraid of the momentary passing madness which is found in all real creators; the longer or

shorter duration of which distinguishes the thinking artist from the dreamer. Hence your complaints of unfruitfulness, for you reject too soon and discriminate too severely. (1)

(This is a point taken up by Osborn (2) in which he outlines the principle of deferred judgement, saying that quantity of ideas breeds quality in both individual and group creation.) In these descriptions the boundaries that block the inner personal region from consciousness are permeated and the artist goes deep into a subjective experience. Stein writes that:

his permeability may be self-induced by a process that the psychoanalysts call "regression in service of the ego" (Hartmann 1958), by selecting specific working environments, by taking oranges, drinking liquors or it may occur when the person is distracted or devoting himself to activities other than those that are specifically relevant to his creative work. (3)

He illustrates this with Schiller keeping rotten apples in his desk, Milton, Descartes, Leibniz and Rossini lying stretched out and Mozart finding it easier to work after exercise.

The artist perhaps goes deeper into other areas of consciousness than the scientist at this stage. Zervos writes of Picasso:

His only wish has been desperately to be himself, in fact he acts according to suggestions which come to him from beyond his own limits. He sees descending upon him a superior order of exigencies; he has a very clear impression that something compels him imperiously to

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empty his spirit of all that he has only just discovered, even before he has been able to control it, so that he can admit other suggestions. Hence his torturing doubts. But this anguish is not a misfortune for Picasso. It is just this that enables him to break down all his barriers, having the field of the possible free to him, and opening up to him the perspectives of the unknown. (1)

In this as in many other accounts the feelings are so strong that it is accompanied by the impression that some outside agent has whispered productive ideas to them, like Socrates' 'demon'. Koestler sees the resolution in terms of 'underground games':

The period of incubation represents a reculer pour mieux sauter. Just as in the dream the codes of logical reasoning are suspended, so 'thinking aside' is a temporary liberation from the tyranny of over-precise verbal concepts of the axioms and prejudices ingrained in the very texture of specialised ways of thought. It allows the mind to discard the straitjacket of habit, to shrug off apparent contradictions, to unlearn and forget and to acquire, in exchange, a greater fluidity, versatility and gullibility. (2)

Maslow sees it as a return to what he calls primary processes (as opposed to the secondary processes of reason and logic) - coming out of the deeper self-creativity, being:

a kind of intellectual play which is a kind of permission to be ourselves to fantasy, to let loose, and to be crazy, privately. (3)

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He sees it as necessary for this to be a voluntary act made possible by not being afraid of the unconscious. (It must also be added that Helmholtz (1) saw no work, either subconscious or unconscious going on in the resting interval and speaks of the recovery from fatigue of the preparatory labour and of the freshness of attack upon the problem.)

Tchaikovsky writes vividly of the experience:

If that condition of mind and soul which we call inspiration lasted long without intermission no artist could survive it. The strings would break and the instrument be shattered into fragments. (2)

This highlights a distinction Patrick makes when she says:

the chief difference between the incubation of the mathematician and the poet is that for the first it is more an intellectual experience, for the latter an emotionally toned experience. There is a difference of content in that the mathematician incubates an idea, while the poet generally incubates a mood. (3)

Sayers sees it as a kind of childbirth:

The resistance to creation which the writer encounters in his creature is sufficiently evident, both to himself and to others - particularly to those others who have the misfortune to live with him during the period when his Energy is engaged on a job of work. The human maker is, indeed, almost excessively vocal about the perplexities and agonies of creation and intractability of his material. Almost equally evident, however, though perhaps less readily explained or described, is the creature's violent

urge to be created. To the outsider, the spectacle of a writer "taken ill with an idea" usually presents itself as a subject for seemly mirth; the "Spring poet" is the perennial butt of the plain man, just as, on the stage, any reference to child-birth is a signal for hoots of merriment, especially from the male members of the audience. In both cases, the ridicule is largely defensive— the nervous protest of the negative and chaotic against the mysterious and terrible energy of the creative. (1)

Stein makes a similar point:

The number and variety of hypotheses that the creative individual entertains may give one the impression that the process is haphazard or disorganised. As one studies the hypotheses, however, one discovers common threads. One also finds that the creative individual, orientated towards the future, himself senses a feeling of direction and possesses some conception of the characteristics of the final product he is seeking. The hypotheses do not come forth in a logical and systematic fashion. Logic and systematisation occur late. (2)

He cites Einstein:

Before the discovery that the crucial point, the solution lay in the concept of time, more particularly in that of simultaneity, axioms played no role in the thought process— of this Einstein is sure. But, even afterwards, the final five weeks, it was not the axioms that came first. "No really productive man thinks in such a paper fashion", said Einstein. But he adds later: "During all the years there was a feeling of direction, of going straight toward something concrete. It is, of course, very hard to express that feeling in words; but it was decidedly the case, and clearly to be distinguished from later consideration about the


rational form of the solution. Of course, behind such a direction there is always something logical; but I have it in a kind of survey, in a way visually. (Wertheimer 1945).

Stein goes on to describe the feeling of depression, anxiety and inadequacy that may accompany this stage due to momentary lack of direction and the relaxation of inner-personal regions, allowing old tensions to rise to the surface.

Patrick summarises certain characteristics common to this phase:

In the first place, no active work is done on the idea and mood that is incubated. The subject thinks of other topics. In the second place, the idea or mood that is incubated recurs spontaneously; in the third place, the idea or mood is more clearly defined at the end of the stage than it was at the beginning, for it has modified.(1)

Woodworth doubts the existence of unconscious work, claiming that the process is more one of forgetting:

In the preparatory period the necessary cues have been assembled along with much irrelevant material which is an interference as long as it possesses recency value. When this recency value has evaporated with the lapse of time, and when the individual makes a fresh attack, the whole matter is clear. This theory is at least as probable as the theory of subconscious work(2).

This view contrasts with other writers and is linked with Helmholtz's view of this time as one of resting.

Other writers see the importance of different mental sets in the development of the idea. Ruger on puzzle-solving states:

the general assumption which the subjects make concerning the nature of the special problem in hand will often be set off accidentally and become thoroughly entrenched without being subjected to criticism .... The assumptions thus uncritically set up in some cases limited the movements made by the subject to a certain portion of the puzzle, and consequently in some instances rendered the solution impossible .... These fixed assumptions, which have an inertia about them, were broken up in several ways .... In some cases the puzzle was solved almost immediately in coming back to them later in the day. The particular set of consciousness had been broken up by this change and new points of view were now possible.\(^{(1)}\)

This links with Koestler and his idea of bisociation and is further substantiated by Platt and Baker\(^{(2)}\).

Wallas sees a linking stage between the incubation phase and the flash of illumination. This he terms 'intimation':

> when our fringe consciousness of an association train is in a state of rising consciousness which indicates that the fully conscious flash of success is coming.\(^{(3)}\)

This he claims is the moment when the process is again coming under the control of the will:

> If this feeling of intimation lasts for an appreciable time, and is either sufficiently conscious, or can by effort of attention be made sufficiently conscious, it is obvious that our will can be brought directly to bear on it. We can at least attempt to

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inhibit, or prolong, or divert, the brain-
activity which intimation shows to be going
on .... We can attempt to hold on to such
a train on the chance that it may succeed.

He discusses the danger of putting thought into words too soon and the
inappropriateness on occasions of the intervention of the will.

It is indeed at the stage of Illumination with
its fringe of Intimation that the thinker should
most consciously realise that the rules of his
art will be of little effect unless they are
applied with artistic delicacy or apprehension.

He elaborates on the role of emotion in Intimation:

It is easier to retain an affect indirectly
by concentrating attention on the sensation
which may be stimulated by it than by
attending directly to the affect itself the
association of an affect with an image being
particularly helpful. Precise language may
inhibit thought whereas language with emotional
associations may lead to new and vivid thoughts.
The feeling of the universal significance of some
clearly realised sensory image is an Intimation ....
so important in poetry that sensitiveness to it
almost constitutes the special poetic gift.

The Illumination

The incubation period has been likened to a gestation period leading
to child-birth in the subsequent illumination and its burst of creativity.
The birth of an idea in a work of creation is often accompanied by
alternating states of pain and joy. The successful completion of the
act of creation is experienced on the satisfaction of being free from
a heavy burden. Mozart completes his description:

Still the actual heaving of the tout ensemble
is after all the best. What has been thus
produced I do not easily forget, and this is
perhaps the best gift I have my Divine Maker
to thank for. (1)

Hindemith confirms this:

What is musical vision? We all know the impression of a very heavy flash of lightning at night. Within a second's time we see a broad landscape, not only in general outline but with every detail .... compositions must be conceived the same way. If we cannot, in the flash of a single moment, see a composition in its absolute entirety with every pertinent detail in its proper place, we are not genuine creators.(1)

Koestler describes the intuitive leap of illumination:

The moment of truth, the sudden emergence of a new insight is an act of intuition. Such intuitions give the appearance of miraculous flashes or short circuits of reasoning. In fact they may be likened to an immersed chain, of which only the beginning and the end are visible above the surface of consciousness. The diver vanishes at one end of the chain and comes up at the other end, guided by invisible links. (2)

He describes the process as one of combining two different sets of rules, living on two different planes, and bisociation or the moment of illumination as the bisociative click,(3)

Loane illustrates this well in a musical composition by 12/13 year olds:

All this said, however, the new techniques did not come out of the blue, nor were they entirely unprepared. Each is in some way an extension of a technique already familiar, or perhaps the result of putting together of two

previously learned but previously separate ideas. Thus the flute player already had the performance skill of adjusting intonation by adjusting barrel position. In describing the composition of 'Midnight Delirium', she recalled having been reminded to adjust her intonation in this way, during a wind band rehearsal. And she had the composition skill of employing an unexpected note to increase tension. We might say that she has put the two together by a leap of understanding that she could use her barrel-twisting technique to make a note unexpected in a new way - sliding flat. She thus creates something new (at least to her) by putting together two things which had previously been apart, a process perhaps close to Koestler's notion of 'bisociation'.

Ribot (2) emphasizes how the creative act involves the totality the individual, the condition of his body, his emotions, his perception and his conscious as well as unconscious mental processes, willing and dreams. Koestler emphasizes this point:

Habit and originality, then point in opposite directions in the two way traffic between conscious and unconscious processes. The condensation of training into habit, and the automisation of skills constitute the downward stream, while the upward traffic consists in the minor, vitalising pulses from the underground, and the rare major surges of creation.

Thurstone (4) suggests that it is the manner of insight that sets creative work apart from ordinary problem-solving. He describes how it usually occurs in a state of relaxed and dispersed attention and advocates research into which kinds of mental work are best done under conditions of tension and concentration and which under conditions of relaxation. Elsewhere he says that the:

(4) Thurstone, L., Creative Talent, Reports from the Psychometric Laboratory, No.61, Chicago, University of Chicago Press, 1950, p. 10.
creative act is characterised by the manner of insight which is often preceded by non-verbalised prefocal thinking. (1)

He advocates research into what happens before the moment of insight, believing that the rapport the creative individual has with his preconscious thinking can be studied experimentally.

Sinnott sees the unconscious as operating in a similar way to the conscious in its rearranging and organisation of the facts and final solutions to problems:

Thus the unconscious mind is able to solve problems and to lay at least the foundation for the construction of a poem or work of art. These are new creations. They might have been produced by the conscious mind and often have been, through sheer force of mental labour; but the reason that such a frontal attack often fails seems to be that free association, present in the unconscious, is blocked in various ways and the really creative new relationships therefore are not seen.

One must recognise the operation in the unconscious of such an organising factor, for chance alone is not creative just as the organism pulls together random, formless stuff into the patterned system of structure and function in the body, so the unconscious mind seems to select and arrange and correlate these ideas and images into a pattern. The resemblance between the two processes is close. The concept is worth considering that the organising power of life, manifest in mind as well as body - for the two are hardly separable - is the truly creative element. Creativity thus becomes an attribute of life. (2)

All this discussion, however, Chiselin sees as futile, describing it as a picturesque substitute for an avowal of ignorance. (3)

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Guilford\(^{(1)}\) writes in this stage of illumination of the role of fluency (which involves the recall of various possibilities from the memory), flexibility (the ability to roam widely over a very broad class of possibilities, elaboration, redefinition) and insight. All have been described in the descriptions given above.

Youtz\(^{(2)}\) confirms some of these by experiments into how past experience can inhibit the subject in his efforts by restricting his choice. He mentions two allied phenomena—mechanisation or rigidity, 'the continued use of a method which was previously successful but which is no longer the most efficient or effective', and 'functional fixedness', the inability to see a tool in a new use. Experiments showed that both of these were increased by stress or frustration and that confirmed Osborn's contention that the judicial process should be reserved until after the tentative solutions have been achieved, since unsatisfactory results will be discouraging and this stress may inhibit any further progress in thinking up new ideas. Praise also reduced rigidity, as it reduced stress. Both were also decreased by a allowing more time. He also shows how the introduction of a mild threat of the type 'you aren't concentrating, I'm afraid', 'You can do better than this' or 'Can't you do it a little faster?' affected the performance especially the time taken to do a task. Both Youtz's areas of investigation clearly have implications for the way in which creativity is nurtured in education. He also adds that it is a whole idea

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rather than a partial one that is more likely to occur in both the incubation and preparation stages and that details are added and changed during revision. (This is clearly seen in the writings of Mozart.) Dashiell\(^{(1)}\) reinforces Sinnott's point that the processes involved in incubation suggest that 'rational processes' can go on without awareness. He describes the moment of illumination as containing the successful recall of material in which the poet or novelist is already saturated. This, he says, is dependent on the absence of interfering associations set up by excessive concentration on the recall. In this he is supported by Sinnott\(^{(2)}\), who makes the point about these flashes of inspiration that they rarely come unless an individual has immersed himself in a subject. He must have a rich background of knowledge and experience. (Indeed Wallas makes this part of his first stage.)

However, Youtz sees the final solution being more than mere experience:

> When the solution of a problem is broken into its component parts and each given as a separate experience, such experiences are not sufficient to bring about the solution of the problem. Thus a selected presentation of the experience is not enough. The parts must be combined in a certain way and a "direction" seems to be a factor which aids the combination. "Trial and error" may be present in attempts at the solution, but is inadequate to explain the sudden appearance of the successful solution, when such a solution requires productive rather than reproductive experience.\(^{(3)}\)

\(^{(1)}\) Op. cit.


Verification

Wallas's stage four, Rossman's stage seven, Stein's stage two and MacKinnon's stage five involves the working out of the idea.

Wallas writes:

It is normally, as Poincaré points out, fully conscious and men have worked out much the same series of mathematical and logical ruling for controlling verification by conscious effort as those which are used in the control of preparation. (1)

Of this stage Kaplan writes:

Fantasy becomes art only when it is externalised and controlled by the responsible, realistic, and logical ego .... imagination must submit its work to the scrutiny of critical faculties. The artistry lies in the care and judgement with which the critical task is performed, as much as in the richness of the creative materials available for criticism. Without both, the work is either as formless and unintelligible as the so-called 'art' of the insane, or as mechanical and superficial as the formulas of the skilful hack. (2)

Stein also adds that during this stage the artist has to consider also the role of the audience. He quotes from Freud about the failure of some groups of people to express their novel ideas in a way acceptable to others:

The hysterical is undoubtedly a poet, though he represents his phantasies essentially by mimicry, without considering whether other people understand or not. The ceremonials and prohibitions of obsessional patients force us to conclude that they have created


(2) Kaplan, A., Freud and Modern Philosophy (1957), quoted in Stein, M., Creativity as an Intrapersonal and Inter-personal Process, op. cit.
a private religion for themselves; and even the delusions of the paranoiac show an unwelcome external similarity and inner relationship to the systems of our philosophers. We cannot get away from the impression that patients are making in an asocial manner, the same attempts at a solution of their conflicts and an appeasement of their urgent desires which, when carried out in a manner acceptable to a large number of persons, are called poetry, religion and philosophy. (1)

Born postulates the existence of a 'culture conscience' which operates upon the initial impulse on the unconscious. It is similar to the psycho-analytic concept of super-ego but differs in that it includes the artistic heritage of the past. He sees it as having four functions:

1. Neutralisation, which refers to the catholicity of the sublimated concept,
2. Universalisation, freeing it from subjective expression,
3. Manifestation, its conversion into a visual image,
4. Organisation, the arrangement of visual images according to aesthetic standards. (2)

He sees this as the conscious part of the process of creation which he sees as encompassing both the conscious and unconscious process, the unconscious providing the inspiration and the basic principles of design, while the conscious provides formative processes. This seems to relate to my later analysis of children's compositions in Part Two. The first appearance of expressive quality in children's work

(1) Freud, S., The Basic Writings of Sigmund Freud (1931), quoted in Stein, M., Creativity as an Intrapersonal and Interpersonal Process, op.cit.

is in the attempt to express themselves. Later in what I have found in the growth of the imitative phase a greater ability to be governed by the needs of musical forms and structures emerges. This could be seen as the emerging of the culture conscience which includes a grasp of the vernacular of musical language. (This grasp precedes and is a necessary pre-requisite of the growth of the imaginative phase.) Thus the period of musical growth dealt with in this thesis is the period of the building up of this 'culture conscience' which is to be so important in later life in the evaluation stage. (It is also of relevance to the section on musical skills in Chapter Three.)

Tchaikovsky writes of the verification phase:

Yesterday when I wrote to you about my methods of composing I did not sufficiently enter into that phase of work which relates to the working out of the sketch. This phase is of primary importance. What has been set down in a moment of ardour must now be critically examined, improved, extended or condensed, as the form requires. Sometimes one must do oneself violence, must sternly and pitilessly take part against oneself, before one can mercilessly erase things thought out with love and enthusiasm. I cannot complain of poverty of imagination, or lack of inventive power; but, on the other hand, I have always suffered from my want of skill in the management of form. Only after strenuous labour have I at last succeeded in making the form of my compositions correspond, more or less, with their contents. Formerly I was careless and did not give sufficient attention to the critical overhauling of my sketches. Consequently my seams showed and there was no organic union between my individual episodes. This was a very serious defect, and I only improved gradually as time went on; but the form of my works will never be exemplary, because, although I can modify, I cannot radically alter the essential qualities of my musical temperament. (1)

Here is the artist working at the embodiment of his feelings into form by constant interaction with his medium.

Hindemith writes of this stage:

Not only will he (the composer) have the gift of seeing.... the complete musical form .... he will have the energy, persistence and skill to bring this envisioned form into existence, so that even after months of work not one of its details will be lost or fail to fit into his photo-mental picture. This does not mean that any F Sharp in the 612th measure of the final piece would have been determined in the very first flash of cognition. If the seer should in his first flash concentrate his attention on a particular detail of the whole, he would never conceive the totality, but if the concept of this totality strikes his mind like lightning the F Sharp and all the other thousands of notes and other means of expression fall into line almost without his knowing it. (1)

He goes on to describe the importance of this vision and how skill, although important in its working out, is no replacement for it.

Jenny Fowler writes of the tension between the original idea and the working out:

To be too general is not useful : what is interesting is the detail, and the specific applications of a general idea. Yet one really needs the reference of a score, or the memory of a well-known work, to talk about details. Again, I don't find it interesting to write about, or read of, the "blueprint" of a piece - the composer's solution to the problem of arriving at a flexible map on which to base the piece. What is important is the detail derived from the map. The most important thing is to consider all the choices made by the composer, and ask why he made that choice and not another. And the second most important thing is to ask "does it work?" (2)


Dewey describes the process:

As the painter places pigment on the canvas, or imagines it placed there, his ideas and feelings are also ordered. As the writer composes in his medium of words what he wants to say, his idea takes on for himself perceptible form .... the physical process develops imagination, while imagination is conceived in terms of the concrete material.\(^1\)

Sayers writes of the relation between medium and creator:

None of this delight will, however, be gained unless the playwright is devoured with a real love for material form-unless, in the writing of the play, his Energy has imaginatively moved upon the stage in the way I have tried to explain, and conceived its idea in material terms of flesh and blood and paint and canvas. For the true freedom of the Energy consists in its willing submission to the limitations of its own medium. The attempt to achieve freedom from the medium ends inevitably in loss of freedom within the medium, since, here as everywhere, activity falls under the judgement of the law of its own nature.\(^2\)

She cites drama that is really literature as an example and concludes:

The business of the creator is not escape from his material medium or to bully it, but to serve it; but to serve it he must love it. If he does so, he will realise that its service is perfect freedom. This is true, not only of all literary art but of all creative art.

Ross writes of the working out stage:

We should conceive of that process \(\overline{}\) by which feeling becomes form\(\overline{}\) as involving interaction between impulse and medium. Gradually a form emerges from such interaction that resolves the feeling impulse, and which may be used to reach it. Each subject-reflexive action in the medium would, hopefully refine the representational form until the maker felt either that he had achieved a satisfactorily reciprocal of the impulse, or that, for one reason or another, no further refinement were possible and the action should be stopped.\(^3\)

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Evaluation

At this point comes Dewey's final stage 'judgement of the
selected solution; part of Wallas's stage four and Mackinnon's
stage five. It would seem also that part of the evaluative
procedure might include an assessment of the communication. Stein writes:

In the course of communicating his ideas the
creative person needs to abstract or eliminate
certain aspects of his work which are completely
of himself. [This relates to the Tchaikovsky
quotation] In the final stages of communication
the individual must, as Mead would say, bear in
mind the others with whom he is communicating.
The extent to which this occurs varies with the
area of work. Thus, it is more prevalent in
science than in art. But in either case there
is a process of evaluation in which completely
autistic factors, or the difficulties that were
experienced in the arriving at a solution are
eliminated. (1)

The result is often that the perceivers think it 'simple' and wonder
why they never thought of it.

Patrick summarises the whole process very clearly:

This experiment in artists reveals four stages
of creative thought, namely preparation,
incubation, illumination and verification.
Preparation is the period when associations
are shifting rapidly and the subject is
receiving new ideas. Incubation is the
spontaneous occurrence from time to time of
a mood or idea with more or less modification,
while the subject is thinking of other topics.
It may range from a few minutes to several
years. We find that it occurs in miniature
within the experimental period [which ranged
from 15-20 minutes], and on a broader scale
in the regular work of artists. [The fact
that it can occur on a small scale is inter-
esting in the light of how we ask children to
compose] Illumination occurs when the mood
or idea, which has been incubating, is sketched

(1) Stein, M., Creativity and Culture, in Mooney and Razik (eds.),
Explorations in Creativity, New York, Harper and Row, 1967,
p. 114.
for the first time. An emotional reaction is frequently present, although not necessarily, and parts of the picture often seem to come automatically and spontaneously. Verification or revision is the last stage. These stages may overlap with each other, as incubation may occur with preparation and revision may start before all the objects have been sketched. (1)

But as she indicates evaluation occurs throughout the process.

Indeed there is some debate about whether the process does have general characteristics or 'stages'; but even if the 'stage' model is held, there is a belief that the stages are not discrete but overlap and interact within another. Indeed evaluation only seems to go into abeyance during the incubation phase when it appears detrimental to the free flow of ideas, e.g. Osborn's principle of deferred judgement. (2) Indeed in Rossman's stages the odd-numbered ones all involve evaluation. His list of steps resembles the TOTE pattern proposed by Miller, Galanter and Pribram (3) where the letters stand for test, operate, test and then exit from the pattern. So Rossman's steps would become TOTOTOTE.

Indeed Vinacke, although he adopts Wallas's model, writes:

It is necessary to conceive of creative thinking in terms of dynamic, interplaying activities, rather than more or less discrete stages. The phases may be repeated and their order of appearance not fixed. Hence ...... it appears that they are inter-weaving activities occurring

(1) Patrick, C., Creative Thought in Artists, op. cit.
in highly individualised and varied patterns, A particular creative situation is but one temporary period in which all four processes are drawn together in relation to a particular object of creation. (1)

Gough disputes Wallas's theory saying that:

the very orderliness and symmetricality of this formulation which on first reading seems so attractive is what constitutes its inherent weakness. Imaginative thinking seems in truth to be much more characterised by disarray, complexity, ferment and turmoil. Processes overlap, ebb and flow, and intermix to an extent scarcely compatible with notions of fixed stages and sequences. (2)

After much discussion Briskman describes the creator as:

a) critically interacting with prior products, with a tradition, so as to put himself 'in touch' with the problem and standards for acceptable solutions; b) generating blindly, but not randomly, a hopefully potential solution or fragments of such a solution — blindly, because these are generated without fore-knowledge of success; not randomly, because the generation is itself already under the plastic control of relevant problem, background of prior products, and relevant standards;
c) critically interacting with this initial product so as to select or reject it, either in part or in its entirety, such a selection procedure being again under the plastic control of the problem, the background, and the relevant standard; d) generating blindly, but not randomly, further hopefully potential solutions or fragments, this time under the plastic control of not only the initial problem, the background, and the relevant standards but also under the plastic control of what he has already done, of his initial effort; e) repeat c) (critical selection); f) repeat d) (i.e. blind, but not random, generation etc.) .... until, hopefully one has managed to generate


or assemble a product which either meets the initial job specification or else meets some improved job specification - this improved job specification being in itself the outcome of the above process. (1)

He emphasizes that the control exercised by the problem, relevant standards and the background of prior products must not be too rigid or the solution will be blocked. He sees the experience of frustration causing the creator to loosen his control but adding:

in other words the plasticity of the control is crucial to the possibility of creativity, but so is the control itself.

Stein almost takes the process further than the other descriptions by stressing the necessity of a feedback from a group of people:

By accepting the product and regarding it as creative the group indicates that it accepts and implicitly approves of the needs which initially motivated the creative person to deviate from the accepted patterns and to probe the unknown. In the process of accepting the creative product the group manifests similarity and identification between its own wishes and those of the creative individual (Lee 1950; Sachs 1951) and that it has, in a sense, joined the individual in the creative process and become co-creator (Kris 1952). For the group the creative product has fulfilled or given expression to certain needs. The creative product "says" things that the group has wanted to say but has been unable to. (2)

He recommends more research into the part played by intermediaries such as members of scientific and professional organisations, art and drama critics, curators of museums, literary agents and so on.

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(2) Stein, M., Creativity as an Intra-personal and Inter-personal Process, op. cit.
Vinacke also sees criticism by others as part of the verification process but sees it only as genuine extension when two requirements are met: firstly:

when the critic knows something about the general field of which the object is an exemplar and secondly when he has made the effort to familiarise himself with the specific object under consideration. (1)

Anderson outlines three sources of evaluation:

1. External evaluation which is expanded by Lasswell (2) in which he discusses society's role in the perception of novelty and referred to Stein's definition that a novel work must be tenable or useful or satisfying by a significant group at some point in time. All sorts of questions are raised about how many people, which people and so on.

2. Internal locus of evaluation. Rogers says:

Perhaps the most fundamental condition of creativity is that the source of locus of evaluative judgement is internal. The value of his product is, for the creative person, established not by the praise or criticism of others, but by himself .... This does not mean that he is oblivious to, or unwilling to be aware of, the judgement of others. It is simply that the basis of this valuation lies within himself, in his own organismic reaction to and appraisal of his product. If to the person it has the "feel" of being "me in action", of being an actualisation of the potentialities in him-


self which heretofore have not existed and are now emerging into existence, then it is satisfying and creative, and no outside evaluation can contain that fundamental fact. (1)

Many other writers like Maslow and May share his view.

3. Mutual dyadic or participating evaluation:

a process of participation, of two way communication, mutuality, inter-weaving of desires, goals, purposes, through spontaneous, meaningful change in interacting with others.

This is seen in the socially - integrative behaviour put forward by Anderson. (2) It encompasses both preceding views. Much literature on creative psycho-therapy emphasizes this view.

This model of a process constantly involving evaluation is confirmed by Newell, Shaw and Simon who sees inherent in the problem-solving process, processes they call "solution generating" and a second class called 'verifying processes'. They examine actual examples of successful problem-solving programmes to see just what is involved in these and how the programmes reduce the problems to a manageable size. They do this partly by the use of computer programmes and claim that at present their methodology is more important than their findings. They claim that the programmes:

perform work that is considered difficult, and even mildly creative, when it is done by humans. Although these programmes fall considerably short of the highest levels of


creativity of which humans are capable, there is every reason to suppose that they are qualitatively of the same genus as those more complex human problem-solving processes. We have predicted that within ten years the computer will discover and prove important mathematical theorems, and compose music that is regarded as aesthetically significant.\(1\)

Laub-Novak writes:

In speaking to and reading the works of creative writers, scientists, theologians and artists I find marked similarities in the way creative people proceed. To take an idea, an image and the force all the detail into a preconceived order is to make the work rigid. One would fail then to respond to inner contradictions, suggestions, new lines of thought, images, colour, form ... Each act, each decision on how to proceed must be perceived clearly-evaluated and re-evaluated. Our perception needs to be open, flexible. Not set upon one solution but able to perceive multiple solutions to the problem. Finally we transcend our conscious acts. Then a truly creative act emerges .... Art involves the whole person, not just a fraction of our consciousness. Creation is an act; an action that calls upon all our awareness, all our talents, our concentration our patience, our discipline. It is not a fraction of our life. It applies to our every activity, every choice, decision, perception. We too often live our lives, half alive; we may learn to relive our lives with accuracy, excellence, fidelity, intensity ...... intensity in the small the ordinary. Intensity in creative knowing and acting ...... Creative work demands a ritual of time, of serious work, of quiet hours. Order and discipline are not nasty words. They can release the best in us. We can't live without order and discipline. The question is where to find order. Mere imitation is a disaster in art, in teaching and in child care. For each person some traditions are fruitful, some not. The perception to sort out exterior forms and bring them into connections with our

own interior life, traditions, values, rhythms and talents is to live an artful life. It is no easy task .... To be in touch with one's own imagination, instincts and private vision while still in elementary school is really to get the elementary, the basic, the most important things right.(1)

Other Models

Because of problems of the interaction of the various stages in the process, some writers find it better to abandon the model of stages in the process. Eindhoven and Vinacke in their observation of 13 artists and 14 non-artists did not find any evidence of the stages, claiming that the artists tended to evolve the final product, experimenting at first and gradually concentrating on certain features that are selected, modified, and reorganised. They conclude that the stages blend together throughout the work:

Thus creativity might be thought of as one whole process consisting of all the various aspects participating concurrently.(2)

They also claim that artists have more control over their processes than non-artists and that from their training they:

appear to acquire a pattern of dealing with creative situations which differs from that of non-artists.


Merwin backs this view when he writes:

Invention is imagination; it is the very opposite of reasoning or inference; it is a single act of mind; rather an instant operation than a process. It has no stages; the essence of it is that it dispenses with them. (1)

Indeed it could be said that a number of different approaches to the problem of creative thinking have been condensed into the foregoing analysis. This has been done to show that there are similarities between them. It is, perhaps, also necessary to draw a few distinctions as well. Traditionally there were two approaches to the problem of creative thinking. One is the logical which concerned propositions made up of general concepts on the basis of which assertions were made and inferences drawn. Syllogisms were certain combinations of propositions that were new. To this method was added the procedure of induction with its emphasis on experience and experimentation. Wertheimer points out the problems in this approach:

If one tries to describe processes of genuine thinking in terms of formal traditional logic, the result is often unsatisfactory: one has, then, a series of correct operations, but the sense of the process and what was vital, forceful, creative in it seems somehow to have evaporated in the formulations. (2)

(Although as has been seen logical thinking may be part of the evaluative stage).


Associationism sees thinking as a chain of ideas, of stimuli and responses, of behaviour elements. Pillsbury writes:

His [the thinker's] attitude is very much like that which we may assume the animal to have as he works by trial and error. It is just as little controlled. It is, in fact, a trial and error process different from the other in that the trials are made in imagination, not in real movements ...... to find a way of obviating the difficulty. This is always by a series of trial and error processes, by a number of suggestions suggested by association. (1)

It is difficult in this approach which concentrates on habit and past experience, repetition rather than reason, to see how new ideas are generated.

Wertheimer formulates that thinking proceeds by structuring Gestalten. There is a problem situation $S_1$ in which the process starts and after a number of steps there is a second situation $S_2$ in which is solved:

When one grasps a problem situation, its structural features and requirements set up certain strains, stresses, tensions in the thinker. What happens in real thinking is that these strains and stresses are followed up, yield vectors in the direction of improvement of the situation, and change it accordingly. $S_2$ is a state of affairs that is held together by inner forces as a good structure in which there is harmony in the mutual requirements and in which the parts are determined by the structure of the whole, as the whole by the parts.

The process does not involve merely the given parts and their transformations. It works in conjunction with material that is structurally relevant but is selected from past experience, from previous knowledge and orientation.

(1) Pillsbury, Recent Naturalistic Theories of Reasoning, quoted in Wertheimer, M. Productive Thinking, op.cit. p. 10.
In all this, such movements, steps are strongly preferred which change the state of affairs in $S_1$, along a structurally consistent line in $S_2$ (1).

This is clearly applicable to situations with a clearly defined problem $S_1$ but in some situations $S_1$ is not clear (indeed the first achievement is realising that there is a problem) and in others the individual begins with $S_2$ that is to be created. He suggests:

The process starts, as in some creative processes in art and music, by envisaging some features in a $S_2$ that is to be created. The artist is driven towards its crystallisation, concretisation, or full realisation. Characteristically the more or less clearly conceived structural whole-qualities of the thing to be created— are determining the process. A composer does not usually put notes together in order to get some melody; he envisages the character of the melody in statu nascendi and proceeds from above as he tries to concretise the parts. (Similarly with a mathematician who envisages the idea of a formula or of an equation.) For some composers it is not an easy process, often it takes a long time. When ideas about the goal are somewhat vague, colloidal, there may be two directions at work simultaneously—one working to get the initial idea clearer, another to get at the parts. Characteristically in such cases what would and would not fit is immediately clear; whereas what happens in instances of the type $S_1 \ldots S_2$, is structurally determined by the nature of $S_1$, or of $S_1$ in relation to $S_2$, here it is determined by the structural features in the envisaged $S_2$, even though $S_2$ is still incomplete, still vague. This somewhat changes the dynamic nature of the outline given above, but in sensible procedures the vectors are again determined by the nature of the inner structural requirements. (1)

This seems less satisfactory than the situation in which $S_1$ is clearly defined for there is no suggested source for the imagined $S_2$ or the drive to its realisation.

Psychoanalytic literature yields a further approach. In it the motivation is closely bound up in the process. Freud\(^1\) parallels the conflict in the genesis of neurosis and the genesis of creativity, the material being founded in the experiences of childhood and there being a connection between creative imagination, day dreaming and childhood play. He stresses the role of unconscious and pre-conscious processes in 'achievements of special perfection.'

Getzels and Jackson summarise his findings:

1. Creativity has its genesis in conflict, and the unconscious forces motivating the creative "solution" are parallel to the unconscious forces motivating the neurotic "solution";

2. The psychic function and effect of creative behaviour is the discharge of pent-up emotion resulting from conflict until a tolerable level is reached;

3. Creative thought derives from the elaboration of the "freely rising" fantasies and ideas relating to day-dreaming and childhood play;

4. The creative person accepts these "freely rising" ideas, the non-creative person suppresses them;

5. It is when the unconscious processes become, so to speak, ego-syntonic that we have the occasion for "achievements of special perfection;"

6. The role of childhood experience in creative production is emphasized, creative behaviour being seen as "a continuation and substitute for the play of childhood." \(^2\)

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\(^2\) Getzels and Jackson, Creativity and Intelligence, New York, Wiley, 1962, pp. 91 - 2.
His views have undergone much development, notably by Kris who shifts interest from id to ego processes and emphasizes preconscious rather than unconscious processes. The preconscious is defined as what is:

capable of becoming conscious easily and under conditions which frequently arise, different from the unconscious processes in the case of which such a transformation is difficult, can only come about with considerable expenditure of energy or may never occur. (1)

Rapaport describes his position:

...... any type of productive processes, from wit to art, and many other phenomena of inventiveness can be fully explained only if we assume that the ego regulates its own capacity to regression, that its organising functions include the functions of voluntarily and temporarily withdrawing cathexis from one area to the other, in order later to regain improved control. (2)

Kris(3) describes two phases in the creative act: 'inspiration' which is characterised by regression to primary processes and 'elaboration' characterised by purposeful organisation and intent to solve a problem.


Later psychoanalytic literature goes further and denies the role of the unconscious and even sees it as injurious. Kubie distinguishes 'preconscious', 'conscious' and 'unconscious'. Preconscious processes have:

- the highest degree of freedom in allegory and figurative imagination which is attainable by any psychological process. The contribution of preconscious processes to creativity depends upon their freedom in gathering, assembling, composing and reshuffling of ideas. (1)

He argues that conscious and unconscious processes rigidify the preconscious ones.

Other motivating factors have also been suggested. Linked with the psychoanalytic approach, one gives a central role to the individual's destructive impulse and his capacity to make restitution through art. Fairbairn claims that destructive phantasies are accompanied by restitution phantasies that alleviate the guilt and anxiety engendered by the former. Since the destructive urges are the chief source of inner tension and some artistic activity relieves this tension and is creative, it is suggested that:

- the principle of restitution is the generating principle of art. Art relieves the tension between impulses and ego and tension between ego and superego. (2)

Lee sets out the thesis that:

- the various esthetic states of the mind occur in particular kinds of personalities in order to relieve acute psychological

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emergencies due to the activation of destructive rage which is not being efficiently repressed; and that quantitative differences in emotional tensions arising from guilt over destructive rage determine in the same person a) whether defense occurs by making or by appreciating and b) the variety of making and appreciating. (1)

He goes on to distinguish modes of appreciating art and three types of artistic products distinguished in terms of their relationship to the maker's esthetic states of mind:

Making a: the mostly unconscious and compulsive making of a work of art by the creative artist, as the final step in his self healing of a neurotic depression. It follows upon Appreciation D (the contemplative mode of appreciating) and inspiration.

Making b: the mostly unconscious, compulsive, and transitory creativeness resulting in an artistic product, which compared with making a is of relatively superficial esthetic significance. It is called forth by less extensive needs for defense with an esthetic orientation. The product often contains considerable elements of unconscious plagiarism.

Making c: the consciously directed making of an artistic product, technically well done, but of superficial esthetic significance, as answer to the need for defense by making something with an exquisite antithetical sense of order and cleanliness ....

The author rejects the sublimation theory of artistic experience in favour of:

The unconsciously compelled need to achieve an esthetic synthesis among the institutions of the mind, and between it and the outside

world when ordinary integration is disturbed by destructive rage ....

Jung brings in the concept of the collective unconscious:

While the personal unconscious is made up essentially of contents which have at one time been conscious but which have disappeared from consciousness through having been forgotten or repressed, the contents of the collective unconscious have never been in consciousness, but owe their existence exclusively to heredity. Whereas the personal unconscious consists for the most part of complexes, the content of the collective unconscious is made up entirely of archetypes.\(^{(1)}\)

McLaughlin, commenting on this, adds:

His main interest was the way in which the contents of the collective unconscious often too unpleasant to be allowed naked into our consciousness, are clothed in the trapping of myth and folklore: in this form they are the province of poetry and other literature, and much of plastic art. The approach of music to this repository of instinct is to recall the shapes and patterns, almost the diagrams, of the archetypes, and to bring them into consciousness in this form.\(^{(2)}\)

This use of archetypal forms will be linked later with the growth of the vernacular in creative development.

Adler\(^{(3)}\) discusses feelings of inferiority as a motive. Rank suggests the desire to immortalise oneself. The artist recreates himself into:

an ideologically constructed ego; this ego is then in a position to shift the creative

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will power from his own person to ideological representations of that person and then render it objective. (1)

He says that after production, neurotic collapse may follow because of exhaustion or a sense of guilt from the power of creative masterfulness as something arrogant. White suggests:

the existence of a fundamental urge towards competence, as fundamental as the urge to procreate. (2)

(This links with later discussion of children's mastery play.) There is also much writing on music and the Oedipal phase in development.

Schachtel takes issue with Freud and the post-Freudians. He sees creativity as the ability to remain perceptually open to the world. He sees two basic perceptual modes, different ways of communication between object and subject. One is subject-centred or 'autocentric,' the other 'allocentric' or object-centred. In the first the stress is on sensory pleasure and in the second on what the object is like. He defines creativity as the:

art of seeing the familiar fully in its inexhaustible being, without using it autocentrically for purposes of remaining embedded in it and reassured by it. It is the existential struggle between the two tendencies in man: to remain open toward the world, capable of allocentric perception, or to seek the security of secondary embeddedness in a closed world and in the shared autocentricity of familiar perspective. (3)


In creativity the first tendency conquers the second. (He says, of course, that there is a developmental movement from childhood autocentricity to adult allocentricity, although he allows for secondary autocentricity in adulthood as well.) He sees this as no easy victory for it means perceiving differently from people we know. He postulates a totally different motivation from the psychoanalytic one:

The main motivation at the roots of creative experience is man's need to relate to the world around him ....... This need is apparent in the young child's interest in all the objects around him, and his ever renewed explorations of and play with them. It is equally apparent in the artist's life-long effort to grasp and render something which he has envisaged in his encounter with the world, in the scientist's wonder about the nature of the object with which he is concerned, and in the interest in the objects around him of every person who has not succumbed to stagnation in a closed autocentric or socio-centric world. They all have in common the fact that they do not remain in a closed, familiar, labelled world but that they want to go beyond embeddedness in the familiar and the routine, and to relate to another object, or to the same one more fully, or from another angle, anew, afresh ....... (1)

The essential difference from the psychoanalytic school is that whereas they regard creativity as a 'drive discharge function' he conceives it as openness in the encounter with the world. Theirs is tension-reducing, his is tension-increasing.

These last two groups - the psychoanalysts and Schachtel and other writers such as Allport(2) and May(3) basically seem to disagree about


motivation but as neither group has really defined creativity it also seems that they may not be describing the same type of behaviour. The reductionist authors of the psychoanalytic school most often discuss painting and writing whereas the self-actualising group seem to describe a much more global style of interactions with one's environment which could lead to products that would be judged as creative. Fromm\(^1\) makes this distinction clearly between the creativity of the artist, conditioned by talent, genius, study, practice and by certain economic and social conditions that allow the person to develop his talent, and the second meaning of creativity which is an 'attitude' which is the condition of any creation in the former sense but which can exist even though nothing new is created in the world of things. It is more difficult as concepts such as sublimation and self actualisation are not easily measurable or definable. Goldan\(^2\) proposed a hypothetical construct - the creativity motive - through which he attempted to express the view that creative products are only one segment of creative behaviour which becomes manifest when individuals interact with their environment so as to experience their fullest perceptual, cognitive and expressive potentials.

**Everyday Experience and Creativity**

Dewey sees experience as an:

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interpenetration of self and the world of objects and events .... Because experience is the fulfillment of an organism in its struggles and achievements in a world of things, it is art in germ. Even in its rudimentary forms, it contains the promise of that delightful perception which is esthetic experience .... In experience there is a process of doing and undergoing between self and object. /Art/ unites the very same relation of doing and undergoing, outgoing and incoming energy, that makes an experience to be an experience ...... /Life contains a rhythm of loss of integration with environment and recovery of union.\(^1\)

Equilibrium is achieved out of tension and the artist cultivates his tension.

Maslow also links the process with everyday life and in distinguishing the stages in the creative process, says that many of us have the creative flash but are unable to realise it because of the hard work and discipline and training involved in the next phase.

Now the virtues that go with the secondary kind of creativeness which results in actual products, in the great paintings, the great novels, in the bridges, the new inventions and so on, rest heavily upon other virtues - stubbornness and patience and hard work and so on, as they do on the creativeness of the personality. Therefore, in order to keep the fields of operation clean, you might say, it seems necessary for me to focus upon improvising, on this first flash and, for the moment, not to worry what becomes of it, recognising that many of them do get lost. Partly for this reason, among the best subjects to study for this inspirational phase of creativeness are young children whose inventiveness very frequently cannot be defined in terms of product. When a little boy discovers the decimal system for himself, this can be a high moment of inspiration, and a high creative moment, and should not be waved aside because of some a priori definition which says that

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creativeness ought to be socially useful, or it ought to be novel, or nobody should have thought of it before etc. (1)

It would seem from this passage that young children therefore often enter only stage one of the creative process, lacking the knowledge or experience to pass through later stages. To refer back to Sinnott's (2) quotation on p. 39 the young child or inexperienced adult enters the image forming stage which as such an important part of all mental life from childhood to old age but does not have the experience to enter in to the constructive processes of creative imagination, for, as Sinnott ends: These are potentially creative, though often not actually so.

Hindemith writes:

When we talk about Einfälle we usually mean little motifs, consisting of a few tones - tones not often even felt as tones but felt merely as a vague curve of sound. They are common to all people, professionals and laymen alike: but while in the layman's mind they die away unused in their earliest infancy, as before, the creative musician knows how to catch them and subject them to further treatment. I know a scientist who said: "Everybody can have - and has - scientific ideas, but it takes a scientist to know what to do with them" ...... It is exciting to know how primitive, commonplace, colourless, and insignificant, the first ideas, of even extraordinary musical masters are. But it seems almost more exciting to recognise the specific talents with which those masters keep their ideas fresh and despite all mutations, basically intact, during a sometimes considerably long interval of time required for treatment of


these ideas. In this they are led by tradition, by the presumptive conditions of performance of the future piece, by its purpose and style, by personal whims and fancies that may add certain flavours to the final form. Sometimes the composer may derive his musical material, on its way from the Einfäll to its completion in a piece through a tremendous barrier of frustrations which may suppress most of the aforesaid considerations and lead even with the very first attempts at treating the basic material to formulations of utter strangeness. (1)

This quotation summarises much of what has been said of the creative process, showing how the inexperienced stops short of the first stage.

Sparshott confirms this when he says:

What poets most evidently have in common is not a mysterious contact with secret springs, and certainly not any shared mental process but simply a steady application to the actual writing of poetry. Anybody can be a poet who really wants to be, though wanting will not make him a good one. What the lay-man does not do, and probably could not do, is bring himself to attend steadily, day by day, and year after year, to the business of the art. (2)

Harris(3) sees the difference between genius and ordinary human beings in the speed in which they are able to go through the early stages of the process from realising the need for an idea to gathering information, to thinking through the information, to imaging possible solutions.

Rossman sees a variety of factors:

The inventor is a child of circumstance. A great many people who have the ability to invent have never been in the environment to stimulate their peculiar mental abilities. Others of mediocre talent have simply been able to appreciate the practical importance of more or less accidental discoveries. However, most of us for one reason or other, are potential inventors, and if we fail to invent, we only fail because we lack interest or incentive, or our vocation denies us the opportunity for analysis and original thought. It may be that we are sceptical of our ability to contribute and of the value of our contribution. (1)

Stein writes:

For some persons the creative process may stop during the stage of hypothesis formation. They develop too few hypotheses because of intellectual or emotional reasons; or, in the process, they become sidetracked by considering a specific intellectual matter that is not relevant to the demands of the moment; or they come upon a previously unresolved emotional difficulty that forces its attention upon them. (2)

( Maybe in line with Witkin's analysis they should then go forward and resolve it. )

However, Kubie makes this distinction between creative and less creative people:

Common to most earlier writings on the topic and obscuring and beclouding their formulations, is a confusion between unconscious and preconscious functions. Thus when Sachs speaks of "toying with the unconscious" he is dealing really with preconscious


(2) Stein, M.A., Creativity and Culture, op. cit.
functions as these are warped by the pressure of unconscious processes. If out of this transaction any creativity survives, this is due primarily and preponderently to pre-conscious and not unconscious processes.

Similar examples could be drawn from most of the early literature on this topic; I believe that it would become closer to the truth, or at least to the thesis which I am presenting here, to say that the creative person is one who, in some manner, which today is still accidental, has retained his capacity to use his preconscious functions more freely than is true of others who may potentially be equally gifted. (1)

Dewey writes that what most of us lack to be artists is not emotion or skill but the:

capacity to work a vague idea and emotion over into terms of some definite medium. (2)

This has echoes in Ribot. (3) He sees the constructive imagination as reducible to three forms - sketched, a vague outline imagination which is primarily appearing first in dreaming and further set up in revery and then 'in castles in Spain', fancies of love, ambition, power and finally in plans for the future; fixed, which comprises mythic and aesthetic creations, philosophical and scientific hypotheses, a form projected outwards, made into something else; and objectified, comprising successful, practical inventions whether mechanical, industrial, commercial, military, social or political. It may be that less gifted people stop short early in the sketched form.


However, Patrick found that poets and non-poets exhibited the four stages of creative thought and the differences appear to be that:

poets put more imagination and meaning in their poem and are more dominated by the conventions of modern poetry. (1)

The Problem-Solving Model and Artistic Creation

There is much writing on the strengths and weaknesses of the use of the problem-solving model for artistic creation. Indeed Ghiselin writes, starting from Poincaré's description of the creative process:

This sequence of labour, quiescence, illumination, and further labour has turned out to be common to the experience of creative workers of all sorts. (2)

Ruch (3) also sees creative imagination as similar to problem-solving and autistic thinking in that it uses symbols that have acquired meaning through learning. It differs from the other two in the degree of control. Creative imagination is less incisive than problem-solving that is directed by voluntary attitude and more controlled than autistic thinking.

Vinacke asserts that:

with respect to personality there is no reason to suppose that artists, as artists, are different to non artists. (3)

(1) Patrick, C., Creative Thought in Poets, op.cit.


But he claims that the artist may have more practice and more training and thus make more use of perceptual and emotional response. Training also gives him the knowledge of media and methods of work. So the scientist differs only in patterns of training and skill and the idea that he thinks in a special way is not borne out by the evidence.

Hirsch distinguishes the generic types of genius, artistic and scientific. The combination of intelligence and instinct and the unconscious is what they share. They differ in that in artistic genius:

'the intuition', the inspirational idea, the erupting gleam first flashes, followed by critical intellectual work of improving, revising, adding, subtracting. In scientific genius, the intellectual work comes first, the collection of material, its ordering and analysis and correlation or lack of correlation with other material. Then comes the illumination, the radial glow that translates an incongruence of hypotheses and a multiplicity of facts into a harmonious unified system of portraying an order of law. (1)

(He adds that both artistic and scientific geniuses are born from the marriage of unequals; in the former case, the influence of the mother parent - instincts and the unconscious - predominates; in scientific genius, the father parent, objective in intelligence, contributes a greater heritage. In neither case is there a true marriage which is a union of unlikes but equals,) So it can be seen that in his view the difference between artistic and scientific creativity may be in the order of the stages of the creative process and in the background of the creator.

Bartlett distinguishes between thinking within closed systems, 'adventurous' thinking which breaks out of the closed system 'everyday' thinking and artist's thinking. He sees both scientific and artistic thinking starting from factual evidence but sees artistic thinking as having items laid out in a sequence with an internal gap or stopping short at a terminus or demanding reorganisation. The tasks of interpolation, extrapolation and reinterpretation follow these inadequacies in the sequence. He sees the 'preparation' stage as all that precedes the artist's awareness of the gap he is trying to fill. He sees the artist then following steps of two sorts - one of craftsmanship and one related to impulses and feeling worked out. As he proceeds in the early stages every step opens up new possibilities and later a critical stage is reached after which each stage 'achieves a partial issue which presents itself as the one that is most satisfying, but never as the only possible one.' The completion still leaves open questions although it is understandable to those who accept the artist's standards. So this is view akin to Witkin's 'sensate problem' except that he does not see the solution as a complete resolution.

Hutchinson makes a similar distinction when he differentiates between 'systematic thinking' and 'creative insight'. In the first, the objective, the problem and the method are clearly defined and the process methodical and slow, the problem being well within the capabilities of the thinker and little frustration being felt consciously.


'The first stages are like the last - constructive, developing, but also critical, reasoned, cautious.' Systematic thinking occurs where the number of variables and hypotheses to be verified is not too large. He does see, however, systematic thought and 'creative insight' being extremes of a scale which varies in the degree of 'psychic frustration' experienced.

Plummeridge refutes the idea of applying the problem-solving model to artistic creation and argues that such an attempt is to confuse the two concepts of creativity described in Chapter One. He writes:

Applied to music this might well take the form of asking children how many types of sound they can make on an instrument and then incorporate these sounds into a composition. We might say that finding the sounds is one problem and that the combining of the sounds constitutes a second problem. This would, I feel, be mistaken. One could accept the first operation as problem-solving but the second is a matter of working in a particular rule-governed manner. There is a sense, of course, in which it is 'problematic' - there are many ways in which it could be accomplished - but it is essentially an aesthetic procedure. The child is 'expressing' the 'problem' through the medium of the instrument's sounds and the 'solution' to the problem is embodied in these sounds which form the 'composition'. The two operations are very different and serve to show the inappropriateness of problem-solving as an explanation of artistic achievement. (1)

He goes on to cite a possible view of the 48 as a solution to the problem of mean-tone versus equal temperament, of Haydn's Le Matin as a solution to having two outstanding violin and cello players.

Sayers sees a problem in this approach too:

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To the average man, life presents itself not as material malleable to his hand, but as a series of problems of extreme difficulty, which he has to solve with the means at his disposal. And he is distressed to find that the more means he can dispose of—such as machine-power, rapid transport, and general civilised amenities, the more his problems grow in hardness and complexity. This is particularly disconcerting to him, because he has been frequently told that the increase of scientific knowledge would give him "the mastery over nature"—which ought, surely, to imply mastery over life.

Perhaps the first thing that he can learn from the artist is that the only way of "mastering" one's material is to abandon the whole conception of mastery and to co-operate with it in love: whosoever will be a lord of life, let him be its servant...

The second thing is, that the words "problem" and "solution" as commonly used, belong to the analytic approach to phenomena, and not to the creative. Though it has become a commonplace of platform rhetoric that we can only "solve our problems" by dealing with them "in a creative way", those phrases betray, either that the speaker has repeated a popular cliché without bothering to think what it means, or that he is quite ignorant of the nature of creativeness.

From our brief study of the human maker's way of creation, it should be fairly clear that the creator does not set out from a set of data, and proceed, like a crossword solver or a student of elementary algebra, to deduce from them a result which shall be final, predictable, complete and the only one possible. The concept of "problem and solution" is as meaningless, applied to the act of creation, as it is when applied to the act of procreation......

Again, there is no strictly mathematical or detective-story sense in which it can be said that the works of a poet are the "solution of the age in which he lived"; indeed, it is seldom at all clear which of these two factors is the result of the other. Much breath and ink are continually expended in the effort to find out, under the impression that this also is a "problem" awaiting of a final, predictable, complete and sole
possible "solution". The most one can say is that between a poet and his age there is an intimate connection of mutual influence, highly complex and various, and working in all directions of time and space.

She elaborates on how the common man in times of crisis looks to the artist for solutions:

This, though excusable, is scarcely fair, since the artist does not see life as a problem to be solved, but as a medium for creation. He is asked to settle the common man's affairs for him; but he is well aware that creation settles nothing. (1)

She goes on to distinguish the four characteristics of the mathematical or detective problem which are absent from the "life problem". 1. The detective problem is always soluble and she elaborates on how a fundamental human problem—death—is not so. 2. The detective problem is completely soluble and she elaborates on how there are no loose ends and how some people like this sort of solution, citing the spheres of medicine and politics whereas problems like liberty and order and liberty and equality have no such solutions. 3. The detective problem is solved in the same terms in which it is set and she cites Unemployment as a problem not of this kind. 4. The detective problem is finite and she adds that an artist:

may finish a book, as we may finish a war or set up machinery of a League, and he may think it is very good and allow Energy a brief sabbath of repose. But he knows very well that this is only a pause in the unending labour of creation.

She concludes:

The mind in the act of creation is thus not concerned to solve problems within the limits imposed by the terms in which they are set, but to fashion a synthesis which includes the whole dialectic of the situation in a manifestation of power.

She sees the artist as rocking the foundations of the world although this is often unconscious.

Chapter Three will examine whether children's processes follow those already seen in the mature composer. But Korzenik runs into one problem with children in defining creativity as a problem-solving process. She writes:

It is being proposed here that in order to specify creativity we must know the problem that the child tackled. (1)

In this she says the seven year old is much more concerned and able to make his intentions obvious on paper than the five year old who doesn't see the need for clarity of expression on paper and uses a variety of media to put across his idea. She concludes:

Finally the reader is reminded that these two stages of young child's picturing were revealed only after close research. The interest behind the picture-making is usually a well masked secret. Because of this, precise description of how the child seeks to solve a problem is likely to remain unavailable to the viewer. It is for this reason that art educators have been trapped in circular arguments. We know that the child's actions are responses to needs, but we generally cannot specify these needs. We have been forced into a position of saying something while in fact nothing is being said because we have lacked essential information.

From this analysis of children's drawings, I hope to have shown that certain mental and manipulative operations are demanded of the child as a means of solving a problem at different stages of development. It is these operations and not the product that are creative. One needs to recognise the goal sought, the problem to be solved, in order to appreciate the solutions. Unfortunately this is difficult to ascertain in the visual arts.

Dorothy Taylor shows how problem-solving techniques can be introduced at various stages in the creative process. She takes as her starting point a quotation from Bruner:

At the very first breath the young learner should, we think, be given the chance to solve problems, to conjecture, to quarrel as these are done at the heart of the discipline. (1)

Taylor goes on:

Music teachers may be in a better position than any other subject to provide the opportunities advocated by Bruner. As an aesthetic subject, music, by its very nature, is about problem-solving; it is as much about preference and informed judgement as it is about finding correct solutions, some might say more. It is about intuitive response, individual interpretation, choice, enjoyment, feeling, imagination and discrimination. Do we, as educators, provide sufficient opportunities to practise such vital behaviours as by asking: "Which harmonisation sounds better?" "Which of these accompaniments do you prefer?"

There should also be room for conjecture. "What would happen if we played this in the minor key?" "How would the piece sound if it were played twice as fast?" Let us imagine what alternatives would be open to us if we were to apply the biological

principle to music teaching, namely "What function does this thing serve?" An extract of music could be taken out of context and the question asked: "Is it the beginning, middle or end?" On second playing the pupils hear for themselves the results of their decisions. A familiar piece could be taped in a dis-arranged order for pupils to re-order, thereby illuminating and lending a new perspective to the value of cadences, melodic climax, key change, phrase beginnings and endings, for example.\(^{(1)}\)

Such a technique used could be used with the pupils' own compositions and this type of problem-solving would become part of the verification and evaluation stage.

All these examples show the difficulties of the problem-solving model applied to the arts. I would conclude that although there are difficulties involved there are some similarities especially if one looks in depth at the stages\(^{(2)}\) and some differences. These must be held in balance.

**Play and Creativity**

This quotation from Torrance makes another link with problem-solving—through the area of play. He starts by quoting Grippen who concludes that:

except in rare instances creative imagination does not function in children below the age of five years but some children at the age of five exhibit a degree of it comparable to children seven years old. \(^{(2)}\)

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\(^{(2)}\) Grippen, V.B., A Study of Creative Artistic Imagination in Children by the Constant Procedure, Psychological Monograph. 45 (1), 1933, pp. 63 - 81.
(This is confirmed in Part Two in what I have called the development of expressive character). Torrance concludes:

If we observe how infants handle and shape things and twist and manipulate them in many ways we find some of the earliest manifestations of creative thinking. We may see other beginnings of creative thinking in the infants use of facial expression, and the process of differentiating his body from the environment. Since the infant does not have a vocabulary, he can learn little by authority, thus, by necessity much of his learning must be created, that is, must evolve from his own activity of sensing problems, making guesses, testing and modifying them, and communicating them in his limited way.\(^{(1)}\)

Indeed, playfulness is another aspect of the creative process often stressed (already referred to by Maslow). Indeed Ward\(^{(2)}\) advocates the abandoning of the use of the term 'creativity' with young children in favour of going back to early Guilford and calling the creativity tests measures of playfulness. He claims that it is a less status-loaded word than creativity and therefore may produce more reliable results. It is highly significant that is within a structure founded on Piaget's analysis of children's types of play I have chosen to chart the progress of children's compositions.

Many psychologists have discussed play. Huizinga sees its significance in promoting contests and groupings which are seen as civilising functions (part of the function of musical play as well). He considers


fun as important but that it resists all analysis, logical inter-
pretation. (1) Erikson's view is akin to Piaget's mastery (which he
does not call play, limiting this term to imaginative activities). He
adds that adults use it as a relief from existing reality, referring
to the characteristics of 'effortless rapidity' and 'repetitiveness
which promises pleasing phenomena' in adult play (2).

Lieberman (3) defines playfulness as social and cognitive
spontaneity, joy and a sense of humour and says that it might aid
early identification of the divergent thinker. He (4) finds that
although play and exploratory behaviour are distinct, stimulus
characteristics for play are familiarity, clarity, simplicity and
congruity, while novelty, ambiguity, incongruity, surprise and complexity
spark exploratory behaviour - exploratory stimulae prepare the ground
for play. He adds:

My review of the stimulus would suggest that,
 once the novel becomes familiar - and this may
 be as a result of exploratory behaviour - the
 playful attitude or playfulness can set in.
 This interpretation can also be applied to
 Piaget's model of assimilation and accommoda-
 tion. The existing, assimilated structures
 are the basis for recombinations not only in
 the pre-operational stages but also in the
 concrete and formal stage of intellectual

(2) Erikson, E.H., Childhood and Society, New York, W.W. Norton and
(3) Lieberman, J.N., A Developmental Analysis of Playfulness as a Cue
to Cognitive Style, Journal of Creative Behaviour, Vol.1, No.4,
Fall 1967, pp. 391 - 7.
(4) Lieberman, J.N., Playfulness: Its Relation To Imagination and
Creativity, New York, Harcourt, Brace, Jovanovich, 1977, pp. 109 -
132.
development and may make up the content of imagination that leads to creative products.

... I shall return to this in Part Two.

Young children play, older children play games, suggesting that, with age, a certain restrictive element enters the play situation. The young child's play, by dint of pre-operational (symbolic) approach would have unique elements that could be labelled 'creative' at that time.

When we come to consider the middle-childhood-child, already occupied with the reversibility of concrete operations and fact finding, we can understand how he is more accepting of the real world, willing to abide by rule-dominated games and possibly uncomfortable with the ephemeral quality of early childhood play. This play in its pure form can be depicted as a deceleratory curve, but playfulness may increase.

The increase in rule-dominated play may link with the children's work in Part Two where form exercises more influence over the child in the imaginative phase. He differentiates mastery and play referring to Koehler's and Dolhinov's and Piaget's three subjects.

The young chimps achieve mastery over more limited amount of skills in a shorter play time; the human infant achieves mastery over a larger number of skills but needs much longer play time to accomplish this.

He links it with the suspension of evaluation adding that:

the modes here would suggest that, to the extent that the playful enters imagination and originality, it creates that suspension of tension, that psychological distancing required for the idea to form and be produced.

He adds that there is also a suspension of ego involvement involved as well.
Those of us who have experienced it, even only fleetingly, will agree that the task in hand takes over; that physiologically, one experiences a surge of adrenalin; that there may be a sense of well-being that could be best be described as cosmic floating, a loss of boundary of self, and the merging with the universe.

In his practical suggestions he calls for more playfulness in the classroom. He sees the pre-schooler and adolescent as similar in being:

more comfortable with spontaneous happenings and less structured presentation of the curriculum. Their joy and sense of humour thrive on ambiguities and incongruities. The difference between them lies in the base line of factual material available and the greater awareness of the difference between fact and fantasy.

The middle-childhood child, with his orientation towards the concrete and tangible, would more likely find delight in rules and regulations that make sense to him. I have, as yet, no hard data on playfulness in the elementary school child; but his delight in riddles, with their concrete referents, and the one and only answer that is always part of the riddle would seem to support our thesis. Mathematical rules and rules of grammar would, therefore, seem naturally to appeal to children of primary grades.

Torrance (1) found that in serious problem-solving situations creativity is sometimes dependent on fantasising. One set of his published material, Sounds and Images, is written with an invitation to regress, to have fun, to laugh and so enjoy oneself. Playfulness would seem to have a dual function in the creative process for it both reduces evaluation and encourages 'playing with ideas' which involves

(1) Torrance, E.P., Creative Learning and Teaching, New York, Dodd, Mead, 1970.
pushing and pulling at the limits of concepts, examining new and
different relationships and breaking out of inhibiting sets.

Einstein's famous letter regarding his own creative processes runs:

The words or language, as they are written or
spoken, do not seem to play any role in my
mechanisms of thought. The psychical
entities which seem to serve as elements of
thought are certain signs and more or less
clear images which can be "voluntarily"
reproduced and combined.

There is, of course, a certain connection
between those elements and relevant logical
concepts. It is also clear that the desire
to arrive finally at logically connected
concepts is the emotional basis of this rather
vague play with the above-mentioned elements.
But taken from a psychological point of view,
this combinatory play seems to be the essential
feature of productive thought—before there is
any connection, construction in words or other
kinds of signs which can be communicated to
others. (1)

Feitelson and Ross showed a causal relationship between the increase
in the level of thematic play and improved performances on conventional
tests designed to measure innovative and original behaviour. They
make the following proviso, however:

One should also remember that there is no
evidence that improving performances on
creativity tests at age five has an impact
on adult behaviour or even on performance of
tests of creativity in later life. [This
opposes Lowenfeld's view.] However, even
the possibility that free play and more
specifically thematic play, may be an act by
which skills and attitudes conducive to
innovative behaviour are exercised and

(1) Quoted in Hadamard, J., The Psychology of Invention in the
reinforced would indicate that there is a strong need for a re-evaluation of educational priorities in the pre-school age. (1)

Getzels and Jackson (2) found gifted and creative students as having a greater sense of playfulness, an abundance of humour in fantasy and other responses, being more accepting, more expressive of impulses, and having greater ability to 'toy with ideas' and tending to diverge from typical behaviour patterns. They saw humour as closely bound up with violence and aggression in the writings of highly creative adolescents. Kubie's (3) work links with the work in the incubation stage when he sees playfulness as a sign that flexible thinking is going on in the subconscious, unconfined by the rigidity of consciousness. Kris's (4) work also links with this stage in his concept of 'regression in the service of the ego' which stresses the use of primitive modes of thinking in the first phase of the creative process. Maslow also roots it in the subconscious into which the subject dips and where he accepts his own primary process. He can regress without fear, have fun, be humorous or whimsical:

The creative person has an uninhibited expressiveness and spontaneity typical of happy secure children. (5)


(5) Quoted in Feitelson and Ross, op.cit.
Winnicott sees the origin of play in the space between mother and child, in a reality intermediate between subjective and objective experience. He calls this the 'potential space' between mother and child which at first the mother creates and which then with the help of transitional objects grows out into independent, social and symbolic play. He sees this space as the site of all creative and cultural experiences:

adult, artistic creativity and appreciation, religious feeling, dreaming, the arousal and loss of affection, imaginative living and creative scientific work.

It is assumed here that the task of reality acceptance is never completed, that no human being is free from the strain of relating inner and outer reality, and that relief from this strain is provided by an intermediate area of experience which is unchallenged (arts, religion etc.) This intermediate area is an indirect continuity with the regions of the small child "lost" in play. (1)

He sees the facing of the tensions implicit in play as a potentially creative situation:

The searching (for the self) can only come from desultory, formless functioning, or perhaps from rudimentary playing as if in a neutral zone. It is only here, in his unintegrated state of personality, that which can be designed as creative can appear. This, if reflected back, but only if reflected back becomes part of the organised individual personality, and eventually, this in summation makes the individual to be, to be found: and eventually enables himself or herself to postulate the existence of self. (2)

Here is the phase of temporary dissolution of self seen earlier in the incubation phase.

The character of this 'formless experience' is found in John Cage's description of his creative process:

What we need is to fumble around in the darkness because that's where our lives (not necessarily all the time, but at least some of the time, and particularly when life gets problematical for us) take place: in the darkness, or, as they say in Christianity, 'the dark night of the soul'. It is in these situations that Art must act and then it won't be just Art but will be useful to our lives.\(^1\)

The conflict involved in creativity is resolved through this act of regression by which we recover our primary or aesthetic modes of structuring experience and the adaptive operation of what Witkin\(^2\) calls 'the intelligence of feeling'. The experience contains a feeling of discomfort as a new structure is created - which links with the drive towards balance and stability that is the basis of Piaget's work on cognitive development. Ross sees the second developmental crisis for individual creativity occurring at adolescence (the first occurring when the child discovered the potential space between himself and his mother):

since creativity requires full mental and emotional maturity. Only when regression is optional - when there is a past to be accepted or rejected and when the choice is one's own - only when there is a felt risk attaching to the shift of realities, and the realm of the possible suddenly expands to infinity, can the creative crisis be

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undergone. It is arguably a teacher's most important - and certainly his most difficult - task to help the adolescent boy or girl negotiate this threat to autonomy, self-determination and full self-realisation. (1)

Freud, sees the adult world of fantasy as the extension of the child's world of play which he describes thus:

Should we not look for the first traces of imaginative activity as early as in childhood? The child's best loved and most intense occupation is with play or games. Might we not say that every child at play behaves like a creative writer, that he creates a world of his own, or rather, rearranges the things of this world in a new way which pleases him? It would be wrong to think that he does not take that world seriously: on the contrary, he takes his play very seriously and he expends large amount of emotion on it. The opposite of play is not what is serious but what is real. In spite of all the emotion with which he cathects his world of play, the child distinguishes it quite well from reality; and he likes to link his imagined objects and situations to the tangible and visible things of the real world. This linking is all that differentiates the child's "play" from "phantasying". (2)

He sees the German word for play 'Spiel' as a link between children's play and adult creations. He sees the creative writer as drawing on his own fantasy world - a world created of unsatisfied wishes. He sees the creative process like this:

A strong experience in the present awakens in the creative writer a memory of an earlier experience (usually belonging to his childhood) from which there now proceeds


a wish which finds its fulfilment in creative work. The work itself exhibits elements of the recent provoking occasion as well as of the old memory. (1)

He sees the creative writer as softening, altering and disguising his daydreams to make them acceptable to the reader whose 'actual enjoyment of true imaginative work' proceeds from a liberation of tension in the mind.

Another aspect of play is the freedom to make mistakes well brought out in this passage from Antoine De Saint Exupéry:

"What mean you by 'creation'? For if you have in mind some noteworthy discovery, few indeed are capable thereof. Thus you are speaking of only a few - but what of the others?".

My father answered them: "To create may be to miss a step in the dance; or to deal a chisel awry when you are carving stone. Little matters it what the gesture brings forth. To you in your blindness, such an effort may seem fruitless, for you bring your eyes too close. Only stand back and observe from a distance the activity in this quarter of the city .... and mark my words, these noble words are shaped no less by those who botch their gestures than by those who make them deftly; for you cannot divide them up and if you will have none but great sculptors, you will soon have none at all .......

Another day he said: "Build not an empire where everything is perfect. 'Good taste' is a virtue of the keeper of museums. If you scorn bad taste, you will have neither painting nor dancing, neither palaces nor gardens. You will have acted like an oversqueamish man who never goes out for fear of being soiled by contact with the earth. At the core of our perfection will be emptiness and you shall have no joy of it. Nay, rather build an empire where all is zeal."(2)


Further Characteristics of the Creative Process

Along with the element of play that characterises the creative process is an involvement in the present. Maslow writes:

The creative person in the inspirational phase of the creative furore, loses his past and his past and his future and lives only in the moment ...... The ability to become "lost" in the present seems to be a sine qua non for creativeness of any kind ...... It has begun to appear strongly that this phenomenon is a diluted, more secular, more frequent version of the mystical experience that has been described so often as to have become what Huxley called The Perennial Philosophy ...... It is always described as a loss of self or of ego, or sometimes a transcendence of self.

Laski calls them ecstasies and says that they have much to teach us about creativeness as well as other aspects of the full functions of human beings when they are more fully realising themselves, most mature and evolved, most healthy, when, in a word, they are most fully human. (1)

Maslow sees it at its simplest in fascination, concentration, absorption in anything not only in great works of art.

He concludes his article by analysing the components of these peak experiences:

1. Giving up the past;
2. Giving up the future;
3. Innocence (without should's and ought's);
4. A narrowing of consciousness (concentration);
5. Loss of ego (self forgetfulness);
6. Inhibiting force of consciousness;
7. Disappearance of fears;

8. Lessening of defences and inhibitions;
9. Strength and courage;
10. Acceptance: the positive attitude (giving up selectivity);
11. Trust versus trying, controlling striving;
12. Taoistic receptivity (a yielding to the authority of the facts);
13. Integration of B-cogniser (an act of the whole man);
14. Permission to dip into primary processes;
15. Aesthetic perceiving rather than abstracting;
16. Fullest spontaneity;
17. Fullest expressiveness;
18. Fusion of person with the world.

Characteristics of the Creative Person

It is from such an analysis that the various lists of the characteristics of creative people are drawn. Barron(1) lists the following adjectives - clever, imaginative, playful, poised, determined, talkative, logical, rational, shrewd, civilised, loyal, mature, versatile, efficient, initiatory, resourceful, reflective, quick, enterprising, energetic, organised, fair minded. Barron in a later article summarises thus:

The creative person is more welcome to the apparently disorganised; in fact, they may be attracted to the disorganised and ambiguous as offering a challenge to their strong sense of need of the new ways of ordering. Creative persons are also more independent in judgement than less creative. They are also at once both sicker in terms of being troubled and healthier in terms of having greater resources in dealing with their troubles. They are of superior intelligence. And perhaps most important of all, creative persons are moved by an intense commitment

of an almost metaphysical sort that impels them to search for new forms of artistic vision. (1)

Guilford and Torrance include many of these factors in their list:

- Inquiring nature,
- Observes and remembers,
- Independent thinker,
- Confident,
- Humorous, yet irrationally serious,
- Can show tremendous efforts, and at other times can pay attention to anything,
- Can be a hard worker and also very lazy,
- May be extremely sophisticated at times and other times be naive and gullible,
- Can function under stress,
- Is relatively free of inferiority and inadequacy,
- Is open and free in emotional processes,
- Is persuasive,
- Able to mobilise forces easily and effectively,
- Active and vigorous,
- Is natural and free of pretence,
- Is expressive,
- Seeks and enjoys aesthetic and sensuous impressions,
- Searches for truth and lives truthfully,
- Is an adventurous thinker,
- Is dominant in a social situation,
- Possesses the qualities and attributes that lead to social status,
- Is poised and spontaneous in social and personal interaction,
- Is not especially sociable or participative,
- Is outspoken and sharp witted,
- Is aggressive and self-centred,
- Is verbally fluent,
- Is uninhibited in expressing worries and complaints,
- Is not preoccupied with the impression he makes on others,
- Is highly motivated to achieve where independence in thought and action are required,
- Is flexible psychologically,
- Is highly perceptive,
- Is open to richness and complexity of experience,
- Is tolerant of complexity and disorder,

Prefers intuitive perception over sense perception,  
is introverted but acts in a dominant way in social interactions,  
The creative person includes a high spread of behaviours which has one common characteristic the intensity in everything he does and thinks. (1)

Many other writers have produced similar lists.

Hudson (2) goes further than Guilford's stress on divergent thinking and shows that 'convergence' and 'divergence' can be creative. He also looks on the creative process as a dialogue between expression and control, between exploration and restraint. The creative person needs to think divergently to create hypotheses and convergently to formulate these so that they can be tested.

Courage is a quality mentioned by several writers. Rollo May entitled his book The Courage to Create. Gerard writes:

Another emotional factor involved with the second series of conscious work is courage. It takes courage to face the unfamiliar, to espouse the different, courage to fight one's own prejudices only less than those of others. Was it not a little child who first dared to call the Emperor naked? It took great fortitude for Kepler to adhere to his new notion of infinity (as the second focus of the parabola), for, as he said, "the idea seems absurd, but I can find no flaw in it." Just as it did for Galileo to murmur among his inquisitors, "yet the world does move." (3)

May adds to this that the creative person can live with the anxiety involved in the creative process:

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even though he may pay a high price in terms of insecurity, sensitivity and defencelessness for his gift of 'divine madness' as the Greeks called it.

He does not run away from non-being, as MacLiesh tells us, but by encountering and wrestling with the non-being, he forces it to produce being. He knocks upon silence and meaninglessness until he can force it to mean. (1)

Jung (2) describes eight major kinds of people stemming from combinations of two general attitudes of extroversion and introversion and four functions: thinking, feeling, sensation and intuition. In the eight types described he gives brief references to creativity so that there is:

1. The extroverted thinking type who has 'synthetic' judgement, whose products are recognised by society like Darwin.

2. The extroverted feeling type, found primarily in women and showing an interest in concerts, church, social and philanthropic enterprises.

3. The extroverted sensation type concerned with external objects and who can become a jolly fellow or a refined person of good taste.

4. The extroverted intuitive type who can 'make' men and inspire them and promotes and indicates new enterprises.


5. The introverted thinking type who:

formulates questions and promotes theories ... [he] opens up prospects and yields insight, but in the presence of facts ... [he] exhibits a reserved demeanor. As illustrative examples they have their value, but they must not prevail ....... [This type of thinking] can also create that idea which, though not present in the external facts, is yet the most suitable, abstract expression of them. Its task is accomplished when the idea it has fashioned seems to emerge so inevitably from the external facts that they actually prove its validity.

Kant and Nietzsche exemplify this type.

6. The introverted feeling type, principally women that shows itself in 'intimate poetic forms' guarded from others.

7. The introverted sensation type in which the external object serves as a releaser for subjective emotions. Painters illustrate this.

8. The introverted intuitive type who regards images in terms of the unconscious.

The mystical dreamer, the seer, the fantastical crank and the artist fall into this category:

If an artist, he reveals extraordinary remote things in his art, which in iridiscient profusion embrace both the significant and the banal, the lovely and the grotesque, the whimsical and the sublime. If not an artist, he is frequently an unappreciated genius, a great man 'gone wrong', a sort of wise simpleton, a figure of "psychological" novels.

Some of the characteristics of creative children may not be desirable and often lead to unpopularity with their peers and teachers for they often produce wild and silly ideas and prefer to work on their own.
Torrance\(^{(1)}\) lists the following from 150 letters describing the behaviour of children identified as creative:

- Over active physically and/or mentally,
- Annoying curiosity,
- Forgetful and absentminded,
- Good sense of humour,
- Doesn't participate in class,
- Reads in room while friends (boys) roughhouse with sisters,
- Enjoys nature and outdoors,
- Won't join Scouts,
- Mind wanders too much,
- Friends think him slightly queer,
- Likes to work by himself,
- Imaginative, enjoys pretending,
- Sensitive,
- Likes colour,
- Uncommunicative,
- Is a 'what-if?' man,
- Daydreams, gets lost in thought,
- Feels left out of things,
- Spends time watching others,
- Loves to read,
- Good only in science; good only in art and music etc.

Teachers, counsellors and administrators listed the following:

- Curiosity,
- Originality,
- Independent in thinking and doing,
- Imaginative,
- Non-conforming,
- Sees relationships,
- Full of ideas,
- Experimentation,
- Flexibility,
- Persistent,
- Constructs and builds and rebuilds,
- Prefers the complex,
- Daydreamer.

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Intelligence and Creativity

This relationship is far from resolved, but evidence suggests that intelligence is a necessary but not sufficient aspect of creativity. Osborn states categorically:

As Dean Stoddarel of NYU's School of Education pointed out, IQ tests reveal nothing concerning creative talent. (1)

Guilford and Torrance distinguish between creativity and the traditional concept of general intelligence. Taylor invents a cumbersome term to describe those dimensions of the mind not covered by IQ tests—non-intelligence intellectual activities. (2)

However, Guilford noted that below IQ level of 120 there is a positive low linear relationship between IQ and creativity. Therefore, it seems reasonable to assume that the creative individual is characterised by an above average intelligence.

Barron writes that a:

specifiable minimum IQ is probably necessary in order to engage in the activity at all, but that beyond the minimum which often is surprisingly low, creativity has little correlation with scores on IQ tests. (3)

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MacKinnon\(^{(1)}\) agrees with this and also notes that creative people have an unusual capacity to record and retain and command a greater store of information. However, traditional intelligence tests measure convergent thinking whereas creativity tests are often concerned with divergent thinking, so it is possible to distinguish high IQ and highly creative people and also to say that high IQ people are more acceptable at school. Lorge and Hollingworth\(^{(2)}\) asserted that if the dictionary definition of genius is adhered to it must be regarded as appearing at near an IQ of 180 on the Stanford Binet. Sam Taylor\(^{(3)}\) found only a moderate correlation between musical ability and verbal reasoning ability. But Phillips concludes:

The evidence gained from this investigation indicates the presence of the close connection musicality and intelligence. The reason for this connection appears to be basically an environmental one - the home that fosters musicality is also likely to foster intelligence. The findings of this study are in agreement with those of Sergeant and Thatcher in that musicality, musical background and intelligence appear to be closely associated with social status. The higher the social


status of the home, the more likely are
the children to be both musical and
intelligent. (1).

The Nature and Nurture of Creativity

There is a further literature on the problem of nature/nurture especially among analysts like Kris (2). The most detailed survey of this area was in Galton's Hereditary Genius (3). Galton claims that mental capacities are hereditary and follow the laws of organic transmission. These laws can be ascertained by careful observation. This book is devoted primarily to a demonstration of the hereditary linkages among persons of outstanding achievement in a variety of fields. He finds certain exceptions like a small number of eminent sons of commanders, of eminent fathers of scientists (particularly as compared with the large number of eminent sons of scientists), of eminent fathers of poets and the enormous number of eminent sons of artists. Geniuses often have a good physical constitution and die later. He claims that genius always asserts itself and that it is ability combined with zeal and the capacity for hard labour which is also inherited. Bramwell (4) confirms many of his findings but found that the number of sons of eminence had declined from 45% to 19%. He suggests that this was due to a smaller family size. He

concludes 'very few eminent men will spring from parentage in the lower half of the distribution of ability'. Scheinfeld (1) emphasizes the hereditary nature of musical genius and others. Greenacre (2) draws on and agrees with Galton but deplores the lack of study in this field. She does, however, say that the direction the genius will take is produced by identification at various crucial emotional phases in the child's life.

Summary

The creative process has been much described. Some writers favour a stage by stage analysis. See Fig. 1. Motivation has been the subject of much discussion and has included such theories as those based on Freud's view that an artist is working out a personal problem, to the invention of a 'sensate' problem by Witkin to Maslow's self-actualisation. The above lists link the process with problem-solving. Most theorists agree that a preparation stage or a basis of experience is important. Most interest has been shown in the incubation stage although its nature makes analysis difficult. It has been postulated that the unconscious operates like the conscious in its sifting of facts. Some describe it as regression to childish processes or underground games and it is suggested that it is characterised by a relaxation of critical processes.

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Inspiration follows this stage and this is tested out by previous experience and experimentation with the ideas. The evaluative stage is important and integrated into the whole process in some schemes. It is possible that children and the less experienced stop short in the first stages in the process. Other models of the process have been put forward. Several writers stress the continual interaction between impulse and medium. Others dislike the application of the problem-solving model to musical composition and stress the difference between the artistic and scientific processes. Playfulness and play have been much discussed as one aspect of the process - and also courage and an involvement in the present. Many lists of the characteristics of the creative process have been drawn up including flexibility, openness, spontaneity, humour, adventurouerness and so on. The role of intelligence is also much discussed in which the difference between convergent and divergent thinking features prominently along with the nature/nurture problem.
CHAPTER III

CREATIVITY AND THE DEVELOPMENT OF CHILDREN

Possible Stages in Children's Development

Taylor, a social psychologist, after analysing over a hundred definitions of creativity found evidence for five levels of creativity which:

vary in depth and scope rather than type. It is misleading to distinguish between scientific and artistic creativity since creativity involves an approach to problems, more basic than the accident of professional training. (1)

The first level, exemplified in the spontaneous drawings of children is 'expressive' creativity. It is fundamental and probably necessary for the emergence of advanced skills later; it involves 'independent expression where skills, originality and the quality of the product are unimportant'. The next stage of 'productive' creativity contains the tendency to restrict and control free play and improve technique while the products are not very different from those of other people. The next level is 'inventive creativity in which the realistic representation of a person by an older child displaces the earlier spontaneous and free expressive conception'. Important characteristics of this stage are invention, discovery and flexibility in perceiving 'new and unusual relationships between previously separated parts'. The next level 'innovative' creativity is found in few people. Its

products modify the basic principles and foundations of a whole artistic and scientific field e.g. a Cubist view of the human body. The highest form is 'emergentive' creativity where 'an entirely new principle or assumption .... emerges at a more fundamental and abstract level.' There is a level of abstraction so that a human shape may have abstract properties 'still capturing human qualities but departing radically from representational art.'

Cottle outlines similar stages:

Creativity involves the capacity to work simultaneously with human impulses and aspects of external reality - and apply one's own imagination and impulses onto reality - through a means of expression such as drawing. The first drawings of childhood are essentially an out-pouring of impulses. In the next phase of a child's drawing, the representation of reality and an allegiance to detail become important. Still later there can be a phase of what again appears to be pure spontaneity, but those who go through this phase will be able to speak about the meanings of their abstract renderings - as they were not in their kindergarten years relating them to the world they see and the feelings they are beginning to comprehend. At about this time we may catch sight of the beginning of creativity, which may emerge at age 5 or not until age 40. Alone none of these phases in the development of expression constitutes creativity but all prepare for its emergence. So, as the drawings of children change from the amorphous to the specific, creativity has not passed them by. Instead its foundation is being constructed. (1)

In music Glynne-Jones outlines three stages in musical creativity. She starts with a four year old who:

beat out noises (not really patterns), on a drum but all the time was taking in what was going on in the room. (2)

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She comes to the five and six year old:

A five year old played a drum, using one beater and watching the instrument carefully; he was entirely 'lost' in the music he was making. Patterns of time appeared in the music though the beat was not always regular, and the sound was attractive musically..... His behaviour is characteristic of this stage of development: their attention is directed to the action of playing an instrument and they make decisions to do so, on occasions choosing to play at the same time as each other, making a "band". A six year old played a xylophone concentrating on hitting the notes but without any specific order in mind. The music was given a shape by a recurring glissando (slide) up and down the instrument, which also ended the music. The tunes children hum and sing as they are busily employed often sound like "proper" tunes reflecting the patterns of pitch which have been assimilated during the early years; they are likely to be in the traditional idiom as most of the music children hear is constructed in this way. The time patterns and tunes played and sung by six year olds seem like real music and give great pleasure to the adults who hear them, though it would seem that it is really the sight which pleases. However, at this stage of development the focus is on the action of playing the instrument, or on the action which is accompanied by the singing or humming or chanting. The purpose is not to use definite musical ideas as none are yet developed. These ideas are first intuitively used by children in response to all that they have both heard and done musically. A teacher asked a six year old who was playing an instrument what he was doing. He replied in a tone of voice which suggested that the teacher was rather stupid not to know that he was playing music! He was not conscious of the fact that the music included time patterns and a tune, and had a beginning and an ending and was loud all the way through. He had a general view of his action which could not yet be subjected to analysis.

This account illustrates a point that will be taken up later, how the adult can be mistaken in his/her appraisal of children's creations.

The next stage she links with Piaget's operational stage:

It is perhaps at this stage of development that the contribution of the teacher is most crucial in fostering the development of operational thinking. In fact
this is happening from the time the children enter school; the breadth of experiences at the pre-operational stage of functioning supports the establishing of concepts. The basic conceptual structure of music depends for its growth on the sort of experiences children have when they are functioning intuitively. Teachers foster the gradual metamorphosis from this mode of mental functioning to the subsequent mode of operational thinking by bringing to the children's attention what they have done. For example, it is not a question of telling children what a beat is or of demonstrating how to play a regular beat, but of carefully analysing children's music - the music they have made up in a free working situation-and noting the ideas from our musical culture which are emerging. It is obvious when children's music begins to be in time and whether this is spasmodic, as it usually is at first, or constant. The constant appearance of this method of organising sound reflects the growth of an understanding of pulse and the beginnings of a concept of pulse.

Glynne-Jones encourages the teacher to talk about it with the composer and play examples of music with a strong beat. Verbalisation helps and is an essential part of the conceptual understanding and the analytic function. She sees pulse as usually the first concept to become operational and sees the use of pitched instruments at this stage as a product of time patterns. The notes they happen to hit are the result of their action in space. She goes on to deal with the increasing notion of communicating with another person:

As children begin to think operationally they can for the first time communicate a specific intention to a companion. Now it becomes possible to say exactly what is to be played and genuine co-operation emerges. This in turn fosters children's realisation that careful planning is necessary of endings, for example, if their music is to make sense. These discoveries lay the foundations of the understanding of form in music, and initially no information given by the teacher can replace the understanding that develops from the children's perception of a problem of organisation and the efforts to deal with it. When a problem has been perceived, teachers need to help children to see how to solve it for themselves.
Glynne-Jones discusses the role of listening to other pieces of music to aid evaluation of one's own and continues:

Ideas about how to play a piece of music grow with experience of actually doing and it is only when technical skills and concrete ideas are adequately developed that children begin to perceive what is involved in expressiveness. Indeed this is a sophisticated notion but has its roots in the early playing of children's music to the group.

She warns against the too early introduction of written skills which in her model precede reading skills.

Ingley and Hunter draw their stages of development from those identifiable in language learning - hearing, babbling (unintelligible sounds), imitation (significance of some pattern emerging), conversation (repetition of words and phrases and eventual emergence of 2-way communication) reading, writing. The musical stages they suggest are - hearing (a variety of sources and styles), experimenting (first with the voice and then any thing capable of producing a sound, at first quite randomly although repeated if found attractive), imitation (patterns sung or played to him repeated), improvisation (the taking of already learnt phrases and reconstructing them into a piece of music), reading and writing. Of these the first two seem to parallel Glynne-Jones's first stage, the third is included in her stage two but not the whole of it and the fourth is her stage three.

Tait postulates four stages of musical development. The first emphasizes sound exploration and discovery in which all available sounds

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are explored. The second stage associates the sound with a wide range of imagery - ideas - the natural world of rain, thunder and sea - and feelings - happiness, anger, excitement, sadness - colours, shapes - realising drawn pictures in sound. The third phase (which would seem to correspond to later in Glynne-Jones's third stage) focuses on fundamental characteristics of sound - length, loudness, pitch and quality. (Imaging still continues in this stage):

Children should become aware of sound elements so that they can use them to say what they want to say with precision. This is a period when children begin to strengthen sound discovery and imagery with knowledge of the media. In order to do this, they need to respond and work with the inner components of sound.

While such concepts as pulse, tempo, pitch, dynamics and accent have been implicit in earlier phases, they now become explicit and take on personal meanings. They are now viewed in the context of sound phenomena, as well as in terms of the expressive potential. Similarly concepts such as introduction, repetition, imitation, and variation provide a means of extending compositions and bringing them into cohesive shapes.

Tait suggests activities for this phase:

Sing an answer to this question. Extend this phrase. Vary this pattern. Imitate this motif. Change the dynamics. Increase the tempo. Vary the accent ....... Fill 10 seconds with any number of high, short sounds superimposed on three long low sounds. Create a fluctuating series of dynamics on one sustained pitch. Explore the problems of balancing untuned percussion sounds with some vocal sounds of indefinite pitch in a recurring five second cycle. Develop three different melodies above this ostinato. Treat this melody heterophonically. Compose a rhythmic canon.

The fourth stage he suggests records and preserves sound if this is deemed desirable.
The Manhattanville Music Curriculum Project\(^{(1)}\) sets out the concept of spiral curriculum in which through discovery methods a child will encounter gradually a more complex type of sound. So that in cycle 2 timbre is largely to do with contrast, while in cycle 5 combination of sounds is introduced and by cycle 10 they are tackling polyphony and harmony to achieve homogeneity and contrast. Walker questions the premise that there is some kind of development from one level to another, for example, from note cluster to chords built in fourths. He adds:

A much more fundamental question arises concerning planning in musical education. Dealt with in this manner, can there be such a thing as sequence implying higher and higher levels of conceptual understanding? Is it a matter of merely being different or of being on a higher conceptual plane? When Beethoven, for example, introduced a greater emphasis on contrapuntal, as opposed to harmonic content in his compositions, was he moving to a higher plane of thought or merely a different one? In this case also there was an implicit increase in complexity but does such an increase automatically mean higher in terms of concepts? His fifth symphony is surely as difficult conceptually as any of his late quartets in terms of formal structure! In the same way the cycles of MMCP Synthesis suggest different configurations of materials, not successively higher levels of concept formation.\(^{(2)}\)

However, it would seem from the literature and from my observations (described in Part Two) that there is some development in children's composition. These are tabulated as follows:

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\(^{(1)}\) Manhattanville Music Curriculum Project, New York, Media Materials Inc. 1965,

Factors affecting Children's Development

Writers have suggested ages for the stages in the development but no doubt there are variations in this. Piaget(1) gives four factors that effect the rapidity and duration of his developmental stages:

1. Heredity, internal maturation, although he claims this always acts with one of the other factors.

2. The physical experience, the action of objects. He claims that although this is an essential factor it also is insufficient for child logic is not drawn from the experience of objects, it is drawn from the actions which effect the objects.

3. Social transmission, the educative factor in the large sense. Naturally a determining factor in development, it alone is insufficient for the obvious reason that if a transmission is possible between adult and child or between that social milieu and the educated child, the child must assimilate what one is trying to inculcate in him from without. This assimilation is always conditioned by the laws of this partially spontaneous development.

4. The factor of equilibrium:

Discovery, a new notion, a statement etc. must balance with the others. A whole play of regulation and of compensation is required to result in a coherence. I take the word 'equilibrium' not in a static sense in that of a progressive equilibration, the equilibrium being the compensation by reaction of the child to the outer disturbances, a compensation which leads to operatory reversibility at the end of this development.

Equilibrium appears to me to be the fundamental factor of this development. We then understand both the possibility of acceleration and at the same time the impossibility of an increase going beyond certain limits. Balance takes time, this we agree, but the equilibration can be more or less rapid. Nevertheless this acceleration cannot grow indefinitely, and it is here that I will end. I do not believe that there is even an advantage in attempting to increase child development beyond certain limits.

(He has already commented on the amount a modern child has to learn compared with those of the ancient Greeks.)

He discusses too the possibility of a relationship between Freud's affective stages and his cognitive ones. He sees links at all stages - e.g. the beginning of the concept of object permanence - and goes on:

At the age of 7 or 8, for example, new reciprocity relations are developed (in the logical sense of the term) in the connection of the formation of reversible operations. In the field of moral feelings, a lessening of the effects of the superego and of authority is noted on this same level in favour of justice and other aspects of the moral or affective reciprocity. Similarly, on the adolescent level, during the period when the individual inserts himself into adult life, relations exist among the affective and cognitive transformations. Affectivity or its privations can certainly be the cause of acceleration or delay in cognitive development. But this does not mean that affectivity produces or even modifies the cognitive structures whose necessity remains intrinsic. Actually the affective and cognitive mechanisms always remain indissociable although distinct; and it goes without saying that if the affective stems from an energetic then the cognitive stems from structures. (1)

He develops his ideas of stages more thoroughly by defining their characteristics:

1. The order of succession of acquisitions must be constant.

2. They have an integrative characteristic, that the structures constructed at a given age become an integral part of the structures of the following age.

3. A stage is a whole structure.

4. A stage includes both a level of preparation on the one hand and of completion on the other.

5. There is a distinction between the process of formation and final forms of equilibrium.

Are Children Creative?

With these surveys of the stages of creative development we come to the problem as to whether we can use the term 'creative' to apply to young children. Certainly the so-called creativity tests have proved not to be very reliable predictors of adult creativity. They define creativity as an ability, or rather as a collection of abilities. But, if you view it primarily as a process can a child be viewed as creative? Cleall thought that he could. He quotes Mannheim:

It is probable that every attempt at doing something has an antecedent view of the act to be performed. The main task of the adult is not to hamper opportunities for expression in movement, speaking, singing, touching, tasting; and not to expect too early a self-consciousness in spontaneous acts. We should not want the child to reflect too early on the relationships between his private world and the world as we know it. Our maxim should be 'Let it happen' rather than 'make him do that'. In other words 'If a thing is worth doing, it is worth doing badly.' (1)

Cleall sees the need for children to be allowed to 'act of their own volition' likening the process to play and referring to Froebel (as already discussed in Chapter Two).

However, it is at this point that a difficulty arises. In the Chapter Two adults were thought voluntarily to return to primary processes to achieve the creative act. But the child is still at the mercy of these primary processes and therefore unable to use them willingly for the service of the ego i.e. of the work of art. Dudek says:

The abstractness of his work has resulted not by choice but by the nature of his global thinking .... The child's painting therefore lacks true imagination; it is imaginative by the same processes that a dream is imaginative. Although the drawing looks free and spontaneous, the child has actually worked hard to put his abstractions of reality down on paper. But there has been no transformation of the raw material. The final product is not art. It is an expressive gesture, telling us much about the child's mind and his immediate psychological state. (1)

She does not devalue children's art but disputes the use of the term 'creative product'. She does add the proviso:

The activity may, perhaps reflect the first step of the creative process.

This was discussed in Chapter Two.

Flannery defines two states of aesthetic consciousness:

Though we often think that children and animals are more in touch with the aesthetic than adults, they are, on the contrary, in a pre-aesthetic state. A child is unconsciously aware of aesthetic phenomena. The aesthetic is a state of conscious awareness; thus a child is not in a state of aesthetic awareness.

When we wistfully dream to return to the state we had as children it is impossible as adults because we have crossed the threshold of consciousness. What we can turn to is the mature aesthetic consciousness of the adult. (1)

She adds that this gives us a sense of our value as an individual being and she favours the idea of aesthetic maturation in childhood by a variety of sense experiences.

Dudek refers to to the work of the art historian Arnheim who says that:

Genuine art work requires organisation which involves many, and perhaps all of the cognitive operations known as theoretical thinking. Perceptually a mature work reflects a highly differentiated sense of form, capable of organising the various components of the image into a comprehensive compositional order (1972) ....... His analysis of Rembrandt's Christ at Emmaus runs: The basic compositional scheme, often considered a purely formal device for pleasant arrangement, is in fact, the carrier of the central subject. It represents the underlying thought in a highly abstract geometry, without which the realistically told story might have remained a mere anecdote .... Works of art, on the other hand, are made exclusively for being perceived, and therefore the artist endeavours to create the strongest purest, most precise embodiment of the meaning that unconsciously or unconsciously he intends to convey (2) (1972).

Could a child think like this? S/he lacks the grasp of the materials and experience of the tradition. But s/he may be acquiring these through his/her activity.


Creative work has to stand on the shoulders of previous work and understanding in the discipline in question. In all of them we have to do the hard work of learning the grammar and syntax of the various modes of understanding as part of our attempts to make advances or innovations within them. This is no less true of the arts than of the sciences. We have to learn to walk before we can run, much less fly. One has only to watch the efforts of dancers warming up, of actors living themselves into a role, or painters' close attention to single strokes, of musicians struggling to find the right sound, and the long hours of practice for all to realise that original work, brilliance even genius, in the arts, requires as much discipline, control and patience, knowledge and vision as that of any engineer, historian or scientist struggling to solve problems, find the evidence or falsify a hypotheses. But as James Gribble remarks:

'We do not try to get children to think up scientific hypotheses or put themselves in the shoes of historical personages or paint pictures in order to develop their creativity or imaginative ability. For what we mean by developing creativity or imaginative ability is getting them to perform these varied tasks as well as they are able. (1969)'

(1)

This is a confusing quotation, but the passage does contrast the child's creative process with the long working out of ideas in a material form already seen in Chapter Two.

Pickard agrees with Dudek that no creativity is possible before the stage of operational or causal thinking. She writes:

Operational knowing is a way of acting upon and transforming reality. Creativity, which is concerned with transformations leading to novel conclusions, is, at its zenith, dependent on operational ability .... The purpose of considering a selection of the findings is to illustrate the child's increasing ability to transform identities and to attempt to demonstrate that without operational ability creative con-

clusions are not possible .... In recent years the label 'creative' has been applied somewhat too freely to work, usually in the field of art, carried out by children of different ages. It is argued here that often the label has not been appropriate because the majority of young children are not capable of creative thought. Without doubt their products might well be evaluated as creative by a perceiving adult who is capable of appreciating the transformation of identity involved and who has enough understanding of knowledge as constructed in his own culture to regard the product as based upon another logic. Researchers interested in creative products usually stop short at the product itself and rarely continue to investigate the ability of the individual responsible for it. Apart from the fact that evaluation of creative products is a highly subjective matter, in approaches of this type the recognition and appreciation of the transformation may lie with the evaluator and not necessarily with the individual carrying out the transformation. Unless the researcher considers the ability of the knower and until he goes beyond the evaluation of the product, he may be doing no more than assessing his own response to it. But we must not confuse what we make of children's constructions with what they intend or are capable of. (1)

This is in sharp contrast to Torrance who outlines stages in creative development thus:

In the culture of the United States, one peak in development seems to be reached approximately at age 4½. By age 5 when the children enter kindergarten there follows increases in the first, second and third grades. At age 9, near the end of the third grade, or at the beginning of the fourth, there is a rather severe decrement in almost all of the creative thinking abilities. Then comes a period of recovery, especially for girls in the fifth grade. This recovery, however, is primarily in fluency and not in originality. The recovery in originality comes largely

in the sixth grade. After this, there is another decrease between six and seventh grades.

The shape of the developmental curve differs from culture to culture. Indications are that, where there is a large degree of cultural continuity, development of these abilities is continuous. Drops in the curve appear to occur where cultural discontinuities coincide with severe discontinuities in development. Thus, the evidence indicates that drops in the developmental curve are strongly influenced by cultural forces as well as by purely developmental forces. (1)

Dudek in this context looks at the so-called drop in creativity aged 8 or 9 and sees it as a change in the quality of 'expressiveness' (the term that she prefers to creativity in young children):

At age 8 or 9 the child begins to see and integrate reality in a differentiated as opposed to a global way. This has been occurring slowly earlier but at age 8 he becomes full of perceptual dominance to a significantly greater extent. He is now at the stage of concrete operations possessing concepts he previously lacked i.e. serialisation, transformation, reversibility, causality etc. (Flavell 1963). He therefore begins to express his new cognitive mastery through a more differentiated, more realistic drawing and painting. He paints as the adult sees it.... Feeling has not disappeared; it becomes subservient to manipulation of form, to articulation of more realistic detail, to concepts of appropriate match. The greater subtlety of thought indicates actually more, not less imagination. Primary process material with its ambiguity and autistic logic is no longer evident, however, and therefore the surprise and vividness is also missing. The adult concludes that the painting shows little of its former creativeness. True, by previous standards, it has lost its freedom and spontaneity, but the acquired control reveals that the mind is now ready for more complex activity—possibly for creativity. (2)


The other drop in creativity (aged 11 - 15) she allies with the emergence of true conceptual ability. Having entered the stage of formal operations the children begin to hypothesize, predicate, perform combinatorial analysis, images etc. She attributes it to Piaget's claim that the advent of a new cognitive action causes an increase in egocentrism. She stresses the dangers of the pressures on a child to conform and asks for the child to be encouraged to make use of his primary process rather than fear it. Her conclusion runs:

Defined as a personality trait, then, creativity in young children has little relationship to creativity as the making of novel products by adults and may be better described by the term expressiveness.

In Part Two I will describe a similar change in musical development.

Cottle, however, while making similar distinctions on the stages still recommends the use of 'create':

While the content of the child's imaginations and expressions is always changing the drive to create and establish something new as uniquely their own remains very alive despite our fear that it may be slipping away. (1)

Elsewhere, Torrance (2) looks at the slumps in more detail and sees the slumps in the 4th grade as being in fluency, flexibility, originality and elaboration. It will be seen in Part Two that there are times when the child is more concerned with acquiring the patterns of culture. S/he therefore appears less original but is in fact going

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through a development mode and far from going backward, is going forward and needs to go forward in order to reach the higher levels of originality at a later stage. This shows the weakness in creativity tests in examining what is essentially a developmental process not a static phenomenon. Indeed the two slumps outlined by Dudek at 8 or 9 and 11 coincide with this tendency. Dudek's use of the word expressiveness instead of creativity ties in with this too.

So there are various views on creativity in children as compared with that of adults. The products may indeed seem to the observer as novel and spontaneous and therefore some would say creative, but the process is different in various ways. It could be seen as different in degree or level -as Irving Taylor puts forward -children only reaching the first three levels of his analysis of creativeness. It could be seen as different in so far as it stops short at the first stage of the creative process (Dewey)\(^{(1)}\), because the child lacks the skills and experience to enter the later stages. It could be seen as different in the whole process in so far as the preoperational child has insufficient grasp of reality to transform it. (The operational child, however, embarks on the first stage of creativity.) It could be seen as different in the incubation process for the child cannot consciously use primary processes in that s/he is still totally the mercy of them. It could also be that a child is gradually building

up a 'culture conscience' that he will be able to use to evaluate his work (as referred to in Chapter Two). Children's play is also significant for it is within a structure founded on Piaget's analysis of children's types of play that I have chosen to chart the progress of children's compositions.

The Role of Skills in Creativity

There is a great deal of discussion of this. Swanwick sees them as necessary at two stages in the process:

When the term is applied to achievements in maths, science and elsewhere, there are two conditions usually in evidence along with any crucial imaginative act. The first of these is a background of knowledge, skills and experience in the particular field of activity to which a problem relates. The second is that any 'creations' are verified, tested, either by rigorous reasoning and debate, or by controlled experiments, or, in the case of technology, by whether the thing works or not. (1)

He goes on to quote Zola's introduction to L'Oeuvre:

I shall recount my own intimate life as a creative artist, the everlasting pains of childbirth.

and Copland's belief that music is especially demanding of all the arts:

Music boasts no Henri Rousseau, no Grandma Moses. Naiveté doesn't work in music. To write any sort of usable piece presumes a minimum kind of professionalism.

In the light of previous writing about Koestler's act of bisociation, it would seen that one must have already acquired two different sets of rules before they can bisociate.

Rossman supports this:

Many impressive and highly coloured stories have been told of accidental discoveries and inventions. It is natural, of course, that stories should appeal to the popular imagination. A careful study of these stories of accidental inventions, however, will reveal the fact that luck accidents only happen to those who deserve them.

In nearly all cases we find the accident happens only after a persistent and carefully conducted search for what is invented. (2)

He does, however, add that:

undoubtedly man's earliest discoveries and inventions were the result of pure chance.

Bentley is particularly condemnatory of 'modern' creativity for its apparent denigration of skills. He takes as his starting point a quotation from Brian Dennis:

This enabled the teacher to find an approximation in the classroom to many of the sounds of avant-garde music (Cage, Berio, Stockhausen, Penderecki, and even Boulez). The system demonstrated how sophisticated as well as 'modern' a group of young musicians could be particularly as each person added to the overall complexity of the textures by playing different pitches, rhythms etc. In other words a large ensemble of youngsters was

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able to match in sound the virtuosity of a smaller number of professional players ...
The extreme difficulty of Boulez and similar composers is that the music requires unprecedented technique of execution. (1)

From this Bentley draws the conclusion:

One cannot have it both ways. If unprecedented technique is needed for the performance of certain pieces of music, how can we accept that relatively unskilled school players (however euphemistically described as "young musicians") can "match in sound" that which requires "unprecedented technique". What have the professional players been doing spending years of training and hard work acquiring their techniques, if youngsters in school can "match their virtuosity" without any training or effort? And what, if they read the above quotation would the composers Messrs Boulez and Co think? (2)

(They might, of course, think that those young musicians are in the beginning stages of acquiring this unprecedented technique.) He finishes by using a quotation from Schafer to question the educational validity of these procedures:

A question often raised over the years at lectures at workshops has been 'Where does it all lead?' and I suppose after ten years you might have an answer. But the easiest answer to give will be the hardest to take and will not win converts for creativity.

"Where does it all lead?" the Principal asked after one of my more daring sessions, and looking desperately around at the debris I fixed my eye on him firmly and said "Anarchy anarchy ...... a totally creative society would be an anarchic society." (3)

This is an extreme view and Ellis softens it in:

Creativity flirts with chaos and unless there is an active and stimulating inter-change of ideas, techniques and experiences, then the process becomes valueless .......

(1)

Other writers see exploratory activity as the first stage of creativity the skills being taught as and when the child feels a need for them. This is John Horton's view in the UNESCO report:

In teaching musical skills there can be no successful attempt at intellectual analysis, formulation and recording in graphic symbols until a mass of sense impressions has been acquired .... The reading and writing can come later. What is surely to be avoided is the premature teaching of abstractions, however attractively it may be possible to present them .... The teacher cannot afford to let himself forget that notation is only the servant of musical creation and interpreting. (2)

This is exemplified in this quotation from Jenny Fowler:

Getting music down on paper presents problems. The first problem is that the notation should not dictate the ideas. One has to thwart the mind from thinking in traditional notation and consequently along beaten paths. I usually devise a short-hand way of jotting down ideas as I think them, and work out later, how best to notate them in order to convey them to other people.


A conventional notation can be a way of putting out signs to show what is relatively important or not important in a piece. In my string quintet, Ravelation, some of the patterns of quicker notes are written with much smaller noteheads, and without accidentals. It is requested that these be played as microtones, according to their approximate position on the stave, and that the pattern of notes be followed. It seemed to me that if I had written exact pitch values in microtones, the players would be concentrating very hard on getting the pitch right (pitch being a priority that players expect to be important - and, indeed, one hopes that they get it right when one does notate it precisely!) whereas I wanted their attention to be concentrated on the patterns and the way they were changing and progressing. (1)

Shaw adopts the opposite view from Horton for while praising the writings of Herbert Read he sees music as different:

By means of freely offering children means of self-expression in various creative media without first teaching technique or skill, very remarkable results have been achieved but music does not seem to offer the appropriate opportunities for children's self-realisation on these lines principally because there is no form of creative work which does not require technique. (2)

Paynter disputes that this is true of music alone, and asks why people expect musical sophistication from the start:

Does it really help to develop children's musical imagination if one begins by imposing on them our own developed concepts and techniques of music? Is it possible that there is a vital stage that comes before the techniques of having something to say? Here, however rudimentary the level of exploration and discovery, the processes will be no less than those at the root of any artist's working methods. (3)

(1) Fowler, J., My Own Ears, NMA4, 1985, Victorian Ministry for the Arts, pp. 3 - 6.


So Paynter sees the child's creative process akin to the adults in having the fundamental purpose of feeling articulated in form as its underlying purpose. Hollander also sees the acquisition of techniques as being a second stage in the achieving of creativity:

Parents say to me "Johnny doesn't study his scales. He's always improvising the way he wants". My God, let him. This is what being a human being is about. And when he says "My mind is going this way but I can't move my hands" he'll have to know about muscle relaxation and those little black dots. "Well, tell me, teach me". (1)

Maxwell Davies appears to support the idea that children will learn skills when they feel the need for them. He talks about a pupil's composition that:

has remarkable assurance for a composer who never had a piano lesson, a harmony lesson nor a rudiments lesson. His musical tuition has been limited to two years on a clarinet, and to normal orchestral and choral rehearsals at the school. Very many hours indeed went into this work, and he taught himself to play the piano competently enough to try the harmonies himself during the weeks of its composition. (2)

This compares with a friend's son who taught himself harmony on the piano for his compositions.

Paynter (3) suggests that it is time we stopped using the word 'creative music' simply because teachers do see it as an alternative to traditional values with a dichotomy between this and other forms of


music-making and that, therefore, skill learning has been distinct from the creative employment of skills.

The sequence of exploration and discovery leading to more operational thinking does seem to be an essential part of learning to be creative. Indeed this links with Ghiselin's premise that:

media are wholly mastered only in the exercise of creative power in production, by efforts to shape the substance of the medium in new configurations. (1)

A child cannot work in his imagination with sounds he has not heard. Cleall describes how the child's formation of concepts is based on motor experience. He quotes Kephart:

At the earliest stage, the child's information-processing strategy is largely motor in nature. If his motor patterns are inadequately developed he is literally unable to contact and apprehend the world around him. In later stages, the motor component becomes subservient to the child's early perceptual and conceptual capabilities. Initially, however, intellectual deficiency is a tantamount to a disrupted and undeveloped motor system, (1968, quoted in Ball 1977). (2)

Cleall sees that the problem of music education has been that the methods used required 100% accommodation to the demands of the teacher. (Make him do this! Make him do that!) and motor patterns were inadequately developed precisely because the pupil was forbidden to vary his performance spontaneously.


If the vicious circle is to be broken, we must accept, with Kephart, that perception and cognition, including the capacity for abstraction, ultimately develop from a motor base and that, without the necessary motor elaborations and generalisations, intellectual growth will be impeded and distorted; in which case remedial treatment requires the appropriate therapeutic reintroduction of the motor component. Even for the normal child, concepts are ultimately anchored in motor experience. Given that there was formed at last an internal model — a constant and orthoscopic perceptive image — now with no extended exploratory operation, one short glance at the object — the distinguishing of some characteristic feature — can signal into action the whole internal model, and thus lead to an immediate grasping of the properties of the perceived object. (Zaporozhets, 1965)\(^{(1)}\)

Plummeridge sees a basic difference between the composer and the pupil in the music lesson as what Seashore calls "tonal imagery":

Over fifty years ago Seashore analysed the introspective reports of famous composers and concluded that the most significant common factor of the "musical mind" was the ability to live, think and operate in a tonal world. "Tonal imagery", he argued, was a necessary condition of any creative work in music. Although there is no reason to suspect that the child has not entered this world, it will be reasonable to suppose that his knowledge of it is very limited in comparison to that of the recognised composer. (2)

(He goes on to deal with children's work based on graphic symbols where the child conceives it in visual terms rather than aural terms as an example of the difference in a child's world compared with a composer's.) I suggest that the "tonal imagery" is built on a base of the child's exploratory activities and without these it cannot exist.

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It is interesting also to note that Stravinsky talks about the role of the sounds of St. Petersburg in his musical development:

The sounds of St. Petersburg are still close to the surface of my memory. Whereas visual images are recalled, in my case, mainly by unexpected shifts and combinations of pressures, sounds, once registered appear to remain in a state of immediacy; and while my accounts of things seen are subject to exaggeration, to mistaken observation, and to creations and distortions of memory itself (a memory being a whole cartel of invested interests), my recollections of sound must be faithful. I am proving as much, after all, every time I compose. (1)

Agnew (2) looks at the work of Schumann, Mozart, Brahms, Tchaikovsky and Wagner and at the spontaneity of their auditory images (although he also finds visual and kinaesthetic images there as well) and the importance of auditory memory. And Aeldi writes:

Neither inherited talent nor physical growth of a child are factors to be denied, but the older a child becomes, it is not these but the previous learning experience a child has had that exerts a more decisive influence. (3)

All this links back to the discussions in Chapter Two of the role of memory in the creative process. In my observation of children's development can be seen the building up of a bank of cliché and musical conventions in certain modes of operating. This is clear in Maxwell

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Davies's description of his work at Cirencester. I include a long quotation as it embodies much of what has been discussed in the preceding paragraphs:

It was while we were rehearsing for the first performance of my *Magnum Mysterium* for choir, instrumental ensemble, that the first original composition by members of the school appeared. This was late in 1960, after several small works I wrote specially for the school orchestra had been rehearsed and performed, but *Magnum Mysterium* was my first work for schools with a choir. As the young composers had learned I, IV, and V in class working with them practically, their first original efforts naturally employed this formulae. I must add that because my compositions grew out of this stage many years ago, many visitors to the School have been surprised to see me insisting on chords I, IV and V to the extent of having the children improvise on them clearly and correctly in groups on simple chord patterns, with voices and instruments, resulting in an elementary but controlled polyphony. It would be useless to deny the basic chord patterns at the very roots of our musical experience, which form the basis of so much of our musical communication. If, in order to create a freedom from tradition as certain elements would have it, we deprive our pupils of a common denominator of experience and communication, they have no common ground from which to start out, reassured, towards a natural individuation. The rootless composer will be reduced to the meaningless, disintegrated manner of composition adopted by the composers who either never had roots, or denied them. Their work will be uncontrolled, in that it must fail to present meaningful musical images deriving from a perceived inherent 'ideal' technique. The striking and persuasive quality of this approximation is dependent, to a paradoxically large extent, upon the difference in the recognisable work from previous interpretations of the "ideal". Such an ordered, integrated and related process in composition differs absolutely from the automatic processes adopted when either the total field of the music is
organised according to pre-determined formulae, for instance by a series projected via numerical permutation to all dimensions (pitch, note values, dynamics, colour etc.), whereby the composition process is reduced to the selection of the series and the rest amounts to watching a computer work once the buttons are pressed, or at the other extreme, but with the same result (that the composer has no control over any given musical event or any given point in his creation), when musical events are determined by chance operations, such as dice-throwing. Freedom is pointless when the responsibilities implied are betrayed into absolute pre-determinism on the one hand and into absolute anarchy on the other.

I have dwelt on this point in the hope that it will clear up some misunderstandings about tradition. In circles where tradition is misinterpreted, art becomes grotesque as tradition is lost, conscious creation is abandoned and unconscious creation is compromised by either of the two extremes described above.

What tradition does not mean, however, is the blind observation of a priori values formulated by non-creative middle-men from a lack of understanding of the real means of communication, whereby rules about progressions from note to note within fundamental chord patterns obscure the idea which the chord progression formulates. The first need of a young composer trying to compose is to get his idea across, and to niggle him about note-to-note niceties before the basic idea has become alive and meaningful on a very deep level is to inhibit all creation and probably to inflict permanent harm on the creative faculty. (This links with Chapter Four.) It is as if one were to insist that a sentence formulating a desire for water be perfect according to a grammatical system having no meaningful relationship perceptible to the thirsty
person with the immediate need for water, and upon repeated insistence on true grammatical niceties, the need for water would meanwhile be superceded by the demise of the thirsty organism. These early compositions, then, by our children, contain parallel octaves and plenty of the pundit's "grammatical errors". Had I insisted on grammatical accuracy at this stage, the freshness and spontaneous joy would have disappeared. (1)

Creativity and Contemporary Idioms

Stephens, however, in a somewhat different slant puts the onus on the teacher to be steeped in modern composition and quoting Lutoslawski he writes:

The twentieth century has discovered enormous areas of new sound beauty and for those who can admire this beauty it seems almost absurd to stick obstinately to the old rules, tastes and habits and to scorn the unlimited possibilities discovered by the masters of the twentieth century. The task of today's music educationalists and animators of musical life is to get acquainted with these new laws, new values and new artistic aims and then to "tune" the sensibility of listeners from younger generations so that they will be able to assimilate new artistic values created by the people of our times. (2)

Later in the same article Maxwell Davies supports this when he refers to helping a pupil with a composition using Webern-like orchestration:


It is clear that to help a pupil work out a composition like this, in a very "contemporary idiom" the teacher must be familiar with the problems involved, in this instance, necessitating a good knowledge of Messiaen and Stravinsky, who both faced similar compositional problems on a far more advanced level. Yet the ready answers to the problems must be forgotten, and not intrude upon the solution of a particular work. This is a good occasion to introduce the work of Messiaen (Vingt Regards) and Stravinsky (Argon) to the composer. (1)

Plummeridge, however, sees children's creative work more in line with aleatoric techniques of Cage, Xenakis and Zinofieff. (The Manhattanville Curriculum Project also says that musicians in the creative aspects of involvement, are concerned with the musical thought of our times. It does not preclude the use of historical music for appreciation but it does as a source of creative actions. The reason given is that:

\[\text{a musician is a contributor to the continual development of musical thought and practice \ldots\ldots\ldots music is a continuing art and not a static or completed set of occurrences.}\]

So creativity is again concerned with the new and only concerned with the old if new is developed from it. The practices advocated in MMCP support this.)

However, Plummeridge makes the important proviso about the creative process involved here, that whereas an important part of the process

\[\begin{align*}
(1) &\text{ Op.cit.} \\
(2) &\text{ Op.cit.} \\
(3) &\text{ Op.cit., p. 6.} \\
(4) &\text{ Op.cit.}
\end{align*}\]
for established composers is that they have the initial \textit{idea} that leads to the composition process, often in the classroom that idea is given to the children, not created by them. (This sets apart the work of established composers and children again.)

Loane summarises much of the discussion in these last paragraphs when he says:

However, if we grant that the act of creation is itself the central sort of musical learning, our investigations seem also to reveal close and complex connections with skill learning and theory learning.

Firstly, pupils may draw on previously acquired skills when they create. For example, \textit{Midnight Delirium} could never have been created without the various instrumental skills learned through practice nor without the compositional skills built up through months of making up more elementary pieces.

Secondly, pupils may draw on techniques suggested by the teacher as a starting point for an assignment. For example again, \textit{Midnight Delirium} took its initial impetus from the flute player's exploration of the suggested triads of E minor and A minor.

Thirdly, pupils may draw on techniques suggested by the teacher as work progresses. For example again, the teacher suggested the improved hand position for the guitarist in \textit{Midnight Delirium}, and he suggested the extension of the 'terror' passage, because he heard the possible relevance of those ideas to what seemed to be the pupils' emerging musical intention.

Fourthly, and perhaps most interestingly, the pupils may find techniques they never knew before, but which they stumble on during exploration, and which they accept and adopt as appropriate to their
creative intent. Indeed, we find that often the most intriguing and exciting aspects of pupils' work came into this category. If this is so, there may be important implications for the way in which we initiate composition work in class. It may be vital to present assignments that allow, or rather encourage, the pupils to explore ideas in that open-ended way.

We cannot predict in advance which techniques will become musically relevant to which pupils when, and we must fear that to restrict pupils' musical experience to teacher-directed work, or to composing "within a framework", might tend to result in the setting of trivial tasks. In the tape-recorded compositions we are studying, each pupil is climbing his or her own musical path, albeit in constant interaction with other pupils and with the teacher and that path very frequently transcends any particular outcome the teacher may have foreseen. We might say that the teacher's initiating role should be more like that of a launching pad than like that of a framework.

New techniques, whether suggested by the teacher or discovered by the pupils, are not yet, of course, skills. A skill is a practised ability, something that can be drawn on whenever chosen, in a variety of unforeseen contexts. But perhaps a pupil's more or less fortuitous discovery may be taken by the teacher as signal that the pupil is ready to learn it as a skill. Then a performance technique may require a technical exercise before it becomes a performance skill. And a composition technique might require theoretical elaboration before it becomes a composition skill.

Of course, the evidence presented here cannot be conclusive on its own, but it does suggest the possibility that skills may be learned better not worse in the context of imaginative application. Certainly many will take the view that that imaginative application is the whole point of learning skills anyway. (1)

Creative Work in the Classroom

Implicit in this problem is the whole idea of being creative to order in a classroom and what the teacher needs to do to overcome the problems. Swanwick writes:

Over the rarer moments of inspiration, the flashpoints of original ideas, we seem to have little control, and they may indeed arrive when least expected, perhaps uninvited, when relaxing rather than working. Certainly they will not come to order, or in a contrived 'Let's be creative' session. But however and whenever they come, the ground is prepared beforehand and the novelty tested after its emergence. (1)

Gutman writes:

Creative behaviour, by its very nature, is spontaneous, nondirected, ordinarily not capable of being elicited at will. Therefore it is unpredictable and escapes manipulation and control. It is generally not amenable to experimentation. (2)

I would submit while this is true of the flashpoints of illumination described in Chapter Two, there are other stages in the creative process which do not demand this intuitive flash. It is possible that we can explore these in the classroom. Tchaikovsky writes:

Do not believe those who try to persuade you that composition is only a cold exercise of intellect. The only music capable of moving us and touching us is


that which flows from the depths of a composer's soul when he is stirred by inspiration. The guest does not always respond to the first invitation. We must always work and a self respecting artist must not fold his hands on the pretext that he is not in the mood. If we wait for the mood, without endeavouring to meet it halfway, we easily become indolent and apathetic. We must be patient and believe that inspiration will come to those who can master their disinclination. (1)

**Creativity is for Everyone**

If inspiration is a component of the creative process one may well ask how far it is universally found in music. The writings about creativity in the classroom abound with the idea that it is. Paynter and Aston:

> We have all the capacity to perceive, reflect and express. We all have the capacity to create. (2)

Hickok and Smith:

> We know that most all the children have the gift of creation. We know that music is a universal behaviour of mankind. To develop these two qualities in the child—his musical ability and his creative ability has been the goal of the public school since music was incorporated as part of the curriculum. (3)


Steinberg:

Everyone is born with a high endowment of awareness; the creative attitude seems to have been built into the species. (1)

Gowan and Demos:

Children are naturally creative and only require the right atmosphere to manifest it. (2)

Benson:

The purpose of this kind of study is to deal with students of known gifts; another purpose of this combination of the creative act and the joy of pursuit is to discover the inherent creativity there is within every person. The degree of achievement and accomplishment may vary, but these procedures and attitudes have been successful in teaching classes whose age ranged from 13 through 19 and whose previous musical sophistication ranged from no previous instruction to considerable knowledge about music. (3)

Auerbach:

We have focused only at the tip of the pyramid of development with looking at creativity, and thereby inadvertently excluded whole groups of children from participation in the creative acts that arouse wonderment in adults and add to


the children's self-respect. Many nursery school teachers and adults sensitive to the needs of young children recognise these acts as being creative regardless of where they occur in the pyramid. A child with a lung disease who manages to develop better breathing skills is a joy to his teachers and nurses because it represents a new, unique and original development ....... Those individuals whose levels of abilities, skills, learning and associative thinking cannot reach the level of concentration or free play are still creative and unique in their own way, although they might not be highly intelligent. Recognition of the child's creative acts, regardless of his position on the pyramid of development, can be made formal with the adoption of the creative act as the unit of assessing each child's progress and development in any nursery school programme. (1)

Arnold concludes:

I believe most sincerely that all men are born with a very definite potential for creative activity. This potential may vary from individual to individual but the large differences are more due to failure to realise the inherent potential rather than due to original limitations. (2)

He supports ways to improve one's own creative potential.

Thurstone says that Spearman assumed creativity to be a general characteristic but states his own position as:

We shall probably discover that creative talent must be combined with specific abilities which are required for expression in different media. (3)


Torrance maintains that everyone possesses creative abilities to some degree and that it is the obligation of all schools to provide training thinking for four reasons:

1. That it is important for mental health as an antidote to repression so destructive to personality.
2. That it improves memory.
3. That it is essential for the application of knowledge in personal and professional spheres.
4. That it is important for society.

Hallman makes the point that unless it is commonly found in children it can never serve as a proper aim of education. He supports the view from the philosopher Murray and Bergson, the physiologist Gerard, and the psychologist Maslow and psychiatrist Fromm. He goes on to outline three views about the reasons for

difference in the range of creative abilities. The first is that the difference is quantitative rather than qualitative, referring to Jones\(^1\). The second is that although all people are creative, some have learned to release into outward expression, while for others it is only a potential of which the individual may even be unaware, a view exemplified by Lowenfeld\(^2\) who exhorts teachers thus:

> We have to regard it as our sacred responsibility to unfold and develop each individual's creative ability as dim as the spark may be and kindle it to whatever flame it may conceivably develop.

In the third view the difference in the range of creative abilities tends to disappear when creativity is defined as a way of conducting one's life rather than in terms of a number and kind of object which one may have produced, thus equating it with self-actualisation, a view best developed by Rogers\(^3\).

Creativity and the Gifted

However there is another literature that sees creativity as not universal. Guilford sees excellence as limited to a few people when he writes:


Another important reason for the neglect, of course, is the difficulty of the problems themselves. A practical criterion of creativity is difficult to establish because creative acts of an unquestioned order of excellence are extremely rare. In this respect the situation is much like that of a criterion for accident-proneness which calls for accidental occurrence of accidents. The accidental nature of many discoveries and inventions is well recognised. This is partly due to the inequality of stimulus or opportunity which is largely a function of the environment rather than of individuals. But if environmental occasion were equal, there would still be great differences in the creative productivity among individuals. (1)

Bentley (2) claims that the instinct to create original music is not universal and points to the way in which many infants lose interest in sound exploration activities as an example of this. Dudek adds:

What evidence do we have then for the notion that children are universally creative, as most adults would like to believe? The type of expressive creativity which a child demonstrates in behaviour is difficult to assess and we have no research data to report on its frequency. I believe, though that it is more a myth than a reality. Few children are able to dance, sing, recite a poem or tell a story at a moment's notice. We need only reflect on our own personal experience as and with children to realise how few children can do this easily (in contacts other than participation in games with peers). In fact, the child of ten or twelve dies a thousand deaths (as does the adult) at the thought of having to perform before an audience. When it comes to created products - drawing and painting, for example - we have slightly more objective


The remarkable freshness of vision to which the articles on creativity refer as characteristic of children's drawings is much less frequent than we are led to expect. Any art teacher will testify to this. Moreover, clinicians have accumulated drawings of house-tree-person by the thousands, both in colour and in pencil, and the artistically vivid productions are not many. We see clearly that the distribution of ability in this domain, as elsewhere, follows the bell-shaped curve. (1).

Reese outlines how creativity in music was traditionally seen as the domain of only a few:

We turn to the traditional composer—the authority, the expert—to provide us with music to substitute for our own lack of self-expression. As mere performers, we simply accept the dictates of the composer—repeating the music just as he tells us to. After all, he is the expert. He should know. We tend to define composition in terms of its highest reaches and ultimate skills thus making musical creativity inaccessible to most people. (2).

It is interesting to note how performance is viewed as a lesser art (although Swanwick) argues that a good performance can be said to have created the music. (3) Reese goes on to extol the virtues of new music in so far as it requires the performer to share in the creative process:

Composers of new music often create pieces that do not even require any special vocal

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or instrumental technique, such as Ben Johnston's *Four Do-it-yourself Pieces*. Many similar compositions have been written that are not just for specialists, for professional musicians but for absolutely anyone and everyone, anyone who can take the aesthetic attitude towards the events of life' (Ahlstrom 1971). (1)

He advocates the use of new music in the school music programme for this reason.

Treasa Marez Oyens gives an example of this too when she concludes:

One of my own works is particularly intended to set in motion student-performer's own creativity. It is thereby left to him to interpret symbols, to improvise, to make variations on the theme that has just been introduced, and, above all, to listen to fellow performers very carefully. For initiated students the work prevents no difficulty. But it has also been performed by children who have never before experienced anything of this sort. The choir consisted of some 40 children between 6 and 10 years of age; the instrumentalists varied between 10 and 20. There was from the outset a willingness to try something new, but there were also the expected initial embarrassments and hesitations. Yet, with a bit of encouragement to improvise along given lines, and with help from an enthusiastic professionalist, I could feel a growing appreciation of my expectations. I worked three afternoons with the whole group; I then made a recording of the work. It contained many imperfections but with more rehearsal most of them could have been avoided. Lest the assertive pleasure of participation be reduced through long drilling, I decided to leave it with its imperfections. (2)


The Problem of Originality

The question of how far everyone is potentially creative leads on to how far the product has to be novel or original to merit the label creative. Rogers' definition runs:

My definition, then, of the, creative process is that it is the emergence in action of a novel relational product, growing out of the uniqueness of the individual on the one hand, the materials, events, people or circumstances of his life on the other. (1)

And T. S. Eliot writes in *East Coker*:

There is, it seems to us, At best, only a limited value, In the knowledge derived from experience, The knowledge imposes a pattern and falsifies, For the pattern is new every moment, And every moment is a new and shocking, Valuation of all we have been. (2)

In this we see the tension between experience and newness. (It links back to the philosopher's writings in Chapter One.) In a conversation with a composer friend it was clear that her intention in composition was always to produce something new and original. White in his discussion of originality claims that only some free work is original:

Only that work which does not conform to conventional expectations in the way that the conventional drawing of the house did. Let us admit—without worrying too much over the criteria for conforming to conventional expectations that many young children's drawings are not original in this sense ...


In some ways such drawings resemble abstract paintings produced by adult artists: if one went only by what one saw, one might conceivably even mistake a child's drawing in some cases for an adult's. But there is an important difference between the two artists here. To say that both are producing something which is "different from conventional expectations" obscures the fact that the adult artist is reacting against conventional standards, while the child clearly is not. Originality in the case of the adult has written into it this intention - to produce something different-which in its turn implies a knowledge of what the conventional standards are. Unconventional children's drawings like the ones in Read's book, are not original in this sense, since the children who draw them have neither this intention nor this knowledge. (1)

Maxwell Davies sees some reputable composers missing the sense of being original when he writes:

Any musical 'freedom' must know from what it is supposed to be free, otherwise it can only be meaningless. We have, in advanced musical circles, the sorry sight of the extreme products of this misinterpretation of freedom, who, misunderstanding what is involved, betray freedom, either by imposing order in the consequent limitless chaos of musical possibilities by reducing the composition process to the realisation of predetermined formulae concerning pitch, note length, dynamics or, at the other extreme, of leaving the composition process to 'chance' elements, which process leads to musical meaninglessness, with the introduction of extra-musical stunts which are not even shocking, having no significance in any sense whatever. (2)


Maxwell Davies's point about needing to know from what you are free is important when assessing children's compositions. If a child cannot yet maintain a steady pulse on an instrument do we commend his composition for its free use of rhythm? Surely he is not free to choose the alternative and therefore he has not made a conscious decision to be free.

The solution to creativity being linked with originality is often seen as defining the newness of the product as new to the child. Glasser writes how a headmaster in Pershing School near Sacramento:

defines creativity carefully. He does not expect children to create great works of art, literature or music. To him the creative child is a child who discovers something on his own. The creative process is the discovery of something new to the child. He gets the same thrill as the original discoverer; a thrill which moves him to keep searching, to keep discovering. (1)

Piaget implies this too for he claimed that:

even in order to understand we have to invent, or that is, to reinvent because we can't start from the beginning again. But I would say that anything is only understood to the extent that it is reinvented. (2)

Taking up the same theme as that passage, Storr writes:

The child who links together two ideas in his mind which have hitherto been separated, and who produces a third as a result of the fusion .... has been creative in that he has produced for himself something which is new to him. (3)


It could be argued that this is true of any composition because of the infinite range of possibilities (of dynamics, for example) available in music.

Loane holds this view when he writes:

We have considered the suggestion that human consciousness is incalculably complex, and that it is to that complexity that music addresses itself. If this is so, then there are incalculably many aspects of consciousness to be understood. There is just so much to be discovered about conscious life, and moreover that conscious life lies so close to each of us (indeed, it is each of us), that every twelve-year-old, or sixteen-year-old, or eight-year-old, is perfectly able to embody in music, and so to understand and to "communicate", some special aspect of consciousness or feeling never before understood by anyone at all.

In all seriousness, I suggest that the composers of the pieces on the accompanying tape, and no doubt many other young composers in schools throughout the world, have revealed some small aspect of the possibilities of human living never previously revealed. Had they not composed it into these particular sounds, it would never have been revealed!

It must follow that work in class need not be a mere preparation for future artistic activity, although it is certainly that too. Children's work in music class can already be itself an act of artistic creation. (1)

Pickard struggles with the problem of newness to the individual versus newness to society:

This leads us to ask who is responsible for deciding what is to be regarded as creative. Are there any clear criteria for such decisions? Much creativity must go unrecognised. When a creative process leads to a creative outcome there has to be recognition and public approval of that outcome if it is

to exist in the consciousness of that group or society. Sometimes the public can be uncertain. Not everyone has appreciated the scribblings of the Picassos of this world and piles of bricks in art galleries have sometimes remained a puzzle. This raises the question: is creativity essentially subjective in that a particular reconstruction of reality is limited to the individual responsible for it? At its inception, at the point in time when it is newly understood, it may well be subjective to that perceiver. To the extent that there develops a shared understanding of this new construction of reality, it will become shared knowledge and more objective. However, creativity is necessarily shortlived. For a relatively brief time the new constructions of reality may hold the status of "creative" but eventually they will take their place in the heritage of knowledge as something "known". Depending upon their value to society, products may be handed down to the members of a culture within the socialisation process, and for many, these products once regarded as creative, will become knowledge which is learned and not something which is discovered for themselves. (1)

The pattern of new moving to something known is also a valid one of looking at the novel product in relation to the child's individual development. A piece, once new, becomes part of his experience and takes its place in his/her tonal memory.

The Criterion Problem

One real problem of defining creativity in terms of its products is that of the criteria on which the decision will be taken. Rogers (2) raises the possibility of 'good' and 'bad' creativity linking

those who find new ways to relieve pain and those who invent forms of torture together with Galileo and Copernicus who in their day were considered blasphemous and wicked. In general, however, 'creative' is often a value judgement. We talk about Dostoyevsky as a 'highly creative writer' when comparing him to a hack novelist. Hans Keller (1) (1966) talking about Mozart's symphonies talks about the composer's 'growing creativity' by which he means growing in terms of his contribution to the discipline of music. We talk about people and periods in a person's life as being more or less creative. White quotes this passage from Pears' book on Bertrand Russell:

He [Pears] traces the development of Russell's metaphysics and theory of knowledge during his great creative period from 1905 to 1919. In these fifteen years a considerable part of the history of philosophy was the history of the development of his ideas.

He points out how what the writer had in mind was the value or importance of Russell's work in this period. But the problem is: Who will make the value judgement?

Stein builds into his definition of creativity the notion of acceptance by a group:

It is suggested that the creative product is congruent with the needs or experiences of a group. It strikes a chord for the group as it does for the individual . . . .

Thus certain art works resonate with feelings while inventions resonate because they fulfil practical needs. In the case of art it could be pointed out that there is not always a one-to-one relationship between what the artist attempted to

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(1) Referred to in Plummeridge, C. op.cit.

express and what it resonated in the group ....... acceptance by a group is significant. It provides the creative worker with his final test of reality, if you wish. The size of the group may vary. At times it may be only those on the 'left bank', Greenwich Village or the small number of persons who first gathered around Freud or Einstein. In a classroom situation this group may be the class. Individuals may seek out the creative person. They may have to proselytise them. The group provides the individual with necessary feedback so that he can clarify, alter or make progress in his future work. (1)

Stein also concludes in his definition that this acceptance must be at some point in time to include artists like Van Gogh who were not considered creative in their own lifetime, or Socrates who died for his ideals. So Stein puts forward the idea that reputation is a good enough criterion.

The commonest criterion has been the frequency with which an individual has been mentioned in histories, biographical sources and encyclopedias. Castle (2) invented a weighting system whereby her eminent women were chosen by means of a weighted number of lines in six biographical and encyclopedic source books. And Lehman (3) chose his chemists for his survey based on the number of different histories of chemistry that cited each chemist's work. Another procedure is to accept the judgement of professionally qualified experts as did Roe (4) in her studies of eminent scientists. Another criterion is a


general consensus of opinion, as in Freud's choice of Leonardo Da Vinci (1920) and Dostoyevsky (1928) as subjects for study. Another criterion is rating by peers or superiors (C.W. Taylor). (1) Others used the ratings of votes of others regarded as qualified to make judgements like Cattell. (2) Some have based it on intelligence test scores and other studies of people who are in professionally creative spheres e.g. Rosen. (3) Some have used statistical definitions involving deviations in psychological tests e.g. Guilford, Christensen, Frick and Merrifield. (4) Quantity of output has been another criterion involving counting poems, novels, inventions, scientific contributions, patents and the like e.g. Rossman. (5) This is one partly discounted by Harmon (6) while Macpherson (7) recommends three sets of criteria-


(4) Guilford, Christensen, Frick and Merrifield, The Relations of Creative Thinking Aptitudes to Non-Personality Traits, Reports from the Psychological Laboratory, No.20, California, The University of California Press, December 1957, p. 51.


quick judgements of the scientist's creativity, application of an analytical scheme as well as a count of products.

The Gulbenkian Report *The Arts in Schools* (1) however, sees the test as being quality and quantity as in the case of J.S. Bach, Emily Bronte or Ernest Hemingway who would compare less favourably with Georgette Heyer if quantity alone were used. It concludes that the important attribute is consistency although it does raise the question of single masterpieces such as Reubke's *Sonata on the 49th Psalm*.

(It also lists context as another criterion for creativity by which it means according to the conventions and standards obtaining within the area of work concerned.)

In all these cases of criteria it would be possible to have a sliding scale of creativity as Terman proposes:

> We have at one extreme Dr Field's laboratory rats which required thousands of trials and a good part of their lives to learn to respond to triangularity in visual stimuli; that is, to acquire one crude concept. At the other extreme are the Newtons and the Aristotles. The intermediate levels range upward through infra-human intelligence, average human intelligence and the superior grades that permit higher and higher levels of abstraction. Any line that may be drawn to denote genius is purely arbitrary. (2).

Ghiselin distinguishes between the creative ('productive') act and the applicative ('reproductive') act:

> A creative product is intrinsically a configuration of the mind, a presentation of constellated meaning, which at the time of its appearance in the mind was new in

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the sense of being unique, without specific precedent. Any such configuration will be new in the totality of its aspect, in the constellation of its component elements....

He distinguishes creativity and inventiveness and resourcefulness and disputes the view whereby the creative product is judged according to its usefulness. He distinguishes two levels of creativity - a higher sort which alters the universe of meaning by introducing into it some new element of meaning or some new order of significance and a lower sort which gives further development to an established body of meaning through initiating some advance in its use. This links with Elliott's versions of creativity in Chapter One.

Assessment

The problem of assessing children's work is one of subjectivism. Are good and bad simply in the eye of the beholder? Society makes judgements as to great works of art but what about such lesser work as the children produce? If we call them creative does it just mean we approve of them? Loane teases out two meanings of subjective:

Sometimes a statement is called "subjective" because it is a value statement-it expresses an attitude of the subject and does not give information about the object. Sometimes, however, a statement is called "subjective" because it is relatively uncertain; the evidence for the assertion is held in some way less than watertight. (3)


He argues that assessment of children's work uses the second sense and may not use the first meaning at all:

Our understanding of a piece of music may have to be put forward tentatively, but it is real understanding nonetheless. Information of less than 100% probability remains information.

This discussion of aesthetic criteria could continue much longer but the problem of criteria is the central one to the teacher facilitating a creative approach in the classroom. Plummeridge(1) points out, bearing in mind the problem concerning criteria, the incongruity of having musical creativity directed by a non-specialist. This quotation from Warren Benson comes up with practical solution:

Self expression is encouraged when a child is allowed to make mistakes. We must be careful to criticize his work within the context of its musical expression rather than on the basis of our personal views of right art or wrong art. To criticize the work by saying "This is wrong ......... That is wrong ......... Here it is wrong" is to stop the flow of the creation and to interrupt the private intimate communication that the child is offering. It is much more effective to encourage the student to analyse the form and content of his own effort and that of others to establish whether it all belongs together; in this way he can see his errors as flaws in consistency or lapses of contextual relationships. Incomplete efforts, partially satisfactory statements of obscure definitions can be criticised constructively by asking for further development. For example "Let's see how you could develop that point a little bit more ......... Let's see what happens if you tried to carry that discussion a little bit further ......... Let's take a look at this example (by some composer such as Bach or Debussy) to see another way of doing it-it may suggest a way...

for you". All of these comments have suggested a need for further development or for clarity and emphasis; at the same time they have allowed the student to do it in his own way as a positive assignment rather than a positive correction. We must remember how difficult it is to say anything about art in terms of its being correct or incorrect. The works of the masters are magnificent examples of failures to abide by their own laws. The world of art is the world of exceptions. The world of art is the world of the exceptional. (1)

In the style of teaching advocated by Warren Benson, teacher and classmates are acting as judges of the creative product. I would submit that with younger children the teacher must assume this role and make her own decisions about the criteria that she will use. The role can gradually be handed over to the children.

Summary

How far then can the model of the creative process described in Ch. Two in adults be applied to children? It would seem that children do pass through various phases of development in creativity in the arts; and although the products of children appear to be creative the process is different. In Irving Taylor's levels children only progress through Expressive, Productive and Inventive levels while adults can move through the higher levels of Innovative and Emergentive. It may be true that children stop short at the hypothesis forming stage due to lack of skills and experience. The whole process could be different in so far as the pre-operational child has not sufficient grasp of reality to transform it. It may be different in that the

child cannot in the incubation phase revert to primary processes as that is where he is. Much debate has centred around the role of skills ranging from the view of Bentley and the Gulbenkian Report that to embark on composition activities without skill or technique is a nonsense, through the view that children will acquire the techniques as they go along and need them, to the more extreme end of Murray Schafer. Paynter stresses the need for 'something to say' being the pre-requisite for all creative work and asks for a healing in the split between 'creative' music making and the more traditional view of music education as skill learning. The child needs a basis of sound experiences upon which he can build up what Seashore calls 'tonal imagery' which the established composer must have in greater measure than the child. Swanwick casts doubts on the possibility of the creative process operating within a timetabled lesson in which children are called upon to be creative to order. It can be argued that there are stages in the process other than the inspirational flash which can be experienced. In some doubt also is the fact that everyone is universally musically creative. Writers are divided between those who see it as so, only the environment stopping people realising their talents and those like Guilford and Bentley for whom excellence is limited to a few. The problem is one of the notion of originality. A child's creation may appear original like an adult's but the underlying reason for it is different in so far as the adult is reacting against the conventions and the child is not. The problem of novelty is solved by some writers by defining it as 'new to the child' although this is a passing phase, as what is new to the child yesterday becomes known today and part of his tonal imagery. (The
same is true of the history of music.) Involved here is also the notion of good and bad products. This criterion problem has been solved in various ways—reputation, a consensus of opinion amongst judges, consistency and so on. It raises its head again in the assessment of children's work. Many writers favour the absence of good/bad judgements in creative work, although Plummeridge makes the difficulty for such decisions a reason for not using the non-specialist in this work in the classroom. Teacher and pupil can be involved in the evaluative process, the role gradually passing from teacher to pupil as the child gets older.
CHAPTER IV

CREATIVITY AND EDUCATION

The History: Musical Pioneers

It is often supposed that the idea of encouraging children to compose in so-called creative work is a new phenomenon and its very newness has made it seem a reason for its adoption on the grounds that new = good, old = bad. Although it is associated in the minds of many people with Carl Orff whose work started to find popularity in Britain in the 1950's, there are instances of previous music educators advocating it (although they may, of course, not have used the word 'creative' for it). Rousseau (1712-78) urged that children should make up songs themselves which he says gives them real knowledge of music. He favoured (in contradistinction to contemporary creative work) the use of simple clear-cut phrases founded on the most usual chords with an obvious bass and accompanied on the keyboard to help voice and ear.

Later followers of Curwen (1816-80) introduced melodic extemporization into his method. Pupils were asked to sing phrases to solfa, either spontaneously or in answer to a given phrase. Not only did they thus increase their powers of melodic invention but also crystallised their improvisations so that they might write them down easily. At a higher level they were encouraged to explore modulation and a second part to a given written part.
In the very early years of this century, Yorke-Trotter (1854-1934) was encouraging pupils to make up their own music and giving demonstrations of it. He believed that the creative instinct is a latent force in mankind, which can be the mainspring of a tremendous activity of the mind. And it was the development of this creative instinct which he wholeheartedly believed existed in all children (whether labelled 'talented' or not) that provided his unifying philosophy. He also exploited musical intuition. A young child's attention might be drawn to the rhythm of a phrase of simple chords but he would be unconsciously absorbing chordal usage and phrase balance. Soon he would be asked to sing an answering phrase but this was to be done without conscious thought. He stressed the necessity for the spontaneous response springing from intuition, unhampered by the very literal thought process, for he believed that this response was akin to the developed inspiration of the great composer. (This links with the writings on inspiration in Chapter Two and has important implications for music education.) Notation was seen as a way of perpetuating a child's idea; so this stress on creative development gave all theoretical teaching an important meaning. This sung response - sung, rather than played to ensure its absolute spontaneity - was the start of an important development, for it was followed by a played response by one hand at the piano and then the gradual inclusion of a bass. Each new chord (introduced aurally not by the book) was gradually absorbed into the child's musical vocabulary and used with freedom and growing artistic skill. In the end the child would be able to extemporise with taste and freedom. He, unlike many musicians of his day, saw the connection
between this ability to handle the musical language freely and other
musical activities like performing and listening, for the children
could now speak the language of Schubert, Beethoven and Brahms.
His disciples often unfortunately did not always speak the language
sufficiently well to develop fluency in other people or were too
academically trained to understand the freedom of his approach.
Walford Davies (1869-1941) in his writings and broadcasts in the 20's
and 30's was also encouraging children to compose music, indeed,
drawing their attention to the pentatonic scale.

Jacques-Dalcroze (1865-1950) worked in Switzerland and Germany
although the London School of Dalcroze Eurhythmics was founded in
1930. His approach to composition was very different from Yorke-
Trotter - being based on the muscular sensations of playing. His
system was based on three series of exercises which together involved
a study of rhythm, solfège and improvisations at the piano. The
rhythmic studies were aimed at awakening the feeling for bodily
rhythm and its aural perception; the solfège was designed to encourage
a sense of pitch, tone relations and ability to distinguish tone
quality. The piano improvisation was aimed at developing motor-
tactile consciousness enabling the student to interpret on the piano,
melodic, harmonic and rhythmic ideas. This improvisation, however,
was not offered to all students, (an example of composition being seen
as the province of a chosen few). It was a tackled when a back-
ground of the other activities had been acquired, (thus rooting
composition on a bedrock of experience as has already been seen in
Chapter Two). The student required a special technique allying
muscular sensations to emotional feelings. He provided exercises in
muscular contraction and decontraction and a study of scales, arpeggios and chord progression with regular accents and equal time measures, regular accents in unequal beats and with irregular and 'pathetic' accompaniments. At a second piano the teacher played scales in various rhythms and times which were imitated immediately by the student. The student was asked to use his muscular sense to study rhythm in space. With eyes closed s/he was to direct his/her arms to different parts of the keyboard and measure the distances between the points according to the greater or lesser amplitude in the muscular sensations s/he experienced. His/her faculty for mental hearing was encouraged by having to play only three parts of a four part chorale, following the fourth in the head. S/he was asked to change rhythms quickly and modulate at the point of the rhythm change. S/he used his voice to follow a melody played on the piano but on command was to create an entirely different melody or different rhythm. The two hands were also required to play with contrasts of rhythm, time, nuances, phrasing, dynamics or tone quality. S/he was asked to improvise a bar, notate it in figured bass, improvise a rhythmic accompaniment to vocal melodies and to accompany barred harmonic progressions. Finally s/he was to improvise freely at the piano conducted by a teacher or fellow student or two students were to improvise alternate sentences or phrases. A description of this is given in detail to show how much stress on skills and structure is given here compared with more modern 'creative' work.

Dr Justine Ward (b1879), the American music educationalist, in her method for all children from Upper Infant or Junior Level laid great stress on the original creative work of the child which she
conceived primarily in terms of vocal music. Free improvisation, musical conversations and composition were to form an integral part of each lesson from the very beginning and were to be adapted to the child's stage in musical development and knowledge. She wrote:

By original composition we mean something that the child himself creates out of the elements he possesses, just as he would build a house of blocks or put together a picture puzzle ...... Each child has a need for self expression and in music, such expression is a powerful aid to assimilation. We are not expecting teachers to turn out distinguished composers, but anyone can encourage and guide a tiny child in his desire to express himself musically .... The result will not be a masterpiece. We dare not hope for a class of little Mozart's. But every effort of the child is an essential part of his musical education. (1)

In the light of Chapter Three it is interesting to note that she saw it possible for anyone to help in this process, not necessarily a trained musician. She also viewed music as materials to be manipulated like blocks or a jigsaw, (which is returned to in Part Two), and saw it within the capacity of every child to manipulate sound materials.

Carl Orff (b1895) is the name most often associated with the beginning of the 'creative' movement. In his school in Munich he encouraged students to improvise and compose their own music on instruments that were easy to learn and handle. He constructed and had made pitched percussion instruments based on medieval and oriental

prototypes such as the xylophone, glockenspiel and metallophone modelled on the instruments of the Indonesian gamelan orchestras. He encouraged the use of the recorder and stringed instruments such as guitars, lutes, gambas and cellos (for plucked sounds mainly). From 1930 he brought out a series of printed collections - rhythmic and melodic pieces, exercises for hand-drums, timpani, tuned percussion, recorders, dances and instrumental movements - based on the improvisation that he encouraged in his school. Later he revised his scheme going back to simpler beginnings and with greater emphasis on song and the spoken word. He started from the descending minor third and moved through the pentatonic scale to a major scale with drone basses and tonic triads, adding then the dominant and subdominant ostinati and chords, the minor scale with drone basses, some triadic harmony and then subdominant and dominant harmonies in the minor mode. Creative work was encouraged throughout but it is structured within these concepts. So the Orff approach to creative work is more structured than much of what passes for 'creative' work in schools today.

The Other Arts

If the musical roots of the creative movement lie in the work of the educators described here, there are other and as important roots in the developments in the 1930's in art education and the other arts. Marion Richardson and Herbert Read led the art educators to a stress on what the individual had to say. She wrote in 1938 in an introduction to a children's art exhibition:
The artist discovers in the world around him (that is to say, in his raw materials) relationships, order, harmony - just as the musician finds these things in the world of sound. This cannot be done by the conscious, planned mind. Art is not an effort of will but a gift of grace-to the child, at least, the simplest and the most natural thing in the world. Whenever people are sincere and free, art can spring up. (1)

They saw education taking place through art without in any way destroying the values of art education. Children must be freely allowed to explore the materials.

Peter Slade developed similar ideas in drama starting like them from the real experience and using bodily movement and language for experiment:

One of the most important reasons for developing child drama in schools generally is not actually a therapeutic one but the ever more constructive one of prevention. Prevention of many things is provided by the general balancing process, discovery of personal rhythm and "playing out". (2)

He wrote in 1968 of the dynamic phenomenon of spontaneity as useful in all attitudes to life which links with the discussion of playfulness in Chapter Two. In his theory of play he considered two types of human activity:

1. Projected activity - the passive form of activity which infuses the mind into object, symbols, outside itself


and brings them to life. This is seen in organisation, government of others, three R's, crafts, painting and technical accomplishments.

2. Personal activity—the active forms of activity where a human being takes on personal responsibility for doing something being someone, indulging in accurate communication, using the whole body in an active physical sense, discovered in acting and dance. (1)

These ideas have been developed in the last fifty years and have more recently found expression in the 'creative' writing movement in the work of Sybil Marshall, Margaret Langdon and David Holbrook who wrote in Children's Writings that the process depends on whole experience .... that the writer is working in his inner world. (2) Their work was commended by the Plowden Report who found the amount and quality of children's writing:

perhaps the most dramatic of all revolutions in English teaching. Its essence is that much of it is personal .... and the writers are communicating something which has really engaged their minds and their imaginations. (3)


The 'Creative music making' Movement

Music education lagged behind the other arts in accepting these ideas. It was not really till the mid 60's that the ideas came to be worked out musically. Various factors encouraged this movement. Maxwell Davies's work at Cirencester Grammar School in helping children to compose was publicised and he pointed out parallels in art and music. In the early 60's came the impact of Orff instruments which put the raw material of music at the disposal of children in the same way as Marian Richardson had done in art long before. The instruments were easily playable and transportable and had a pitched component that the earlier percussion band instruments had lacked. (The chime bar introduced as far back as 1951 by the Rose Morris Company only gained its real popularity with the Orff instruments in the 60's.)

George Self was one of the pioneers in the early movement. He took a wider view of sound than traditional educationalists and sought to involve children in musical activities regardless of their background or aptitude. To this end he abandoned the idea that notational teaching was central to music education and encouraged children to invent their own instruments and pieces. He advocated work in groups and saw the child as a developing composer, performer, listener. He devised a new notation based on the acoustical properties of instruments e.g. sustaining instruments like violins of trombones would be notated: -- , instruments with a dying sound like piano or chime bars: = , staccato sounding instruments: * and
so on. Children could both realise the symbols and use them for their own pieces. He was followed by Brian Dennis in *Experimental Music in Schools* (1) In 1970 came a Department of Education and Science paper on *Creative Music in Schools* which stated:

In recent years the scope of music in school has broadened sufficiently to allow children's original music-making to occupy a more significant place alongside the traditional activities of choral singing, aural training, listening and instrumental playing. The idea that children should work creatively with the raw materials of music, as with those of the artist and poet, has been practicable through the increasing availability of classroom instruments of good quality, melodic and otherwise, which facilitate progress without undue preoccupation with technique. This report by a small group of HM Inspectors is an account of some of the ways in which creative music is being developed in both primary and secondary schools.

The phrase 'Creative Music' is here taken to have two aspects: through experiment children may discover the nature of sound and improvise their own music either individually or in groups; or they may take an existing melody and make an original arrangement of it for voices and instruments. (2)

It will be seen that, although this is based firmly on the sound educational principles of doing and knowing, this already narrows the field of 'creativity' in music to mean composing music rather than creativity in performing, for example. The paper advocated exploring sound in the early stages, extolled the virtues of the pentatonic scale

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and techniques such as rhythmic and melodic ostinato, drone, ground bass, canon, round, inversion, augmentation and diminution, working round a theme, graphic notation, integrating other orchestral instruments into the work and the handling of pop and jazz idioms. It had a separate section on modern music, advocating the introduction of jazz and ethnic, folk and pop elements into it and adding:

But creative music must also take account of the experiments of avant-garde composers: whole tone scales, modal harmony, polytonality, simple tone rows and note clusters can all be explored on tuned percussion instruments. By devising new ways of playing old instruments, inventing new instruments when necessary and incorporating tape recordings and simple electronics, students can begin to come to terms with new forms of composition and fresh systems of notation. (1)

It finished with a plea for rooms better designed for group creative work and a further look at the dilemma of the teacher:

The real educational dilemma facing the teacher is the extent to which he should offer help to individual groups: some of these may need constant guidance if they are to come to terms with the medium, whilst others will quickly organise themselves and produce work of striking quality. The teacher's role may thus change from instructor to consultant and collaborator. But the versatility demanded of him in devising projects involving language, drama, movement, the visual arts and social studies will constitute a new challenge ............ Through creative music it becomes possible for a majority of pupils of all ages and abilities to experience the deep satisfaction of participation- an activity too often in the past reserved for a small minority. Indeed the creative approach, with its opportunities

for improvisation, its more flexible use of rhythm and harmony and its generally less inhibited attitude to the interpretation of music can afford the ideal grounding for intelligent listening and artistic performance at any level.

Despite this last phrase the stress in the paper is on 'creativity' as composition. Certain other elements that have characterised the creative movement are also present. One is an emphasis on the idioms of the avant-garde - unusual sounds, unusual ways of playing traditional instruments. Another is the idea of 'integration', another 'in' word that is widely used and not very clearly defined. Paynter and Aston's 'Sound and Silence' also appeared in 1970 and not only gave great impetus to the creative movement but also included this statement on integration:

The liberal education we all wait for our children implies a breadth of understanding and experience that will be possible only when we make conscious efforts to remove the boundaries between subjects ..........

Music suffers from isolation in the curriculum; it has for so long been regarded as a highly specialised subject. In fact, it needs the other arts as much as they need it. If a team of teachers (art, movement, drama, English, music) work together with a class on one project, each will enrich the others. (1)

Projects they suggest are Music and Word, Music and Drama, Patterns in Nature and Theatre Piece.

Philosophical writings also influenced the movement especially those of Dewey (2) who held that aesthetic experience of music is closely


related to ordinary experience. The basis for artistic experience was the very rhythm of life - struggle/fulfilment, ebb/flow, tension/repose. Langer(1) focused on the 'feeling' aspect (not to be confused with emotion) rather than the cognitive aspect and saw its fullest expression in the rhythm patterns and symbols of art. Terms originate in her work that are now commonplace such as 'expressive' or 'creative' arts, a 'feeling' response and 'self realisation'. She influenced heavily the writings of Witkin(2) and Ross(3) who investigated the status of arts subjects in the secondary school curriculum and in a subsequent music curriculum project.

Creativity and the Music Curriculum

In the discussion document produced by H.M. Inspectorate in 1975 called Music 5-13(4) composition activities take their place at all stages alongside performing and listening. It is now called composition although activities called "creative" are included in other headings as well. For example, in the five to eight year stage under Working with instruments comes:

The childrens' first experiences of musical instruments are likely to be exploratory and experimental; working as individuals, they

can be helped to devise the necessary techniques to produce the sounds that attract them.

In the eleven to thirteen years stage there is a separate section entitled **Musical Exploration** which describes work exploring such concepts as:

- the pentatonic scale, the practical harmonisation of simple folk melodies with two or more chords, the production of atmospheric "sound pictures" ...... the possibilities of the major and minor scales, the whole tone scale and even the twelve tone row, improvising or embellishing the melody over a simple ground bass ...... and the twelve bar blues.

The **Composing** section follows this and calls for the basing of original compositions on these techniques and the desirability of 'a fairly high degree of structure', increasing involvement of responsibility of the pupil and the importance of a 'period of evaluation and self-assessment'. In the two previous stages the links with the other arts are mentioned. In the five to eight stage comes the sentence: **Sometimes this work can form part of the classroom activities such as when children compose simple tunes for songs and dances as part of the class play;** and in the eight to eleven stage is the statement: **If the music is linked with dance, drama, poetry or painting, this will often extend the imaginative approach.**

In analysing the nature of the creative music making movement, Swanwick is worried by the assumptions that go with the term that have not necessarily anything to do with the word 'creative', namely:

- A premium on imaginative activities,
- an emphasis on children making up their own music, sympathy
with the techniques of the avant-garde, an urge to integrate. (1)

He criticises the use of the word as being value-laden (as indeed has already been seen in other spheres as well) and as a kind of umbrella and cure-all. Indeed, an article like Walker's starts off with the very worst of this approach:

The teacher of class music in schools is beset by a number of serious problems. In many ways they are no worse than those faced by any other subject teacher, but in some circumstances they can be much more difficult to overcome and they can be made worse by the very nature of music, the demands it makes on the participant and the attitude of the teacher. (2)

He then goes on to outline his 'creative music' solution to these problems. It seems very dangerous to base an adoption of creative music making methods on the premise that there are too many problems in the traditional approach. If it is worth getting children to make up their own compositions it must be on a securer footing than that 'nothing else works'.

Creative music has also been viewed as primarily for the less able not for those who would succeed at traditional skills. Paynter refutes this, as does Addison who points out that:

there are children, I believe, who are being left out or who at any rate are under-achieving because


of the very skills in music which they acquire. I refer to children who learn musical instruments 'properly'. Attitudes are many and different, but any of the following is common enough:

a) learning to play an instrument is something you do "from the music". You never play without the music, except scales and arpeggios (because the exams say you must). Even memorising is discouraged.

b) experimenting is all right for "the others" but we only play "proper" music.

c) we only use xylos and glocks, or percussion for "creative". "Real" instruments are for "real music".

Common to all these attitudes is the fundamental idea that there is a difference between "the real" and "the creative". That is why I, and so many others, are suspicious of the word "creative".

He goes on to outline his Durham Junior Music School where children learning an instrument can go and compose.

LeFanu also questions the use of the term 'creative': "The A-stream are doing Grade V Theory and some will go to do O-level music. The B-stream are doing creative music and won't take music next year." (2) Having outlined how some of her most exciting lessons have been a whole afternoons with two teachers and sixty children in a project combining music and drama and dance, she offers her own definition:


Creative music making means, to me, a way of teaching musicianship at any level. It means a way of training ears and trains intelligence in a way of exploring and sharing the physical sensation of music making. Faced with a class of say, middle-class children, I feel that my first responsibility is to give them the means for acquiring those skills and disciplines which will enable them to be practical musicians. Ears, fingers, intelligence and imagination must be trained to work together in a way that no other school subject can develop. I believe that this is realised most appropriately through the creative approach. Similarly, I see no point in children learning rudiments or elementary harmony, if they do not understand the concepts behind them: If their ears cannot follow the implications of what they are learning. I would urge all teachers to try teaching theory through the creative experience; separating the two seems to be missing the point of both.

She goes on to describe an imaginative and sensitive approach to O-level teaching and to a class of students at Morley College. She indicates how the experience of composition improved their performance of more traditional styles. (In this she parallels the findings of Yorke-Trotter.)

Those musical journeys on which I took my class never undermine our love of eighteenth and nineteenth century music; on the contrary, they intensify our understanding and experience of it. At the same time, the class have to appreciate the unfamiliar (contemporary music, for example) with trust and open mindedness. Should they choose to go into the musical profession they will have a good contribution to make; and whatever they become, I think they all understand why composing is a necessary complement to playing and listening. All have experienced that crucial journey into their own imagination.
Indeed Horton supports this view:

The view taken by those who face this
dilemma is that a balance can and should
be found between performance and listening
on one hand and invention and discovery on
the other, and that, these two aspects are
educationally and artistically complementary
each helping and enriching the other ......
As far as English schools are concerned,
there seems little question that the creative
approach is most successful where performance
and listening are well established and are
continued side by side with improvisatory
methods. (1)

This is a point taken up by Swanwick when he calls for a
redefinition of creative to include work in a variety of idioms and
to include imaginative ways of approaching other aspects of music.
He quotes Vaughan Williams who said that Boult 'created' the second
movement of his Fourth Symphony and this passage from Copland on
the subject of the gifted listener (which can be compared with a
passage from a sixth form pupil in Chapter Three of Part Two):

Nothing really tells him what he should
be hearing, no treatise or chart or guide
can ever sufficiently pull together the
various strands of a complex piece of
music-only the inrushing floodlight of
one's own imagination can do that.
Recognising the beautiful in an abstract
art like music partakes somewhat of a
minor miracle; each time it happens I
remain slightly incredulous. (2)

This process is described by Kris as the reverse of the artist's
creative process:

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The reaction of the public repeats in reverse order and in infinite variations some of the processes which the artist experienced. These variations are determined by cultural and social factors as well as by individual predispositions. Though these reactions may vary in depth, the core of the process, the gradual moving from fringe to centre, seems to occur with great frequency .......

[This] means that gradually a change in attitude of the audience is taking place.

This change may have various dimensions. It may lead from the borrowed fantasy stage to the appreciation of the complexity of composition, from what is being said to how it is being said and here again from the pleasure in rhythm to a gradual understanding of first one, then many interacting and integrated meanings. These changes have one factor in common. They are all changes involving the movement of the audience from passivity to activity. In the end the audience may experience some of the excitement and find the release of tension which arises when barriers separating unconscious from pre-conscious or conscious processes have been loosened. (1)

Composition and Improvisation

There is one other definition of terms used in this work that needs clarifying before we pass to an examination of how this quality of imagination can be allowed to operate freely in the classroom.

Bagenal starts by outlining how children can make a 'creative' choice over the instrumentation:

Could we not take creativity a step further and give the children a chance to compose their own music in the forms of medieval or renaissance or early baroque composers used? (1)

She then describes how to add drones and ostinati to existing tunes. However, she feels the need to qualify it, by saying:

This sort of activity is strictly speaking improvisation rather than composition and it could be extended with able pupils into the improvisation of variations or divisions on a simple dance tune ...... This again is not strictly composing, it is just choosing one of a number of a conventional alternatives but so is a great deal of jazz improvisation and it is a beginning, a way of getting used to the feeling of taking off on your own.

She goes on to emphasize the importance of the down beat in improvisation quoting the example of the Ladybirds who specialise in pop backing:

If it is an a capella (no music) thing they're given a down beat and and they improvise. She seems to have a sliding scale in mind by which you measure how much composition is involved in any given activity when she says:

Moving closer towards actual composition in an early music idiom one can provide a ground, such as Passamezzo Antico ...... and with help proportionate to their ability children can learn to compose their own divisions upon it.

So here she finds it necessary to distinguish between improvisation and composition (although both seem to fall under the banner of 'some creative approaches') but she finds it difficult. It would

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seem that improvisation in her view is concerned with the 'one-off' creation that can't necessarily be repeated whereas composition involves repeating and refining.

Maxwell Davies writes of improvisation:

The very first step to composition is improvisation. Composition, after all, is much slowed down and chewed over improvisation. I used it very early with the school orchestra. A set of pieces I wrote in the early 1960s has the following section where the accompanying instruments have a chord sequence, and the soloists improvise on the notes of those chords, using them as main notes, and adding passing notes. In this way they complete the composition process I started. (1)

And Gamble writes:

The use of the term "creative" in music education is very ambiguous; it can mean anything from crude self-expression, exploration, or experiment, to improvisation or even interpretation in performance. Its meaning ought to be restricted simply to the making of an original sound object, an organised pattern of sounds, made with the intention that it should be listened to as a complete aesthetic object worthy of attention. Of course, self expression, exploration, experiment, improvisation, and performance may all play a part in the creation of a "composition", but none of these alone can, strictly speaking, constitute musical creativity. Many of the activities listed in the syllabus cannot therefore be called "creative" in this sense; they are, however, preparatory (and essential) to creative work. (2)


Chisholm(1) makes the point that much eastern music is improvised, the composer being the performer and that contemporary composers are using performers more as composers, giving them ideas and then leaving them free (a point made in Chapter Three).

In the creations of my children I can distinguish both elements mixed together in varying degrees. The work is only sometimes written down and even when it is, the final product contains improvisatory elements although these are within a preordained, worked-out structure. The improvisatory element is often in the way the parts fit together or in the rhythm used for a certain pattern of notes. Younger children can seldom repeat their first ideas exactly, so each new repetition is in a sense a new piece although with elements of the original idea present. I regard both composition and improvisation as part of creative work.

The Conditions for Creativity: General Principles

Piaget outlines the optimum conditions for learning:

Children should be able to do their own experimenting and their own research. Teachers of course, can guide them by providing appropriate material, but the essential thing is that in order for a child to understand something, he must construct it himself, he must reinvent it. Every time we teach a child something, we keep him from inventing it himself. On the other hand that which we are allowing him to discover himself will remain with him visibly, as it did in the case of my mathematician friend, for the rest of his life. (2)


Demos and Cowan\(^{(1)}\) list the following steps or phases in those furthering student creativity - inspiration, stimulation, amelioration (an atmosphere of warmth and affection), direction and encouragement and development.

The Creative Classroom Environment

Hickok and Smith\(^{(2)}\) make a comprehensive list of the basic principles of creative teaching which will serve as a basis for this section. They are drawn from the issues already discussed in this part and reinforce many of them.

1. **In creative teaching something new, different or unique results.** Each individual's creation will be different from anyone else's, each interpretation of his or her experience will be different or unique. This has already been discussed and Torrance\(^{(3)}\) asks the teacher to develop a tolerance of new ideas and of creative personality and not be annoyed by the unusual.

2. **In creative teaching, divergent thinking processes are stressed.** This is in contradistinction to the stress laid traditionally in education on convergent techniques which is usually called


intelligence. In music this stress has been seen in skill training.

Paynter writes:

The convergent procedures of training are most like to come to mind first. They have an immediate attraction in that the teacher can define skills to be learned and when the period of training is completed it is relatively easy to devise tests to show whether or not pupils have acquired what was prescribed. The divergent process on the other hand, is much more of a problem, and difficult to assess satisfactorily. Jean Piaget suggests that education should enable us to do new things—not simply repeat what other generations have done. It should develop the explorer—the discoverer in all of us. (1)

He goes on to describe how training in skills in the music classroom caters for only a minority of pupils and concludes:

As far as music in schools is concerned, it would seem necessary to accept a distinction between musical education and music in education. The former term would describe adequately the training essential for anyone who is to follow a musical career. But music in education suggests something much broader—the use of music in the general school curriculum in such a way that it can make a significant contribution to the education of all pupils .... In this context artistic activities which offer the greatest scope for the majority of pupils to develop their innate sensitivity, inventiveness and imagination might have strong claim for a place of importance in the curriculum.

3. In creative teaching, motivational tensions are a prerequisite to the creative process; the process serves as a tension relieving agent. Torrance\(^{(1)}\) calls this creating "thorns in the flesh", creating the disturbance that, as has already been seen, some writers regard as the motivating force behind creative action. He advises the teacher never to ridicule questions, however unusual they may seem.

Weisskopf sees teachers as traditionally promoting industry, regular study habits, and a critical controlled attitude which form part of the first and last stages of the creative process—preparation and verification—neglecting the incubation and illumination stages because of their dependence on unconscious material:

Just as lightning represents the sudden explosive merging of positive and negative electricity, intellectual insight may represent the sudden merging of conscious content accumulated during the stage of preparation with unconscious repressed material.\(^{(2)}\)

Students are taught to exert control, to keep impulses repressed rather than:

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\text{teaching them to make their impulses subservient to intellectual activity ... By de-emotionalising intellectuality ... we suffocate creativity.}
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\(^{(1)}\) Op. cit.

\(^{(2)}\) Weisskopf, E.A., Some Comments Concerning the Role of Education in the 'Creation of Creation', *Journal of Educational Psychology* XLII, 1951, pp. 185 – 89.
A teacher must stimulate children to compose with the same things that motivate any composer:

Personal experiences, things seen and heard (including other works of art—literature, poetry, paintings, sculpture), events of national and international importance past and present, sounds themselves, structures and patterns. (1)

Paynter goes on to say that music will either be about its own materials or a response to something outside itself, with the proviso that the success of the music depends on the coherence of the sound pattern alone, whatever inspired it.

4. In creative teaching, open ended situations are utilised. The one great difference between lessons which develop convergent and divergent thinking processes is that in the former the lesson ends when the knowledge is learned, while in the latter a situation is provided in which the newly acquired knowledge is put to work to solve a problem. The acquisition of knowledge begins the divergent thought process. Paynter writes of the need to look at evidence and weigh things up, then take small imaginative leaps, taking decisions and acting on them:

A teacher must be prepared for the unexpected; must be ready to follow up leads the pupils themselves offer. (2)

Wehner reinforces the point:

We teachers need constant self-examination to find out if we are flexible enough to change our direction easily when the situation warrants or if we are bound by a single set of dogmatic values. If our students feel the need to move musically in a way that disagrees with a dogma we teachers have accepted we must be prepared to change. (1)

Auerbach was against the slavish pursuit of themes or finished products in the nursery school which:

may leave no freedom of choice, permit no selection of alternatives and make the child's daily routine rigid. This emphasis can teach the child the inappropriateness of combining activities and of trying to develop new skill levels. If the child is left to develop his own resources in the context of a relaxed and minimally structured environment, he will eventually perform the creative act. As the child becomes flexible in utilising new skills, he develops not an approach of "I do not know" but an approach of "I will give it a try" because of the possibility of the successful completion of the creative act. (2)

Torrance also sees as an obstacle in teaching the overrating of the finished product:

the finished poem, the masterpiece of music or art, the balanced interpersonal relationship, the organised behaviour of the championship team, and the like. (3)


He also asks the teacher to dispel awe of masterpieces and take time:

to show in detail the methods the artist or author used .... If a child is shown how a masterpiece is developed step by step, he will stop thinking of it as something beyond his reach and will gain confidence that he too can do some original work.

5. In creative teaching there comes a time when the teacher withdraws and the children find the unknown themselves. At this moment the teacher and the children, in a sense, change roles. The teacher, in building high motivational tensions is the planner, the leader, the guide and the producer. However, at one point in the lesson s/he withdraws from this role and the children spurred on by these tensions become the planners, the guiders and the producers.

Much has been written about the role of the teacher in creative work. Paynter calls him/her an enabler and Murphy writes:

Music is one more activity which can offer scope for creativity. The teacher must have a very special outlook for this kind of work. He must be content almost to restrict his role to organising .......... he must provide the springboard from which the child jumps into musical creativity. He can, in fact, do more in joining in with the children's improvisations and by showing them how to explore their own ideas than by suggesting ideas which would possibly have a narrowing effect. (1)

Torrance(2) asks the teacher to encourage the habit of working out the full implications of ideas. A child should at first be encouraged

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to do some of the tedious work involved in working it out himself and later submit his work to the standard tests of science, art and literature and the like.

The Gulbenkian report spells out the problems for the teacher:

The role of the teacher in the arts is at once vital and complicated. The teacher is not simply to let anything happen in the name of self expression or creativity. Neither is it to impose rigid structures of ideas and methods upon the children. The need is for a difficult balance of freedom and authority. (1)

Other writers stress the importance of the relationship between pupil and teacher. Moustakas asks the teacher to be concerned with the experience undergone, the process of being oneself and with passing on his or her commitment to the activity in question:

It is necessary that the individual at whatever level of education, be confronted by resources, issues and problems which are meaningful and relevant to him. It is essential that the teacher hold an unyielding and deep trust in the child as a person of value with capacities and talents which, when free to be expressive will eventuate in positive and constructive experience. If we trust the capacity of the individual for developing his own potentiality, then we can permit him the opportunity to choose his own way in learning. It is important that the teacher be a real person - enthusiastic, sad, angry, joyful, calm, excited, stand out in an honest way with the range of feelings that differentiates the living person from the mechanical role player. It is essential the teacher prize the child as a person, be aware of and value his feelings and thoughts, convey genuine understanding based on the child's perceptions, and accept his tempo

and pace, his way of perceiving and relating to the life of the classroom. It is also important that the teacher provide resources. (1)

6. In creative teaching, exact outcomes are unpredictable. No teacher will know the outcome of the lesson (unlike a convergent thinking lessons). S/he may have some ideas for development but needs to let each individual find his/her own resolution, feeding in such things as other people's handling on a similar theme in the way of listening material, for example. Maxwell Davies writes:

In watching and helping work like this to grow the teacher should forget all he knows from his own experience which is irrelevant to the situation in hand, and participate in the discovery of possibilities with the composer; any pre-conceived idea as to what the work should eventually encompass must be forgotten. (2)

He does also in the quotation in Chapter Three illustrate well how and when to introduce the established composers tackling the same problem.

There is also the phenomenon of the 'happy accident' that often occurs in this work. In a group of children working on a piece originally based on the alternation of a D minor and a C major chord, the guitarist forgot to change the chord giving the 'accident' of a C in the tune against a D minor chord. The group so liked this


that the effect was retained as a feature of the piece. Indeed, Schafer claims such a basis for developments in musical style:

Perhaps some of the most striking musical devices may be the result of the limitations of human intelligence, rather than inspiration. For instance, it is commonly assumed that organum (the singing in parallel fourths and fifths) came into existence when certain members of the singing group mispitched the notes of plainchant. Similarly, it is conceivable that the canon came into existence when certain voices lagged behind lead voices. If this is true, we might conclude that organum was the invention of the tone deaf while canon was the invention of the slow learner. (1)

Certainly children discover both the devices in this way.

7. In creative teaching, conditions must be set which make possible preconscious thinking. Torrance (2) talks of the necessity of providing active and quiet periods, pointing to the previously discussed accounts of how periods of quiet and relaxation are conducive to creative thought because of the importance of the subconscious. The problem of returning to primary processes in early childhood has already been discussed in Chapter Three. However, it is possible to encourage a more intuitive mode of thought in the older child. Paynter writes:

And for all its music's intellectual content it is ultimately one of those non-verbal intuitive areas of experience which help to characterise or individualise

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and which open doors on a totally different kind of "knowing" not dependent on received information. In such experiences lie the clues to individual self-realisation and fulfilment and it is this that the arts offer; something not covered by any other aspect of the school curriculum. (1)

Part of the process is the reassembling of past experiences in a new order. A tendency to get children to verbalise about their activity too soon will destroy this mode of thinking.

8. Creative teaching means that students are encouraged to develop and generate their own ideas. The highly creative child is often regarded as 'silly' or 'crazy' for disregarding the logical and orderly. A boy exhibits feminine ideas, only to be ridiculed. A highly creative child in the class may be a problem for the teacher and pupils.

Torrance (2) stresses the need to teach the highly creative individual skills for avoiding peer sanctions so that he will not have to exist as a miserable deviate in the shadow of his more athletic and socially adept peers. It looks as though a certain degree of alienation is inevitable. He refers to Stein as he writes:

Help the highly creative child to maintain his assertiveness without being hostile and aggressive. He must be aware of his superiors, peers, and subordinates as persons. He may work alone but he must not be isolated; withdrawn or uncommunicative. In the classroom he must be congenial but not sociable; outside the classroom he must be sociable but not


intimate. He must "know his place" without being timid, submissive or acquiescent and must "speak his mind" without being domineering. In all relationships he must be sincere, honest, purposeful and diplomatic. In the intellectual area, he must be broad without being "bookish" or "too scientific" and "sharp" without being overcritical.

9. In creative teaching, difference, uniqueness, individuality and originality are stressed and rewarded. In this way the creative process is self-generating. In Chapters One and Two the problems involved in originality and novelty were discussed.

10. In creative teaching the process is an important as the product. Much has already been said about this in Chapter Two. Torrance\(^1\) asks the teacher to teach the child to value his creative thinking, helping him to appreciate his imagination not excessive day-dreaming. One way of doing this he suggests is getting him to write ideas in a notebook which he calls the 'idea trap' habit.

11. In creative tasks certain conditions must be set to permit creativity to operate. The classroom must have the physical conditions of a learning laboratory. Torrance\(^2\) stresses the importance of allowing the young child to play around with objects and ideas and of making them sensitive to environmental stimuli. He adds that different people will be sensitive to different stimuli - a person needs to be sensitive to human feelings to be creative in personal relationships, to chemical phenomena if he wants to be a chemist. This links with Chapter Two on the role of skills in the process.

\(^1\) Op.cit.
and the need for experience in a particular medium. Such materials as are required should be made available to the child.

Often the space available for music is far from ideal and in the 1960's I designed a music room with booths suitable for creative work. Clearly as much sound making equipment including record and tape should be available. It should be like the progressive kindergarten of Hawkins:

Here there was not only a style of teaching that involved children deeply in subject matter, but the subject matter grew with the style—water, sand, clay, paint, good infant literature, the cultivation of story and song, carpentry, lenses, prisms, magnets, blocks, the house of packing boxes and orange creates, soil and seed, the dance and all the rest. I do not believe that this tradition failed at all; its influence has been reduced by erosion (sometimes to the vanishing point), by pressures from thin mechanical programmes of "reading readiness," "number experience" and the like, most of which tend to reduce the very readiness they seek to cultivate. (1)

Auerbach (2) advocates materials in the nursery school being grouped according to function rather than structure so that blocks are in the doll's corner to make a house outline, painting materials nearby to make a mother's costume. Such patterns of unusual things next to one another could apply to the music laboratory.


Noise is also involved in music and is inevitable in composition work. Maxwell Davies writes of children composing incidental music for Peter Pan:

There was a frightful noise, and I have noticed that when children are composing in a group, it is like an Art Room, they do not seem to mind if other people are busily engaged in the same activity round about. They can only, it seems, hear the thing they themselves are actually on - if they are knocking on a glockenspiel, and someone is knocking the guts out of the xylophone next door, they hear their own glockenspiel only. The poor teacher has to suffer. You cannot do it too often if you wish to retain your sanity. (1)

12. Creative teaching is success rather than failure oriented. Excessive early evaluation will be construed as disapproval and block the process. The principle of 'deferred judgement' should be used - no evaluation until all the ideas are out. In the process there will be success and failure but the failure must be seen as constructive, as leading to a new solution. Paynter writes of the process:

Fundamentally it is a matter of having something to say, finding the right materials to express it and experimenting with them - selecting and rejecting, contrasting and complementing - until the medium (whatever it is, sound, paint, etc.) is under control. It will involve trial and error and probably a number of false starts. We cannot expect that everything will work out speedily, painlessly and exactly as we want at the first attempt, or that there will never be any need to retrace our steps ...............
It requires patience and, to some extent, there is a built in element of failure. Things can go very wrong, so that we have to begin again. (1)

Maxwell Davies writes how carefully he has to be in evaluating pieces concluding:

Really, you have to go very carefully because if you say something injurious, you might do more injury than you think you are doing. I cannot emphasize that enough, because I am sure that the state of composition among young people generally, even at College level, is largely due to their not being encouraged enough and people trying to make them conform to standards which they are just not capable of understanding, or which they, sometimes quite justifiably, consider to be absolutely irrelevant to their own needs of expression. (2)

So this process must all the while be supported by encouragement. It has already been seen how in the incubation phase of the creative process the mature artist has to suspend his evaluative powers. This passage about the young Grieg illustrates this well:

No doubt the dramatic, hot-tempered Edward Grieg felt like running away from the whole business after he had his first piano lesson. Was it to get this experience that he had been sent away from home by Ole Bull?

Close to the piano was a stout bald-headed man with his right forefinger under his ear didactically repeating 'Immer langsam, stark, hochheber, langsam, stark, hochheber ........' (Ever slow, strong, lift high, slow, strong, lift high ....)

It was that occasion that started the bitterness that Grieg always felt towards the conservatory at Leipzig. We hear it from his lips several times. Once he writes to his friend, Julius Röntgen, complaining about his lack of technique in composition: "For this, however, I have not only myself to blame but above all the damned Leipzig Conservatory where I definitely learned nothing at all ........"

The one teacher who got Edward Grieg's devotion and love was the old Moritz Hauptmann. The young man, transplanted on to foreign ground, was always longing for kindness. From the moment that Hauptmann said to Edward Grieg that they were to be good friends Grieg was willing to die for him.

Charming and of tender humour is the picture that Edward Grieg gives as of his old master, who, because of his illness, gave his lessons at his home, the Thomas School, the old lodgings of Bach. He was sitting on his sofa in dressing gown and skull-cap, spectacles on his nose, and, while the yellow-brown sap of snuff dropped from his nose down into Edward Grieg's practice book, he made his delicate comments bearing witness to the power of his mind. The sixteen-year old boy was composing and when Hauptmann nodded his old head and said "Sehr schön, sehr musikalisch" ("Very beautiful, very musical"), Edward Grieg knew that he had made a good start on the way that is the road of the arts. (1)

Loane makes some excellent points about teacher assessment. He describes three phases:

(1) Quoted in Ross, M., op.cit. p. 15.
Firstly, the teacher attends to the pupils' music as a receptive and open-minded audience-listener. It is in sound that pupils have embodied their musical thinking, and it is only by sharing that thinking in our own musical experience that we can come to know anything about it at all.

Secondly, the teacher reflects on that audience-listening experience, along lines perhaps similar to the discussions in this article, in order to identify explicitly what is musically important in the piece. Our discussion of the taped examples suggested that each piece had its own successes and failures, and that the relative importance of various possible criteria of success and failure (for example, rhythmic synchrony? tonal adventurousness? 'correct' resolution of discord?) differed from piece to piece. We might conclude that every piece of music generates its own criteria of success and failure. If so, then only this kind of reflection on a particular composition can begin to reveal the specific criteria of success and failure which that piece creates.

There should be no surprise or embarrassment if different teacher's assessments differ to some extent (although there should certainly be both if they are consistently contradictory!). This is not because our response to music is in some way mystic or ineffable, but because it is hugely complex. So any explicit account of response to music must address only part of the complex whole. Two different music teachers may well articulate insight into a different aspect of the child composer's musical totality ......

Thirdly, the teacher selects among his or her insights those which it seems important to communicate with the pupils (or, in special cases, to commit to written records, or to pass on to parents). He or she seeks to identify and point out successes, so that the pupils may know that their work is respected and valued, so that a technique stumbled upon by good chance may become a skill regularly usable, and (perhaps) so that the ideas of one small group may be shared with the rest of the class. He or she may seek to identify
and point out failures, and so direct the pupils' attention to ways of overcoming them.

If, as we suggested, the success of a musical achievement transcends any verbal account of it, then the assessment of the musical achievement must be permanently provisional and open-ended. It is possible for even the most sensitive teacher to "miss the point" from time to time. This implies that the identification of failure in pupils' music might be communicated in the form "x made me wonder because .... I wonder what you might feel about yourselves. Try x₁........ Try x₂ ...... Try x₃ .... Try some more ideas of your own, listen and decide which is best." Rather than the form "x was wrong!" Looked at in this way, assessment is not only a sort of knowing - it is also a sort of communication, in fact a sort of interaction.

Further, it seems that the teacher's communication of his or her assessment must be selective, for three reasons. Firstly there is not likely to be enough time to think things out fully, let alone share that thinking with the pupils during the white heat of the classroom lesson! Secondly, some of what we discern in pupils' music might be disturbing to them if discussed aloud. Especially in their songs, pupils may articulate very private concerns under the cloak of artistic objectivity, and it is not for us to lift that cloak. Thirdly, in any event, making our analysis explicit to the pupils is but a means to the end of further elaboration of musical experience itself. No one could doubt that the selection of points to raise aloud must be made with that objective firmly in view.

Assessment in the sense outlined here consists of comparing a pupil's achievement with that pupil's needs and interests, as revealed in the music he or she creates. (1)

13. In creative teaching provision is made both to learn many knowledges and skills and to apply these knowledges and skills in new problem-solving situations. The importance of skills have already been discussed in Chapter Two.

14. In creative teaching self-initiated learning is encouraged. Discovery is, as has already been seen, an early stage in the development of creative thinking. Without it no 'tonal imagery' can develop. Marsh writes:

Thus it is possible to take a body of subject matter that seems essential to an understanding and true appreciation of music, and organise learning experiences by which the students may 'discover' concepts considered vital. If the processes of learning are truly creative, the concepts which are formulated may not always be those anticipated by the teacher, but they will be related to the total discipline. (1)

Grieg describes his earliest discoveries in the field of sound:

What a rest for thought to follow memory back to the first early dawn of morning. And why not go right back? Why not begin with remembering the marvellous mystic satisfaction achieved by reaching one's arms up to the piano and finding - not a melody. Far from it! No-it had to be a harmony. First a third-then a triad, then a fourth, and, at last -with both hands to help-Oh glorious! A fifth, a chord of the ninth. When I had found them out my delight knew no bounds. That was a triumph! No later one has been able to intoxicate me like that one. I must have been about five years old then. A year later I was given lessons in piano playing by my mother. (2)


(2) Quoted in Paynter, J., op.cit.
15. In creative teaching, skills of constructive criticism and evaluation skills are developed. Evaluation has already been seen as part of the creative process but it must not appear too soon. Lasker\(^{(1)}\) describes how weakness can be turned into strength by evaluation and fragments of a composer's work are performed and discussed in the classroom. Class assessment of compositions can be very helpful.

16. In creative teaching, ideas are manipulated and explored.

17. Creative teaching involves democratic processes. Each individual has unique contribution. Often the compositions are collective works and the individual contribution has to take its place in alongside the contributions of others. Group music making offers special opportunities for group decision-making (unlike many of the other arts) and demands great sensitivity to other people.

There is some discussion as to whether individuals should work individually or in groups. There is much to be said for both methods. Taylor and Block write on the solution of problems in technology:

Should group or individual work come first on problems requiring creative thinking when equal time is devoted to each? The conclusion may now be amended to read: No evidence is available that it makes any difference in number of ideas produced whether group or individual work comes first. However, more ideas are produced by a given number of individuals working

in a group, regardless of whether individual work comes before or after group work. (1)

This may, of course, not necessarily be the same for musical group work when a group of children is required to try out the ideas. However, in the group situation it is often one child (the leader) whose ideas are being tried out and it is the teacher's job to see that over a period of time various children get a turn at leading. This is not to say that a leader in group work should be designated. It is a question of the teacher being sensitive to the dynamics operating in the groups.

18. In creative teaching methods are used unique to the development of creativity. In these Hickok and Smith (2) list deferred judgement (already discussed), brainstorming (a technique to encourage the flow of ideas that could be developed in musical work) and creative ideation which includes the following techniques: adaptation (new words to old tunes), new uses (new ways of producing sounds), modification (a variety of products around a single idea), magnification (making a tune longer or repeating it or playing it louder or emphasizing some parts), minification (the opposite of magnification), substitution (trying out new instrumentations, for

(1) Taylor, D. W., and Block, C. H., Should group or individual work come first on problems requiring creative thinking when equal time is devoted to each? Dept. of Industrial Administration and Dept. of Psychology, Yale University, New Haven, 1957, Technical Report, p. 29.

example), combining (putting two ideas together), rearrangement (changing the structure of the form or parts to make it more aesthetic), reversing (inverting a tune or playing a rhythm backwards).

Torrance(1) adds to this that children should be given information about the creative process—the preparation, illumination, experimentation model being most favoured. Research showed that with the exception of first and fifth graders children could be given a set of principles to enable them to think creatively. The problem in the first three grades was the sheer number of ideas produced; they did not seem to need the encouragement that adults needed to produce a quantity of ideas.

Summary

The idea of encouraging pupils to compose is not new in music education. Rousseau mentioned it in the eighteenth century and later Curwen. Yorke-Trotter developed it at some length, particularly vocal improvisation, and stressed the need for spontaneity. Dalcroze included piano improvisation as the last in his three skills, following rhythm and solfège. Justine Ward, working from the basis that all children are musically creative, included improvised song from the very beginning of her scheme for upper infants and juniors. Orff's approach to it was very structured and although he invented the easily played classroom pitched percussion, he also included song. The work of Marion Richardson and Herbert Read in encouraging

children's free expression in art, Peter Slade in drama and Sybil Marshall, Margaret Langdon and David Holbrook in creative writing all influenced music education. It was in the 60's that the idea of creative music making came to the fore with the arrival of the Orff classroom pitched percussion instruments, Maxwell Davies' work at Cirencester Grammar School and the writings of George Self and Brian Dennis. In 1970 came the DES paper Creative Music in Schools in which various strands were apparent - the use of the term 'creative' primarily for composition type activities, the fact that the work had affinities with work of avant-garde composers and that it often included integration with the other arts. Paynter and Aston's Sound and Silence appeared in the same year with similar strands apparent. The philosophers Dewey and Langer also had a great influence. But some teachers regarded it only as the solution to the problem of difficult classes and not for the most able who could cope with traditional academic courses or for those learning 'proper' instruments, creative work being linked with classroom percussion. Swanwick recommended the extension of the term 'creative' to include imaginative approaches to other aspects of music as well. Hickok and Smith make a comprehensive list supported by many other music educationalists of the ideal conditions for creative music teaching. These include the encouraging of new results, divergent thinking (so that music in education is more than the training in the skills apparent in musical education), the resolution of emotional tensions (although here a distinction must be made between music education and therapy), open-endedness, the change in the role of the teacher to allow children free exploration, respect for children,
intuitive thinking, the encouragement of the children's own ideas, the valuing of uniqueness, individuality and originality, better physical conditions in the building of specially planned rooms, secure psychological conditions, the late introduction of evaluation, the utilisation of skills, self-initiated learning and constructive criticism.

Summary of the Part One

Certain strands of thought have run through it. The first is that there are two interlinked concepts of creativity - the traditional one linked to divine inspiration and later modified to include self-development and the more modern linked to problem-solving and new inventions. They are linked by qualities such as imagination, originality and the creation of something of value.

It is postulated that all are creative. Some writers see a scale stretching from the rare quality of original genius to ordinary everyday inventiveness that is exercised by everyone in their ordinary lives. Links can then be made between artists and ordinary people which have implications for education in the development of some sort of general creative capacity. This view of creativity is disputed by some writers who hold that it is specific to certain disciplines and not a general mental energy. While certain skills and information in a particular field are necessary for any work of great value, there are common features among creative people in many spheres. This capacity is related to intelligence but while highly creative people are always intelligent, intelligent people are not necessarily creative. It is measured not by intelligence
tests but by a number of so-called creativity tests, although is not certain whether these tests in childhood predict a creative adult. The creative process is a complex one, differing in degree, level and length in children of various ages and adults and the unconscious plays a significant part in it. It is akin to the problem-solving process. Rigidity, lack of flexibility, an emphasis on conformity and too rapid evaluation hinder the process and knowledge, skills, experience and information are required. Although these will be rudimentary at first, high levels of creativity are not reached without them.

So creative work involves a creator, a process, a product and an environment that encourages it. It must in some way be novel, original, different. This can be new to the person creating it or new to the world. It might also be a new combination of existing elements. It could also be an extension or elaboration of what exists already such as in the performing arts - an actor creating part or a performing musician using the work of a composer. Although the process may involve elements of chance, conscious and deliberate activity is also involved.

In the second part of the thesis children's compositions will be examined in some detail in an attempt to chart the development of their creative process. The model proposed encompasses many of the ideas set out in this part. These links will be examined in more detail in Chapter Two of Part Two.