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THE RISE AND FALL OF THE EXPERIMENTAL STYLE OF THE BEATLES

The Life Span of Stylistic Periods in Music

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Tiivistelmä - Abstract

Tutkielma käsittelee Beatles-yhtyeen kokeilevan tyylin elinkaarta, eli tyylin "nousua ja tuhoa". Käsitettä lähestytään tyylin ja tyylipiirteiden hahmottamisen kannalta kognitiivisen musiikkitieteen näkökulmasta. Itse elinkaari pohjautuu tyylipiirteiden määrän tilastolliseen jakaumaan, jonka Gjerdingen (1988) on esittänyt klassisen ajan vaihtosävelskeemaa koskevien tulosten perusteella. Niiden mukaan piirteet asettuvat eräänlaiseen normaalijakauman muunnokseen, joka toimii tässä työssä mallina tyylin normatiivisesta elinkaaresta. Tutkimuksen tarkoitus on soveltaa mallia erilaiseen materiaaliin ja aikaväliin. Beatles-yhtyeen kokeilevan kauden (1965-67) musiikki tarjoaa selkeän kohteen tämän ilmiön tutkimiselle, joskin muita yhtyeen tyylikausia tarkastellaan tyylillisen kehityksen esille saamiseksi.

Tutkimuksessa määriteltiin ensin Beatles-yhtyeen tyylikaudet ja eriteltiin ne luonteenomaisiksi tyylipiirteiksi. Tyylipiirteet käsittelivät lähinnä soitinnusta, sanoitusta, mutta joukossa oli myös melodisrytmisiä motiiveja. Piirteiden esiintymiset rekisteröitiin yhtyeen koko tuotannosta, käsittäen vuosina 1962-70 virallisesti julkaistut laulut, ja saatuja tilastollisia jakaumia verrattiin elinkaaren malliin. Tietyistä kokeilevan kauden tyylipiirteistä tutkittiin tarkemmin niiden syntyyn ja käyttöön vaikuttaneita erilaisia ja yhteisiä tekijöitä. Lisäksi eri tyylikausien prototyyppisten laulujen avulla tuloksia verrattiin yleiseen tietämykseen Beatles-yhtyeen musiikista.

Hypoteesi tyylin normatiivisesta elinkaaresta sai tukea Beatles-yhtyeen kokeilevan kauden kohdalla niin yksittäisten piirteiden kuin niiden yhteenvedon kautta. Varhaisvaiheen kohdalla jakauma oli lähes päinvastainen, ja lisäksi ilmeni, kuinka eri tyylikaudet kulkevat toistensa kanssa limittäin. Kokonaisuudessaan piirteiden jakaumien kuvaajat havainnollistivat yhteen musiikillista uraa hyvin ja sopivat myös yhteen yhtyeen jäsenten omien käsitysten kanssa. Tilastollista luotettavuutta arvioitiin puolitusmenetelmällä sekä vertaamalla keskihajonnan ja otosmäärään osuuksia. Yhteys tyylikausien ja tyylipiirteiden välillä ei ollut ainoastaan määrällinen, vaan myös laadullinen, mikä havaittiin niin tyylipiirteissä kuin laulujen prototyyppisyydessäkin.

Tulosten merkittävyys koskee lähinnä Beatles-yhtyeen musiikillisen uran jaottelemista, mutta tulokset saattavat kertoa yleisemminkin musiikin tyylikausien hahmottamisesta. Vaikka musiikin tekeminen on monimutkaisempi prosessi kuin miten tässä työssä sitä on käsitelty, tarjoaa tyylin elinkaaren käsite kuitenkin aineksia historiallisia prosesseja kuvaavaan selitysmalliin.

Asiasanat

Beatles, elinkaari, musiikinhistoria, tyylikausi, periodi, tyyli, prototyyppi

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ABSTRACT

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The rise-and-fall pattern in historical periodizations was studied in the music of the Beatles. The life span of style refers to the population of stylistic features across time, which is according to Gjerdingen (1988), close to a normal statistical distribution, modified by memory. His hypothesis is based on the cognitive theory where abstractions, such as typicality, direct the perception of the periods, and specifically, on a large survey of classical music, which is used here as the normative life span of style. The goal of this study was to apply it to music of a different period and time range. The experimental period (1965-67) of the Beatles provided an ideal material for the study, although their other periods were also studied to outline the change.

First I defined the musical periods of the Beatles and separated them into meaningful stylistic features, supported by literature. Then I registered every occurrence of the features across the Beatles' recording career (1962-70) and compared the resulting statistical distributions to the normative life span. Some features of the experimental period were examined in detail for their origins, usages and shared histories before the periods were studied as a whole. Finally the results were connected back to the concrete musical level by finding and comparing the prototypical songs with the common knowledge.

The hypothesis for the normative life span of style was strongly supported both by the individual examinations and the sum of the features of the experimental period. The early period exhibited the opposite correlation to the normative life span, which did not conflict with the hypothesis but illuminated the overlap of the periods and the Beatles' whole career in conjunction with the songwriters' own comments. The prototypical songs found reinforced the connection between the typicality and the population, and the validity of the stylistic features. Statistical reliability was tested by reviewing the standard deviations and population sizes, and the split-half method supported the integrity of the periods.

The rise and fall of the Beatles' experimental style displayed a normative life span despite the difference in time scale and material. However, the results should be generalized cautiously, because the creation and the periodization of musical styles are governed by complex factors, but for the analysis of style and a historical point of view the results and the concept of life span may offer a plausible system of outlining historical processes.

Key words: Beatles, life span, music history, period, style, prototype

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1 INTRODUCTION

There was a period when everything was going up and rose, then suddenly it reached that point when it started to go down; it seems like everything goes in cycles.

George Harrison's summary of the Beatles' career in 1995.¹

The knowledge of the musical styles is essential for the analysis and appreciation of the musical works. This knowledge is "encoded" into the different stylistic features which the listener inherently knows if he is familiar with the style. In cognitive musicology the attention has been focused on the perception and the learning of these features. However, in critical analysis we need to know how an individual work relates to the style it is part of. Style periods and style itself are both hierarchical concepts and it is possible to concentrate on any hierarchic level on the analysis of style or style periods. According to established custom, the style periods themselves are often divided into further periods, usually distinguishing three. These concepts help remembering and understanding, although we know that they are abstract constructs and precise borders between the periods are hard to define: Periods have variable life spans, which are often implicitly known to have an organic development, a "rise-and-fall" pattern. It is a common expression to note how a style is born, reaches its peak or maturity and finally becomes obsolete and dies. Though reasoning such as this is often based on the nineteenth century ideology, it might plausibly outline historical processes on a certain level as seen in most stylistic histories and periodizations of music. This might be due to the way we categorize data about the historical change, as Robert Gjerdingen points out (1988). He demonstrated this by an extensive research on a

¹ The Beatles Anthology, documentary for television, part 3/4. (Apple production, 1995).

middle-ground level musical schema and its chronological distribution. However, little attention has been focused on providing further evidence for the analysis of style change using features based on cognitive concepts. The results in this area need to be replicated using several stylistic features and the question how they contribute to the style must also be considered. Therefore, the goal of the present study was to apply the model of the distribution of the features based on Gjerdingen's results to a different type of music from a different period and even to a different time range. The hypothesis was that the normative life span of stylistic features would be close to a normal distribution modified by the memory, the periods would overlap each other and could be comprehended through typical examples.

The Beatles is indisputably a fine example of a creative group that had many novel ideas and achieved a major stylistic development in their music. The literature which deals with the Beatles often divides their career into three periods and summarizes them and the career as a rise and fall. This characterization describes their career well, beginning from the early sixties, when this Liverpudlian group started to rise to worldwide fame and conquered the world, till the end of the decade, when the band fell apart. Beyond the obvious question whether their music and its development will follow a similar pattern of change - the rise and fall and a division into three -, it is reasonable to question if these novel ideas of one period distribute similarly as proposed in the historical study of one stylistic feature. In trying to determine the shape, namely, the chronological distribution of the features of one period, it is necessary to concentrate on a period that is notable for the innovations. Many novel ideas were realized by the Beatles in 1965-68, which has been named their experimental period. The early period, 1962-65, is the foundation against which the new ideas are evident and the late period was between 1968-70. Studying all these periods enable us to demonstrate how consecutive style periods work. However, defining these periods by dates is not easy, not often even possible, which should also become apparent in this study. The viewpoint of the chronological change is a natural and suitable one for the study of the Beatles' music, because their stylistic change - from teenage rock 'n' roll to psychedelic rock - is apparent and well-known. First they played rock & roll and British variants of it and gradually they started to lead their music and the lyrics into a new direction. From the year 1965 onwards the subjects of the songs changed and features previously unheard in rock were incorporated in their music, making it more complex. These novel ideas were for example different instrumentations, sound-effects, unusual chord progressions and irregular rhythms. Thus their musical career comprises of a traditional period, from which they headed towards an experimental period, until they created a synthesis of the previous periods in their last two albums (late period). This whole development, especially the experimental period, is according to many observers among the most influencing and significant ones in the popular music of the last five decades and therefore offers a rich and interesting premises for the study of the chronological aspect of the style.

1.1 Earlier research

The music of the Beatles has always been - and still is - a great source of interest and has produced volumes of books. In the following, these are considered from the popular to the scientific literature.

The popular literature, from which the most notable areas for the research of music are biographies, is very heterogenous. Different opinions based on the taste, journalistic approach or sensational aspects permeate the articles or books in one way or another. Nonetheless, the stylistic development of the Beatles and their career are often described using a rise-and-fall metaphor (for example the time around 1967 is mostly characterized as a "peak -period"), but the explanations for them vary from the drug usage to personal crisis and the changes in the society. Partly responsible for the plethora of interpretations are the Beatles themselves. John Lennon and Paul McCartney, who wrote most of the Beatles' songs, gave especially in the late sixties and early seventies conflicting comments about their work. In brief, the comments need to be verified from several sources and some sources are known to be more reliable (See Heinonen 1994, 153-154, for full account of the source criticism of the interview material). Despite the above-mentioned problems, biographies compile information from several sources. Hunter Davies's (1968), Philip

Norman's (1981), Chet Flippo's (1988), Pete Shotton's (Shotton & Schaffner 1983) and Ray Coleman's (1984 & 1995) biographies are held as the most important ones, but there are also other good references. George Martin's biography (Martin & Hornsby 1979) and his book, The Making of Sgt Pepper (Martin & Pearson 1994) illuminates his role as the Beatles' musical aid and arranger (also Denyer 1985a & 1985b). Information about the songwriting the band members gave in interviews, which were originally conducted and published by newspapers or magazines. Exceptional in this regard is the interview John Lennon gave to Playboy magazine (Ed. Sheff 1981a & Sheff 1981b) where he candidly summarized the Beatles' career. Most of the interviews are available as compilations or reprints (Cott 1968; Miles 1969, 1978 & 1995; Wenner 1971a & 1971b). William Dowlding (1989), Steve Turner (1994) and Mark Hertsgaard (1995) have all collected details and commentaries by the Beatles from a great number of various references, some of which are nowadays hard to come by, listing the information song by song. Mark Lewisohn has meticulously reported with the cooperation of the record company EMI and Apple everything the Beatles did in the studio (1988) and elsewhere (1990). Sulpy & Schweighardt (1994) have documented the last moments of the Beatles based on the "Get Back" tapes. There are also general analyses of their music, merit-deserving ones are at least Robertson's (1990) and MacDonald's (1994), both illuminate the cultural situation of the sixties at the same time.

During the last decades musicological research has covered more popular music and the music of the Beatles has of course received a great deal of attention. The oldest of them (Mellers 1973) uses the terms and the values of the art music in their analysis. Walter Everett (1986) examines remembrance and fantasy as thematical elements in some of the Beatles' songs. He has also used the schenkerian analysis (1987) as has Steven Porter, whose dissertation (1979) is about the rhythm and harmony in the music of the Beatles. English musicologists Middleton (1990) and Moore (1993) consider briefly the music of the Beatles in their books where they try to devise new ways of analyzing popular music. Also good summaries of the Beatles' music are the articles of Stuessy (1994) and Marcus (1992). Finnish musicologist Yrjö Heinonen has applied the songwriting and recording process of the Beatles to the general model of the compositional process (1995b). That work is based on the articles that deal with the music of the Beatles from the abstract and

concrete models (1992a) to the typical writing and recording process (1994) and to the songwriting as a part of coping with the inner conflicts (1995a). The study also takes a broad view of the Beatles' creative process and the factors that contributed to it covering the personal and musical influences and the external factors therefore outlining their different stylistic periods.

The concept of style has often been a subject of interest in the musicological writing. Leonard B. Meyer's influence has been great in all notions concerning style and style change. The nature and the level of stylistic change has often been the object of analytical pondering (Narmour, Treitler, Rosen, Ratner). Although and maybe because the musical styles tend to change continuously, there is no (and possibly cannot be) uniform way of explaining how the style changes. Even if the romantic concept about the organic growth has been overtaken by more scientific methods and language, those ideas have remained in common usage, as seen in history textbooks, where history and musical styles are divided into early, middle, and late (mature) periods or style-frames. This division is often very illuminating in explaining music and has been partially covered in scientific writing. The overlapping nature of (often) three periods has been presented by Michael Broyles (1987) and a similar idea has also been put forward by Leo Treitler (1989, 90-94) and with some reservations and concerning changes only on a smaller scale by Meyer (1989, 101). Although the change in history is continuous, the notion of organic development, namely, a rise-and-fall pattern is often associated with the periods. Gjerdingen argues that it "is due to the way in which human intelligence abstracts stable categories" (1988, 99). He has established with empirical material the chronological distribution of a stylistic feature. The reasons for a certain type of deviation of the distribution are explained by simple cognitive factors and the results are used here as the model for the normative life span of style.

Although the music of the Beatles has been dealt with in musicological literature, to my knowledge, the perspective of the stylistic change has not been used. The research of the Beatles' music concentrates usually on specific questions, but does not deal with the stylistic development any more than is necessary. The exception is Porter's (1978) dissertation, which is basically a style history dealing systematically with the different stylistic parameters, but he is satisfied in reporting the parameters of Beatles' music album by

album. However, he did not draw any conclusions about their stylistic development that might, nevertheless, have been problematic, considering that his analyses were based on the American publications of the Beatles' records, which differ notably from the original, European publication order, which is closer to the Beatles' recording schedule. Also, the way he has defined the parameters is also problematic, particularly when he maintains that the songs have a lot of jazz rhythms and Indian scales. Although Heinonen (1995b) summarizes the ideological situation behind the different periods and lists the stylistic features of the Beatles' three periods, he does not concentrate on following the Beatles' career through the individual features.

1.2 The aim of this study

The objective of this study was to outline the organic nature of the style by using systematical methods and concentrating on the connection between the stylistic periods (mainly the experimental) of the Beatles and the existing model for the life span of the style period. This meant using and synthesizing existing theories for the theoretical framework and having an exact and justified classification of style and stylistic features, retaining the original recording order of songs and demonstrating the change by using quantitative methods. Concerning the Beatles and their stylistic change, my aim was not to include all the possible stylistic components of their music, but the essential features in order to bring out the life span of a style. The quantitative part of the study, based on the qualitative methods (selection and analysis of the style features), entailed arranging the features according to their chronological distribution and comparing them to the model. The model in this case was adopted from the previously mentioned Gjerdingen's study, termed here as the normative life span of style, even though it concerns only one stylistic feature. Although the focus was on one period, it was necessary to study the stylistic features of other periods, the Beatles' early and late style period, to outline the change. Therefore it was also possible to summarize to some extent the whole musical career of the Beatles, their three periods, on the basis of the results. The results were finally connected back to the concrete musical level, literature and qualitative analysis by using the concept of the prototype. In a way it measured the validity: How well the features chosen represented the Beatles' songs and the periods, when compared with the general knowledge of those facts.

2 THEORETICAL FOUNDATION

The history of music and style periods within it are often described as George Harrison characterized the experimental period of the Beatles in the opening motto, using words like "rise" until "after a point it started to go down". This rise and fall, how the literature about the Beatles often portrays their career, appears to be a suitable expression for the Beatles' music considering how their recording career is characterized. Their most influencing album, *Sgt. Pepper*, which came out in 1967, is often regarded as a peak in the history of popular music. Critics have held it as an all-time best album and as a summary on how the music of the Beatles had evolved so far. After that album, most critics, including the Beatles themselves, thought that the following years were all downhill until the band's official dissolution in 1970 (Marcus 1992, 216; Wenner 1971a, 105; Garbarini, Cullman & Graustark 1980, 71; Martin & Pearson 1994, 76, 159). Thus rise and fall characterizes their music and career in a general way.

To find out about this musical development in a musicological way, one has to compare their early period to the experimental period, as the comparison makes the style change apparent. This is achieved by first unraveling the music of the style periods into separate stylistic features, representing the periods in the best possible way, and being meaningful units of the analysis at the same time and covering all the necessary aspects of music. However, this comparison tells *what* has changed and not *why* it has changed. The analysis of style history must also consider how stylistic features are used. Therefore, a question only briefly discussed in this study will be why the novel ideas were invented in the first place, where they came from and what influenced their use. The aim in this work,

¹ For example Riley 1987, 268; MacDonald 1994, Turner 1994, 15.

however, is mainly to verify the shape of one style period that may help us to understand the periodic nature of styles and the process of style change in a better way.

There are plenty of examples how consecutive styles have lived and died to act as a general basis for evolutionary historical processes in our western tradition, but a more precise view of this abstract construct will be obtained after defining the key terms of these processes and concepts in music.

2.1 Style

According to Meyer "the foundation on which the understanding, appreciation, and evaluation of works of art must rest, is a sense of style" (1989, 36). Styles or style periods are arranged by uniform traits or aspects, that is, style analysis begins with classification of these replicated features (Meyer 1989, 39). These traits or features are a replication of certain choices and patterns, and the task of the style analysis is to recognize the significant from their opposite, fortuitous aspects of style (Meyer 1989, 39, 65; Moore 1993, 171-172; Pascall 1981; Treitler 1989, 70; Ratner 1980, 9). Treitler (1989, 72) implies that there are also normative aspects of style, which may be detected in every work belonging to that style. For instance, in rock music the basic beat might be considered a normative aspect that belongs to all different styles of rock music, and the key of the song is the fortuitous aspect and the melody and the lyrics might be the significant aspect of the style.

The first problem encountered in the analysis of a style is that there is not any set definition for the different traits, features or aspects in different musical styles. Therefore they have to be defined corresponding to the style in question and the analytical needs. At the most elementary level music is divided into basic components, such as rhythm, texture, melody, harmony and form (Meyer 1973, 7; LaRue 1970, 3; Pascall 1981, 316; Shuker

1994, 135), which usually either alone or combined in variable ways form stylistic features.¹ These are perceived as meaningful units, taking into account the experience of the listener. In cognitive psychology these units are called schemata.

Schemata can be defined as "meaningful sets of features" (Gjerdingen 1988, 6) or as "abstract representations about the regular patterns of the environment, which can range from the abstract to the concrete" (Gaver & Mandler 1987, 264-266). For example, the timbre is perceived as a relatively simple parameter, although it consists of multiple features and a changing-note schema, which is perceived as one feature in a certain musical style, is a combination of a melodic pattern (1-7...4-3) with harmonic and melodic progression in the bass, which could be defined as stylistic features in their own right in another style. In effect, low-level features select a higher level schema (top-down) or higher-level schema directs the search for lower -level features (bottom-up). For instance, we might recognize Richard Wagner's work by hearing the music played by a full Romantic orchestra with modulations, leitmotifs and a certain degree of chromaticism. On the other hand we might except to hear those same stylistic features when told to listen to Wagner's music, supposing that we are already familiar with his style. In that sense, combined set of features, schemata, direct our perception in the form of typical and representative examples (Mandler 1984, 105).

Schemata have been observed to have psychological reality and have also been found useful in perception of music. In style analysis, schemata are a reliable way of distinguishing the change, because they are relatively permanent - although carried out in different ways as style changes - and quite easily discovered (Meyer 1989, 51).² If the aim is to examine one musical work, it is sufficient to note how the features differ in that work from the style it belongs to. However, style analysis focuses on common elements or

¹ Meyer has proposed a division into primary parameters (governed by syntactic constraints) and secondary parameters (non-segmentable) but questions, such as where for example the texture belongs to, are problematic (1989, 14-15).

² Meyer uses the term *archetypal pattern* in addition to - and meaning - schema (1973, 213-214) Eugene Narmour's equivalent of the same term is *style structure* (Narmour 1977, 174).

differences in all the works in that style.³ In this study these concepts are used to illuminate the way features are perceived and defined; features can consist of multiple parameters which create together meaningful units. These units will vary here in their abstraction level and therefore will not be defined precisely as schemata, but as stylistic features - called in the quantitative section as parameters.² The features which I choose are based on the musicological literature about the Beatles and on something the songwriters themselves have said and distinguished. This approach ensures that the features are indeed meaningful units and that way serve as a validitation for the features.

2.1.1 Style change

According to Meyer style most often and primarily changes because of the external constraints, first of all caused by ideology and thus affecting the parameters of action (politics, economics, social arrangements) (Meyer 1989, 99-100; also Moore 1993, 57). Internal factors such as the personality of the composer, stylistic circumstances and embodied expectations, where Meyer's main body of work lies, also play a major part in style change. Expectations and breaking them have been explained as being the source of change. Ethnomusicologists explain that "common human psychological motivations have often been overemphasized as reasons for change or stability in music. . . . While humans appreciate the security of continuity, they also crave the excitement of variety" (Kaemmer 1993, 180). Cognitive research in musicology has provided similar conclusions explaining the reasons for change from the viewpoint of perception; it is necessary to alter formulated schemata in order to surprise the listener (Dowling & Harwood 1986, 224) and therefore novelty is deemed as a positive value only to a certain extent (Gaver & Mandler 1987, see

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¹ Corresponds to Narmour's (1977, 174-175) division into "external" vantage point in style analysis, which is more of an ethnomusicological way of study. The "Internal" vantage point equals the analysis of style history and it enables to view the relationships between different periods.

² This resembles feature list approach rather than network approach of schema definition. Approach is, however, similar to that Meyer uses when he lists the salient features of Wagner's style (1989, 44-48). According to him, this method illuminates any style, composer, culture, epoch or hierarchic level (1989, 48).

also Hargreaves 1986, 113-115, 116-122; Hargreaves & North 1995). This change or evolution usually leads into more complexity (Meyer 1967, 122-125), and there are natural limits to this tendency, although it does not mean improvement in the sense of one style would be better than another.

The need for variety can also be detected at a cultural level. Alan Merriam's definition for cultural change is where the impetus for the style change comes from within a culture, it is "called innovation and while external change is associated with the processes of acculturation" (Merriam 1964, 303). He stresses that individuals initiate the change, and the innovation must be spread around to reach other people and gain their acceptance (ibid., 303-304; also Kaemmer 1993, 179). Researches of classical music, Meyer for example, have defined the change taking place similarly on a level of the composer, although he stresses the importance of the ideology. The change is the result of innovators whose ideas come either within the tradition (exploiting potential possibilities) or outside the tradition (formulation of new possibilities) (Meyer 1980, 179-180; see also Meyer 1989). Heinonen (1992b, 237) has elaborated the same process adopting the terms based on decision-making theories (conservative and innovative composing strategy). Consequently, internal and external constraints mentioned first affect highly on what kind of strategy the composer has (Meyer 1989, 122; Heinonen 1995b, 37-38).

As change and novelty have mainly been positive values in art in our Western culture, there has mostly been a style change of some sort (Meyer 1967, 217; Kaemmer 1993, 172). General reasons for the change were discussed above but the actual process of change cannot be "continuous improvement or evolution to a higher form" as romantic philosophy would have it. A more contemporary view of the change is articulated as an alternation between a period of stability and a period of revolution - convention versus invention (Heiniö 1984). This is also close to how Thomas Kuhn (1962) proposes that the process of scientific progress is made. Although Kuhn's influencing work is definitely not an art theory, the nature of change is analogous to the change in art and in many other human activities (Kuhn 1970, 208). In Kuhn's theory the established tradition (paradigm)

¹ Meyer remarks that complexity is *usually* lacking from the popular music (1967, 32-33), although in my opinion complexity is as valid a notion for some stylistic trends of popular music as for Western art music in general.

faces anomalies which lead to a crisis or revolution, creating in the end a new tradition. When applied to musical styles, convention or tradition is the formal and recognized musical style and innovative ideas - in the form of new style features - not belonging to the convention may often lead into a crisis of the tradition. After a period of revolution caused by new ideas presented by composers, a new tradition emerges.

Although the process outlined above is a continuous one, historians attempt to divide it into distinct periods to understand it better, and the results of this are the rigid style periods we know and are taught about in the history of music.

2.1.2 Style periods

Historians attempt to classify history into divisions and stages, this dates back to eighteenth-century and the age of rationalism (Allen 1939, 85). Although logical continuity between stages, phases and periods cannot always be shown, it is still necessary to be able to divide the history into them (Meyer 1967, 93). In examining them, it is possible to concentrate on any hierarchic level, from one composer's singular style period to epochs that can last for centuries (Pascall 1981; Narmour 1977, 171; Meyer 1989, 38). In this sense, the word period, which is preferred here rather than its synonyms phase or stage, applies equally to any level; as Treitler articulates (1989, 145): "Period" measures the length of time during which the implications of a style continue to be felt - its "reverberation time". Therefore I will use the term period here as synonymous with phase or stage. Often style periods have general names depending on the hierarchic level scrutinized and sometimes they have individual names.

A period in any level can create a stylistic whole if it represents a range or series of possibilities defined by a group of particular examples but generally three levels in the periodical hierarchy are separated. Triune division has a long history (Allen 1939, 91, 264). It is commonly used and abstract enough to serve as a basis for different hierarchical levels of periods. The hierarchic levels distinguished here are: a large style historical period (cultural level), epochal style period and personal style or the career of a composer. On any hierarchical level the style changes as in the previously described way - convention and

invention alternating in turns - one style having typically three phases or frames within it. Heinonen has described how the progress takes place on the highest hierarchic level conveying also the organic nature of the change (1995b, 41): "The progress of culture can be characterized by the phases of its rise-, blossom- and fall, and the rise of a culture usually overlaps with the fall of the previous culture." Large style historical periods, such as baroque or classicism, are prime examples of a process such as this, and they are also divided similarly into three individual periods. In this second hierarchical level (epochal style period) the terms are usually early, full, and late period (Meyer 1989, 101; also 1967, 118-119). Good examples of these are Late Baroque, Early Renaissance, or individually named periods such as Sturm und Drang - being part of the (full) classicism that reached its highpoint in the 1770s (NGD, 1981, 311). The terms for the phases within epochal style periods are often explained by there being an experimenting phase (early period) until the choices become solid (full period) till they are enhanced and they will become more complex (late period) (Pascall 1981, 319). During the time of complexity there might be another style aiming for a simpler expression on the rise, reminding of the reasons and limitations for style change described earlier. In this way, also remembering the change is a relatively continuous one, it is natural that periods overlap, as evident in the citation above about the change in a cultural level.

These epochs are the result of works made by several individual composers, but it is also possible to take the division further to the level of the composers and to his or her career. At the lowest hierarchical level the division is basically the same as a process, but the terms used are slightly different. The tradition is learned first, namely, an imitative (early) period, then a creative or an experimental period and last comes a mature period (Gardner 1973, 262-263; Heinonen 1995b, 42; Meyer 1989, 101; Pascall 1981, 318).

This division into three in all hierarchic levels is surely not the sole possibility but it seems a feasible one in the history of music. However, while triadic periodization is common, "there is disagreement as to detail, i.e., as to when the "late polyphonic period" ends, but as a rule these disagreements fade out in a larger pattern" concludes Allen (1939, 264). As with all generalizations, there are bound to be exceptions on all levels, but surprisingly often terms described above are applicable even to the phases within an individual composer's personal career in a general way, although then the change is of a

different type and takes place on a different level. Meyer, for one, admits that style periods are easily discernible into three, noting that the developmental model - as the rise and fall -metaphor implies - would be a plausible model concerning especially the composer's personal career (1989, 101). Meyer nevertheless stresses that the innovation is carried out in different ways in different levels (1989, 101; also Kaemmer 1993, 188). The main problem of the organic metaphor often associated with the periodizations concerns the value judgements attached to it. A further consideration why metaphor of organic growth - rise and fall - is commonly used in history and is needed to clarify the concept and how it is used here.

The notion that human history, society and experience may be viewed and described in organic terms has been a pervasive one in Western culture (Solie 1980, 147; Treitler 1989, 87, 82-94, 111-112; Donougho 1987, 322) but also noted to occur in other cultures (Kaemmer 1993, 180). Some sociological theories of art also distinguish similar phases of birth and death in art and describe how new "art worlds" or styles stem from substantial innovations (Becker 1982, 310-311). A thorough account on philosophies associated with stylistic histories in music has been presented by Warren D. Allen. Despite the half a century, which has passed since his book *Philosophies of Music History* (1939) was published, a quotation from it summarizes how organic terms are used to describe the revolutionary nature of style change:

And so we see, throughout the centuries, three inevitable stages in every art epoch: Youth, maturity and decay. The fact that the epochs overlap creates friction. The new is seldom welcome; it breeds alarm and distrust. In time, it proves its right place in the sun, becomes over-confident and arrogant, and finally, after a life and death struggle, is supplanted by an upstart, a usurper. And the cycle begins again! (Allen 1939, 253²)

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¹ According to Treitler, the organic metaphor dates back to Aristotle (*Physics*), and was widely used in the romantic era by Kant, Hegel and Winckelmann with strong quality judgements attached to it. The rise equals "the potentiality striving to realize itself" and the fall is equal to "corruption of a epoch" (cited in Treitler 1989, 87). Treitler himself criticizes against this same developmental view in current research of the music history (1989, 82-94, 111-112).

² Originally in Bauer, M. 1933. Twentieth-Century Music, How It Developed; How to Listen to It. Putnam's Sons, New York, p. 5.

As presented in an earlier account of how large cultural periods change, the periods in the colorful quotation above consist of individual stages and are seen as a succession of waves (Allen 1939, 249-250; see also Leisiö 1995, 109; and Hargreaves 1986, 210).

Even if the analogy of development and music as an organism became more popular because of Darwin's theories (Allan 1962, 237-245) and romantic idealism placed strong quality judgements to the metaphor of growth (Treitler 1989, 90-94; Allan 1962, 233), I attempt to use the terms without meaning to suggest quality judgements in the same sense. Hence, the metaphor is used here in the same way as Thomas Kuhn uses the analogy that relates the evolution of organisms to the evolution of scientific ideas and progress (1962, 172). Accordingly, the process of evolution is not towards anything, i.e., it is not a goal-directed process, which was in fact also implied by Darwin's theory.

There is a discrepancy between the way periods are distinguished as rigid, solid blocks and the way organic development is used to describe the gradual change. The periods overlap but it is the history that oversimplifies the periodization, undoubtedly aiming for greater clarity. The reasons for style change are comprehended better if the continuity of development is taken into account. As Leo Ratner observes in explaining the change in the classical period: "The change in stylistic emphasis was due to an overlap of two streams of stylistic continuity rather than a sharp change of direction" (1980, xv). The problem is how to depict this kind of subtle development. For example, it is customary to divide Beethoven's style periods in the following way, exemplified by Grout's excellent reference book, *A History of Western Music* (Grout & Palisca 1988, 628-629):

- 1) The first period (i.e., early & the classical imitation), till the year 1802
- 2) The second period (i.e., middle period & heroic) 1803-1816
- 3) The third period (i.e., late & reflective period) 1816-1826

Michael Broyles has succeeded in portraying the overlapping nature of the style change in a good, explicit way in his study about Beethoven (1987). He divides the periods quite similarly as Grout but illustrates the nature of the periods and the style change in a better way:

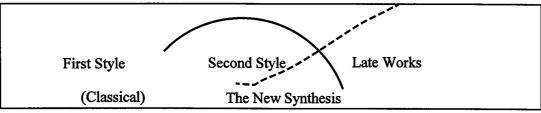


FIGURE 2.1. Beethoven's stylistic periods (Broyles 1987, 5).

Figure 2.1 illustrates Beethoven's three style periods. It is apparent how another style is emerging besides the first style and the new style is a synthesis of the first and the second style. Slowly "classical period" is seen to decline and the last period is known as Beethoven's reflective period. It is also apparent from the figure above that these periods overlap. The first period is shaped like a curve, also known as the inverted-U curve, which literally is the life span of Beethoven's early period. This is why growth and decay or rise and fall of the style described previously can be termed simply as a life span of a style. The life span of a style is also a hierarchical concept; it can mean either the whole style period or a particular period within a larger period. Hence, the concept of life span summarized above is useful for historical perspective but there is more to it than just a fitting term.

2.2 Normative life span of style

The process and the terms outlined in the previous section are undoubtedly more familiar with the classification of classical music. However, Allan Moore mentions the same formula - the organic growth and decline of style and the overlapping nature of the change - in the evolution of popular music. According to him this process just takes place in a shorter time scale than in classical music (1993, 60, 164). Similarly, Hargreaves (1986) has in his observations about the fashions of music noted regularities in patterns of change in musical taste over time in both serious as in popular music. He stresses the taste and the aspect of the consumer but nonetheless, according to him, "the most easily identifiable regular

pattern is the inverted-U function [curve]" (1986, 203). In classical music, the patterns of change move fairly slowly and in popular music, on the other hand, the change is more rapid (ibid., 206-207). For example, songs in pop charts display inverted-U curves (ibid., 207). Hargreaves offers valuable information about the musical taste, which is at least directional information for the creation of the music. Regardless, the focus in this study is on the creation and perception of a style period, which might be to a lesser degree externally influenced. An answer to that question, which is simultaneously the most precise account of the life span, has been offered by Robert Gjerdingen.

In his book *A Classic Turn of Phrase* (1988), Gjerdingen has introduced an interesting model that depicts concretely the abstract life span of one musical period. His hypothesis was that the population of a stylistic feature, in his study a changing-note schema (1-7...4-3), across time approximates a normal, bell-curved statistical distribution (Gjerdingen 1988, 100), the variation depending on how many constraints are specified in the features or schema's definition (ibid., 101). However, the distribution curve is asymmetrically distributed, positively skewed to be precise, which is as he claims, because there is a factor modifying it - the memory. Another hypothesis of his was that a schema will exhibit a curve of typicality similar to its population curve (ibid., 103), that is, when there is the highest amount of samples, the schema in question will be closest to the concept of the prototype, closest to the most typical instance of its kind. Gjerdingen presents the normal and the modified normal distribution in a simplified way as seen in Figure 2.2.

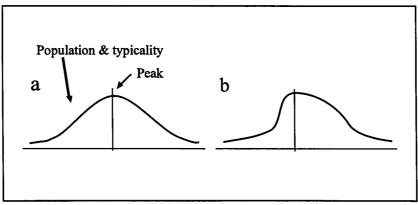


FIGURE 2.2. Normal distribution (a) and normal distribution plus effect of memory (b) (Gjerdingen 1988, 105).

The curve in Figure 2.2 represents both the population and the typicality of style feature. Curve **a** is a normal distribution and curve **b** exhibits the effect of memory to the normal distribution. Curve **b** is slightly asymmetrical; before the peak there is a faster rise and after the peak a slower decline. The explanation for asymmetricity lies in the task of the memory which is to conserve. Previous or older, established schemata inhibit the recognition of new ones, until subsequent realization of the new and re-evaluation of earlier examples, with the effect of a sudden increase in the perceived population. After the peak a similar process affects the descending curve; the schema in question is retained and established so firmly that they are relied on more and thus they inhibit the use of the new schemata. (Gjerdingen 1988, 104-105.)

Gjerdingen tested his hypothesis by surveying a changing-note (1-7...4-3) schema across time. This schema was typical for classicism, or more precisely, for the galant style. Most occurrences of it were found in the classical era, but some were found before and after that period. When all the samples found from over a hundred year period were arranged in chronological order, they exhibited a population curve predicted in the theory, reconstructed in Figure 2.3.

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¹ Hargreaves explains the decline - ignoring the asymmetricity - in general terms as part of the *cultural feedback mechanism*: the frequency of the exposure is reduced by voluntary choice as soon as they show signs of declining popularity, that is, of going beyond the peak of the inverted-U curve (1986, 210).

² The question whether this (long-term) memory is either explicit or implicit as distinguished in psychology, would need further examination. For example, *priming* might also explain the asymmetricity of the curve.

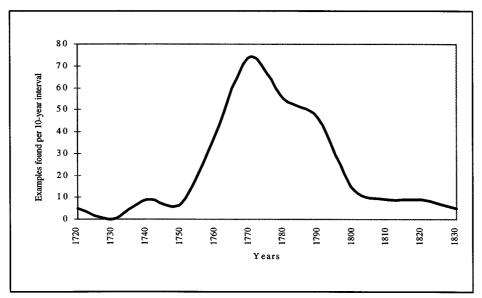


FIGURE 2.3. Population of 1-7...4-3 style structures in Gjerdingen's (1988) study, reconstructed in ten-year intervals.

Figure 2.3 displays my reconstruction of Gjerdingen's results based on the numbers presented in his work.¹ There the x-axis represents the time in ten year intervals (years 1720-1830), y-axis the amount of samples (population). The actual time scale Gjerdingen studied covers almost two hundred years, but the functional part of the results for my purposes can be distinguished in a one hundred-year period. This way occasional samples found at the far ends of the period Gjerdingen studied do not complicate the curve and the definite shape of the curve still remains intact. Thus I have left out the years 1840-1900, when the schema in question was only seldom found (used in the 20th century for ironic or nostalgic effect), for instance, between years 1840-1850 there were only four samples. I have also simplified the time interval from five years to ten years for greater clarity and because in this study the curve is an abstraction representing the normative life span.

With the typicality and the peak of the population, Gjerdingen refers that the schema is in its most typical, well-known form and also easiest to recognize; it fulfills the parameters belonging to it in the best possible way. This typicality is an equivalent to the abstract concept of the *prototype* which is "the central, core instance of a category" (Rosch 1975, 198). "The more prototypical of a category a member is rated, the more attributes it

¹ Compiled from the appendix of the Gjerdingen's work (1988, 270-283).

has in common with the other members of the category (Rosch 1978, 37). In other words, and in relation to a schema, a prototype "is equivalent to an instantiation of a schema with default values for all variables ... those values which are encountered most often" (Gaver & Mandler 1987, 271). The default values which are statistically encountered most often, create prototypical occurrence, which seldom appears in reality *per se*. As the prototype, originally symbolizing the perfect example, is used to explain our capability to classify different things and concepts construed from multiple features, the focus here is on fulfilling all the associated features identified with it to a certain degree. Also, the typical examples are better recalled as time goes by, (Mandler 1984, 105) which will be utilized when bringing the results back to concrete musical level. Also, Gjerdingen's results display the peak in the population of the changing-note schema in 1770 (See Figure 2.3). Consequently, the most typical examples of that schema should be found at the peak, which was substantiated well by his findings (Gjerdingen 1988, 264). Gjerdingen (1991) has also noted another schema fulfilling this principle.

Gjerdingen's work depicts the life span of one stylistic feature that contributes to the style, but as such, it also depicts the life span of a *galant style*, an epochal style period, because the feature followed was especially typical for that style. Similarly, as his study concerns one style period within a larger style period, it is possible that this model could be more general because it is based on such a simple principle of human cognition - memory. Keeping in mind the earlier assumptions about the three levels of historical periods and the organic nature of style this model adeptly portrays, it is appealing and worthwhile to apply Gjerdingen's results to a different kind of stylistic period and to a different range of time.

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¹ Network approach is nowadays preferred to the feature list approach (Ashcraft 1989, 296-298), which this study resembles concerning the way the prototype will be used. This approach, however, is used here for practical purposes.

3 METHODOLOGY AND MATERIALS

My aim was to study the life span of the experimental period of the Beatles and compare the results with the model of the normative life span. The focus was on the shape of the life span, not why and how these ideas come in the first place, which would make more complicated questions, needing a broader view and another set of methods.

3.1 Procedures

This study was a preliminary work about the music of the Beatles centering on the chosen stylistic features and their distribution. I approached this task in stages: (1) I defined the musical periods of the Beatles and separated the music of each period into significant stylistic features, relying on literature in both instances. (2) I registered every occurrence of the features across the Beatles' recording career (1962-70) and compared the resulting statistical distribution to the normative life span, namely, to the statistical distribution of Gjerdingen's material. This was done for each feature individually. Selected features of the experimental period are demonstrated in detail (nostalgic lyrics/classical music instruments and psychedelic lyrics/corresponding instrumentation) and then all the features of each period are displayed in whole. (3) Then I compared these results with the general knowledge of the Beatles' periods.

Nostalgic lyrics were the first major innovation apparent in the Beatles' music. The Beatles have themselves described writing songs that have nostalgic lyrics as a turning point in their career. The lyrics that were about the past were adorned with an innovation that is well-known - classical music instruments. The Beatles were renowned for being the first ones to use classical instruments in rock music, although to be precise, they were only the first ones who were widely recognized. By examining these two initially related ideas, it was possible to see how the experimental period began. The experimental style period is also called the psychedelic (style) period and naturally psychedelic features are characteristic to that period. According to literature, psychedelic lyrics are usually identified with Indian instruments and sound effects, which all will also be inspected in detail. As the focus was on the observing the entire life span of the experimental period, I attempted to find these features I have defined from the whole duration of their recording career, even if their assumed time span is shorter and roughly known.

In the last section I attempted to relate my results back to the concrete level by using the concept of prototype. I discovered those songs that fulfilled as many features as possible belonging to experimental period, to learn what would a "typical" song - on the basis of my results - of the period be like.

For a comparison, the early and the late style periods were also examined in each section in a similar way. The way the periods are commonly evaluated is also briefly considered. Moreover, the time span studied here is notably smaller (approx. eight years) than in the model, which covers approx. a hundred years, therefore it is debatable if the model is applicable in this regard. Gjerdingen, however, offers his model with some reservations as a general one for the context of Western music (1988, 106).

3.2 Principles of the analysis

I will follow each period by studying the different stylistic features of the music and by studying their chronological distribution. When defining the stylistic features, it should be

noted that they are more easily distinguished when describing idiosyncratic styles than defining features within a style or genre (Middleton 1990, 182). As there is no analytical apparatus for easily distinguishing different features or elements in the popular music styles, they have to be defined case by case. Music analysis usually categorizes the most important elements into five: rhythm, melody, texture, harmony and form. (LaRue 1970,3; Meyer 1973, 7). Tagg (1982, 154) has presented a similar distinction for the analysis of popular music distinguishing the lyrics as a separate element. Others also outline the elements of analysis of rock music more (Stuessy 1994) or less (Moore 1993) similarly, separating the lyrics nonetheless as an important element (see also LaRue 1970, 20).

In analyzing popular music, the most easily recognized features are often different genres or musical styles of the popular music, which makes them hard or impossible to be held as features or attributes of a musical style. Furthermore, these genres, such as rock 'n' roll or rhythm & blues, are often continuously present. For example, those genres are present during the Beatles' career even if slightly transformed. As John Lennon states (Miles 1969, 73): "There isn't an album without some rock'n'roll on it, is there? I mean Sgt. Pepper is a rock'n'roll song, Good Morning, Good Morning was fairly straight rock'n'roll except for some strange beats on it." In other words, these genres encompass a rather broad range of music. Therefore it is better to find out the features common to each specific genre rather than use these genres as stylistic features. For example, it is characteristic for the music style called doo-wop to have distinctive three-part singing, and this distinctive feature can be separated and regarded as an individual trait or a stylistic feature.

The lyrics in popular music can also be regarded as an individual stylistic feature. For a closer distinction between the different type of lyrics, I have adopted the classification of Davis (1989, 81-82) about the subjects of the popular music lyrics. She arranges them unambiguously to the following topics: history, realism, romance, fabulation (general stories) and fantasy. In my material realistic topics equal political lyrics and fantasy psychedelic lyrics.

Another detail worth mentioning in the systematical analysis of the features is that not all the parameters of the music are eligible to change or the change does not take place in the same time scale, which has been said to be common to music (Merriam 1964, 309; Meyer 1989, 101). For example, this type of stabile features - or normative traits as Treitler

calls them - are in rock music the basic beat and partly the form of the songs, both being nowadays almost the same as forty years ago.

My aim is not to have a complete definition of the Beatles' music but a sufficient one, covering different kind and level of attributes that are all characteristic to the style periods of the Beatles. Therefore most of the basic elements of analysis mentioned above are included in my material, yet some, for example the form and the melody of the songs, are not analyzed here because of their inherent complexity.

3.3 Analysis material

The material of my study consists of the music of the Beatles, published by the English record companies EMI and Apple officially in 1962-70. Originally their works were published on LP-, EP- and single-albums, but nowadays, since the year 1988, they have also been available on CD. Singles and EPs contain only few songs (two songs per single, four per EP). They are mostly meant to sell the individual hit song and therefore advertising the album (LP). The Beatles' singles were extraordinary at the time because they often included material that was not on the albums. Collections, such as *Oldies but Goldies* (1966) and similar ones published in 1970s and in different countries are of no relevance here, because they contain material already published. For the same reason the albums published recently, such as *Live At The BBC* (1994) and *Anthologies* (in three-parts: #1-1995, #2 & #3-1996), are not included in my material. They contain demos, unfinished and alternate takes, live recordings, and only a few previously unpublished songs. However, the Beatles did not want to publish them at the time and therefore, in my opinion, they do not represent their creative output well, although their value for the research of their songwriting is unsurpassed.

In the analysis of the material I have used *The Beatles Complete Scores* (1989). It has some minor mistakes mainly concerning lyrics, but unclear or conflicting parts I have verified by listening to the album or using other sources: for the instrumentation the most

important ones being Lewisohn 1988, Dowlding 1989, MacDonald 1994, and for the lyrics, Aldridge 1969.

3.4 The Beatles and defining the style periods

John Lennon, Paul McCartney, George Harrison and Ringo Starr recorded together between 1962-70 as the Beatles. They were from Liverpool, a harbor city in the northern part of England. The first wave of British rock, beat-music, which the Beatles also epitomize, originated from there. Beat-music contained a lot of American influences - mainly black rock 'n' roll, country-music, teenage rock and doo wop -style - but was also influenced by English skiffle-music. Musicians in these "Mersey-Beat" bands were members of working class or lower middle class people. Lennon, McCartney and Harrison started playing around 1957 (as a band called *Quarry Men*). They played without Ringo Starr in 1960-62 as the Beatles (or occasionally as *The Silver Beatles*), until they got a recording contract in 1962 and Ringo Starr joined the band. These first five years before the recordings were important for absorbing the tradition. The Beatles officially broke up in 1970 and after that each of them has continued on an individual career with different levels of success.¹

At the beginning (1962-65) they recorded few American cover songs on each of their albums, but they wrote most of the songs themselves. That was quite exceptional at the time. It is hard to separate their individual participation to the songwriting conclusively, but John Lennon and Paul McCartney were the principal songwriters, later George Harri-

¹ In fact they began their solo careers during the Beatle years. Harrison: Wonderwall Music (1968) & Electronic Sound (1969). Lennon: (with Yoko Ono): Two Virgins (1968), Life With The Lions, Wedding Album & Live Peace in Toronto 1969 (1969). McCartney (with George Martin): The Family Way Soundtrack (1967) & (with Linda McCartney) McCartney (1970).

son participated more in the songwriting.² Songwriting meant for them doing a draft version of the melody, harmony, lyrics and the basic form of the song. After this they revised and polished the songs together in the studio, all contributing to the results. In the hierarchy of style, I consider the Beatles' recording career equal to the personal career of a composer: The time span is short and the Beatles' cooperation has been characterized as a close one, meaning that they developed and used the ideas of other members freely. In fact, the inventiveness tends to be emphasized in creative groups (Hargreaves 1986, 163).

The recording career of the Beatles lasted for more than eight years epitomizing the British rock in the sixties. The development of their career is normally divided into three style periods, reminding us of the common division outlined in the theoretical section. Also typical for the division is that different authors divide the periods quite similarly, but it is typical that they disagree on the years or albums where the lines or borders of the periods are drawn. Heinonen (1994, 156) has divided the career of the Beatles in the following way:

- 1) Early period, (1962-65) from the album Please Please Me to album Help!.
- 2) Middle (experimental) period, (1965-67) from the album *Rubber Soul* to album *Magical Mystery Tour*.
- 3) Late period, (1968-70) from The Beatles [White Album] album to album Let It Be.

The division above is conceivably the most generally used by literature. It is endorsed by a wide range of authors and encyclopedias.² Some describe or emphasize the division slightly differently, for example, Salmenhaara (1969, 51), Riley (1987, 268) and Martin (Martin & Hornsby 1979) maintain that the psychedelic phase was during the years 1966-67. Porter (1979) suggests a division of four periods, because he sees the experimental period as two

¹ Approximately 90% of the songs were written either by Lennon or McCartney the rest (10%) being written mainly by Harrison (Dowlding 1989, 298). For a more precise account of their individual contributions to songwriting see Compton (1988), Dowlding (1989) and Heinonen (1994). However, because of the aim of this work, the question of authorship is not particularly problematic although it is very interesting and can provide additional information.

² The New Grove Dictionary of Music and Musicians (Lamb & Hamm 1981, 114-117), The New Grove Dictionary of American Music (Cockrell 1986, 171), The Guinness Encyclopedia of Popular Music (Larkin 1995, 323-325), The Penguin Encyclopedia of Popular Music (Clarke 1989, 85-86), The Faber Companion to 20th-Century Popular Music (Hardy & Laing 1990, 48-51) and Rock and Roll. Its history and stylistic development (Stuessy 1994, 136).

separate phases. However, his division is basically the same as the division described above but problematic on some accounts. His division of the albums is not based on the order the songs were originally recorded and published. According to him, the first six albums (Introducing the Beatles - Beatles VI, 1 years 1962-65) belong to the early period (Porter 1979, 389). Albums Help! and Rubber Soul (1965) are part of a transitionary period, where - especially from the Yesterday and the use of a string quartet - started a growth, peaking from the Revolver to the White Album, 1966-68, which is termed as the period of maturity. He sees the last years and albums (1968-70) as a sort of regression, terming it as the period of decline (Porter 1979, 392). Heinonen (1995b, 94) has also connected the periods to the normative developmental phases of a small-group in order to explain the psychological and social issues behind the periods.²

Nevertheless, this division Heinonen has presented, cited above, becomes also apparent from the comments the Beatles have made about their career on different occasions. If the periods are summarized in the same way as musical histories routinely present style periods, they would appear as shown in Figure 3.1.

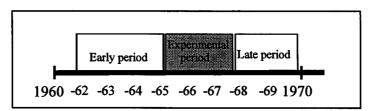


FIGURE 3.1. Beatles' three style periods as blocks in time.

Figure 3.1 displays the periods as blocks in time. It is somewhat unsophisticated but clear and a common way of illustrating history. The names and the terms for periods are neutral of any value judgements. The career of the Beatles presented in this way is surely an oversimplification, but a functional one for the general historical view of the musical styles. Despite the clarity of the illustration, it is not exactly illuminating at presenting how a new style emerges and dwindles gradually away. This process must be illuminated differently. In

¹ Beatles VI -album was published in America 1965. It corresponds approximately to Beatles For Sale (1964) album that was published six months earlier in Europe.

² Group formation 1957-62, work-group phase 1962-65, differentiation phase 1965-67 and termination phase 1967-70 (Heinonen 1995b, 94).

this study the stylistic features of the periods and their chronological distribution provide a way of tracing the change. Nevertheless, the periods summarize roughly how the music of the Beatles evolved. The early period is the tradition against which it is possible to see the change during the experimental period. During the middle period they employed ideas that were completely novel to the tradition the Beatles were originally part of - hence the more illuminating term the experimental period. The late period is said is to be characterized by dissolution of the band and because it contains stylistic features from both of the previous periods (early and experimental), it has even been referred as regressive period (Porter 1979, 391) or trend (Heinonen 1995b, 86).

The experimental period was also strongly linked to the psychedelic movement, subculture that influenced the artists at the time. It brought along with it complexity, relating closely to the birth of progressive rock (Middleton 1990, 28; Moore 1993, 84; Martin & Pearson 1994; Whiteley 1992). In that way, it is all the more interesting to concentrate on the experimental period of the Beatles because that period influenced the evolution and appreciation (and legitimation) of popular music.¹

3.4.1 Early style period

Meyer (1989, 106-122) stresses the importance of ideology affecting the change in the music history, dividing the factors of the change into the *internal* and (predominantly) *external constraints*. These terms can be applied to a brief account of factors affecting the Beatles' early style. External factors are linked to the prevalent (musical) culture, which can be summarized briefly: American teenage musical styles were the results of the long acculturation process where the black and the white interacted. In the sixties these American rock 'n' roll and Tin Pan Alley influences merged with the British skiffle and music hall -traditions generating a second acculturation phase, thus creating "British invasion" or British rock 'n' roll (Heinonen 1995b, 77-78). Besides these new musical styles, factors

¹ Some songs of that period were classified as art by art critics (Most famous being William Mann, the music critic of *London Times*, composer Ned Rorem and Deryck Cooke - see Kozinn 1995).

such as popular music as a marketable product and media that allowed the growth of the markets, were vital for the development of this musical culture.

The internal factors comprised of the following facts: John Lennon and Paul McCartney were both connected by the same interest when they were seventeen and sixteen, respectively. Their interest was music, especially rock and roll which was the only viable musical style available to them at the time. They had different musical backgrounds, Lennon had his roots in skiffle-music (Coleman 1984, 50) and McCartney's formative years were influenced by his father and his passion for jazz and the standard ballads of the mid-1950s (Coleman 1984, 70; Coleman 1995, 25). By 1957 their passion was rock 'n' roll and they listened to and imitated their American heroes and heroines such as Elvis, the Everly Brothers, Buddy Holly, Little Richard, Chuck Berry and black girl-groups: the Marvelettes and the Shirelles (Coleman 1984, 49-50; Lewisohn 1988, 6-7; Heinonen 1995b, 78). The Beatles learned their craft during the late fifties and toured professionally from the year 1960 onwards in England and on occasions played in Hamburg. They played mostly covers then, but started to write songs as some of their idols did. In 1962 the Beatles received a recording contract and immediately recorded the first album which was a big step in their ascend to fame.

It was characteristic of the Beatles' overall musical style that they played a more varied combination of musical styles than their American counterparts, who mostly played the music of one or two styles; the most important ones being teenage rock, doo-wop, and black - and white rock and roll. Heinonen has clarified the most important stylistic influences of the Beatles, illustrated in Figure 3.2.

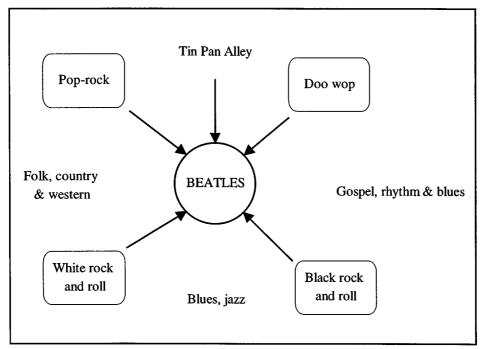


FIGURE 3.2. The most important stylistic basis for the Beatles' songwriting influences in 1962-64 (Heinonen 1995b, 79).

Figure 3.2 portrays American popular music styles or genres influencing the Beatles. The boxed genres are more influencing, and the figure also shows roughly how those styles were interconnected. For example, doo-wop is a mixture of rhythm & blues and soft ballads originally made in Tin Pan Alley. However, it must be noted that the figure is centered on the Beatles and the relationships between American music styles are in relation to that. These genres depicted in Figure 3.2 are manifested also on genres of the cover songs - which in itself is a prominent stylistic feature - they played during their early period. The music of the early period is usually characterized by different stylistic features, which I have arranged in the following table (Table 3.1). I have indicated in italics those essential and typical stylistic features which will be defined later in detail.

TABLE 3.1 Compilation of the Beatles' stylistic features of the early period

Rhythm/Form	Steady beat and tempo, mostly in 4/4 meter, where the emphasis is on the second and on the fourth beat. Internal phrases were typically four measures long, creating usually AABA -form. ^{1,2,4}
Melody	Simple, often syncopated melodies and ensemble -singing in unison or harmony, mostly in thirds or in sixths. ¹ Embellishing III and IV chords in melody is also typical. ³
Texture	Typical ensemble of the period: voices accompanied by three guitars and drums. It consists of solo- and backing vocal, solo- and rhythm guitar, bass and drums and sometimes supplemented by piano, harmonica, or different kinds of percussions. ^{1, 2, 3} Besides soft three-part harmonizations more rough rock'n'roll - type singing was also typical, including different kinds of utterances and meaningless vowels. ¹
Harmony (to- nality)	Usually quite simple in tonal structures, generally more in major, including to some extent blues notes. The chords were simple but followed in unexpected sequences. ^{1, 2, 3, 4}
Lyrics	The lyrics mostly deal (in adoring manner) with boy-girl love situations. 1,4

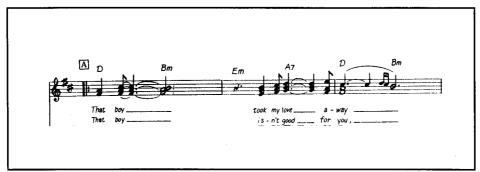
¹ Heinonen 1995b, 74-80, ² Lamb & Hamm 1981, 112-115, ³ Porter 1979, 374-375, ⁴ Stuessy 1994, 141-53.

I will briefly define the typical features in the following. The examples are from *The Beatles Complete Scores* (1989) which is the most reliable reference available. However, in some cases (e.g., Example 3.2) it would be possible to transcribe the music in a different way, but it would not change essentially the definition or the analysis of the features. References to a section of the song are abbreviated according to common terminology describing the form of popular songs. I will leave out the references to the source material that can be found in a condensed form above and refer only to material that is specific to a particular feature. Recording year is mentioned after each song.

Cover songs: This unambiguous feature covers all occasions when somebody else than Lennon-McCartney, Harrison or Starr has a written song they have performed. The songs of such writers as Leiber-Stoller (*Kansas City*), Goffin-King (*Chains*) and rocklegends such as Little Richard (*Long Tall Sally*), Smokey Robinson (*You Really Got a Hold on Me*) and Chuck Berry (*Roll Over Beethoven, Rock and Roll Music*) were covered.

¹ I am referring to the common AABA pattern used in popular music, because the use of other terms varies greatly: A- and B-section, usually bordered by intro and outro (or fade-out), are also known as verse and chorus or in America chorus and refrain (the latter referred sometimes as "bridge" or "middle-eight").

Ornament: Melody was occasionally ornamented with a few short grace notes. The Beatles -mainly Lennon - used an ornamented, long appoggiatura or sustained note (2-1) with a quick, upwards moving grace note (See Example 3.1, measure 3). It was most likely learned from girl-groups such as the Shirelles although it was also a common way of embellishing the melody for the Everly Brothers.



EXAMPLE 3.1. An example of an ornamentation and three-part singing. *This Boy* (1963), A-section, meas. 1-3 (Scores, 954-955).

Basic line-up: The basic line-up of the Beatles was similar to their idol's (and the first white rock group) - Buddy Holly's Crickets - instrumental line-up: singer, electrically amplified solo-, rhythm-, and bass guitar and the drums. An acoustic guitar (electrically amplified) was sometimes also part of the basic line-up. In addition, piano, harmonica, organ or miscellaneous percussions were sometimes added. However, they all belong to the tradition and thus do not alter the concept of the basic line-up.

Three-part singing: The Beatles used soft three-part singing, imitating their favorites, American girl-groups (the Cookies, the Marvelettes and the Shirelles). This kind of texture remains in the their music after the early period, but characteristic for the early period is that all three singers (Lennon, McCartney & Harrison) harmonize simultaneously. Therefore the criterion is that the melody is sung simultaneously by three singers with the same words. Another typical style of singing, which is excluded from this feature, is backing singing with vowels such as *oo*, which is still today a typical part of the rock (backing) singing.

¹ Vocals done by overdubbing are inherently different, more influenced by the Beach Boys and sang by Lennon and McCartney. The question concerning overdubs and who sang each part I have verified by Lewisohn (1988) and Dowlding (1989).

Harmonica: Harmonica is a part of blues tradition, influencing the Beatles through the American stars. Harmonica was featured also in Bruce Channel's song, *Hey Baby* (1962), high on the billboard just before the Beatles recorded their first singles that prominently featured harmonica (Coleman 1984, 156). It is used for example in the singles *Love Me Do* (1962), *Please Please Me* (1962), *From Me to You* (1963) and *There's a Place* (1963). Nevertheless, two problems concern this feature. First, it was employed relatively little and secondly it was the first attempt of the Beatles to widen the instrumentation, their first "new gimmick" according to Lennon (Wenner 1971a, 104).

Woo and yeah -screams: The distinctive woo -scream was originally Little Richard's mixture of screaming and singing. It is sung in falset, usually once on the turn of the section. McCartney has confessed the was a good Little Richard -imitator, even to the point of the scream (Elson 1986, 14). It is a well-known feature by the Beatles (MacDonald 1994, 63; Moore 1993, 62; Marcus 1992, 219). Lennon and McCartney have also told that they were very impressed by the screams Elvis made, and according to Lennon they started to use the screams after the Isley Brothers song *Twist and Shout* (Coleman 1984, 228; Sheff 1981b, 196). For example, Little Richard's song *Long Tall Sally* had both woo- and yeah -screams and in such songs as *She Loves You* (1963), *I'll Get You* (1963) and *It Won't Be Long* (1963) yeah-scream was used as a hook.

Romantic lyrics: During the early sixties most of the lyrics for young people's music dealt with love, mostly in a positive way. This category covers all the songs that deal with romance and love.

3.4.2 Experimental style period

A major part of the features common to rock music such as rhythm and melody, remained relatively unchanged for the duration of the Beatles' career and in rock music in general. Slowly new stylistic features were introduced and the music of the Beatles grew more complex. Their music was part of the trend where other styles also evolved at the same time - folk, soul and later progressive rock. To outline this change and how the experimental period began, a short account of the major factors that enabled and contributed to the

active change is needed. Meyerian categorization into internal and external constraints is useful here again.

External (non-musical) factors affecting the Beatles' experimental period:

- i. A major factor was undoubtedly the cultural situation affecting all the other factors. Ideology, which in the mid-sixties stressed complexity, was known as a psychedelic period, lasting approximately from 1966 to 1969, culminating in 1967. The use of drugs, protests against war and liberalism were all related to this ideology. A part of the mystical nature of the psychedelic ideology was drawn from the Eastern ideology. (Lamb & Hamm 1981, 116-117; see also Whiteley 1992.)
- ii. The height of Beatlemania in 1964 and the touring had become unbearable to the Beatles. Lennon expressed this in 1965: "Beatles concerts are nothing to do with music anymore" (Coleman 1984, 178). The number of live shows diminished in 1965 until their last concert in Candlestick park 29.8 1966 (Robertson 1990, 59).
- iii. Advanced studio technology allowed more possibilities for the production in the studio. For example, ADT (Artificial Double Tracking, which is still in use) became available in 1966 (Lewisohn 1988, 204; Martin & Pearson 1994, 82-83) and more [mixer] tracks in 1966-67 (Martin & Pearson 1994, 80-82; Martin & Hornsby 214; Denyer 1985a, 57), although *Sgt. Pepper* was still made on a four-track (Miles 1995, 57; Giuliano & Giuliano 1995, 236).

Internal (musical) factors affecting the Beatles' experimental period:

i. The Beatles consciously and intentionally changed their own musical style: George Martin describes how the Beatles were always looking for new sounds (Denyer 1985a, 60). They wanted to introduce new instruments (Coleman 1984, 192), were increasingly interested in the production (Lewisohn 1988, 12) and had their own tape recorders at home for experimenting with the sounds (Coleman 1984, 230). Paul McCartney summarizes all this: "We were always pushing ahead: louder, further, longer, more, different" (Lewisohn 1988, 13; see also Hertsgaard 1995, 166). They were also aware of the fact that the innovative ideas were often

borrowed from the existing music (Coleman 1984, 157; Benson 1992, 148; Palmer 1970, 46; Norman 1981, 300).

ii. George Martin, who acted as a producer, had quite an influence on the Beatles' music. He had a wide knowledge of classical music and was a skillful orchestrator and brought many possibilities to the arrangements of the Beatles' songs. However, the real decisions about the use of the effects and the arrangements were mostly made by the Beatles themselves, as Martin himself suggests:

On the one hand, the increasing sophistication of the records meant that I was having a greater and greater influence on the music. But the personal relationship moved in the other direction....All I could do was influence. I couldn't direct. (Martin & Hornsby 1979, 133).

iii. Active competition with other bands and between the Beatles themselves propelled them to come up with new ideas (cf. Hertsgaard 1995, 111). Even if the task of distinguishing all the influential persons or bands is impossible, the major ones can be summed as follows. Bob Dylan had a strong influence on the Beatles. Besides admiring and having met him, the influence of Dylan's lyrics and the folk-music on the whole is noticeable in the music of the Beatles and sparked especially John Lennon. Lennon started to add more personal statements to the lyrics and described the change in the following way (Sheff 1981b, 192): "In My Life - It was the first song I wrote that was consciously about my life. Before, we were just writing songs à la Everly Brothers, Buddy Holly - pop songs with no more thought to them." (See also Miles 1995, 57; Cott 1968, 51). Other inspirational persons or bands were Brian Wilson and the Beach Boys, especially their innovative album Pet Sounds (1966) (Martin & Pearson 1994, 48-49; Lewisohn 1988, 13; MacDonald 1994, 171-172; Miles 1995, 57) and another American band, the Byrds (MacDonald 1994, 169).

In addition to the factors above, it is worth mentioning that their individual roles within the band, concerning which instruments they played, also changed radically during that period

¹ John Lennon's interest in the literary side resulted also in his first book, *In His Own Write*, published in March 1964 and second, *A Spaniard In The Works*, June 1965.

(Heinonen 1996). The Beatles also widened the range of musical styles they utilized in their own songs. Perhaps the most well known in this sense is Western art music which influenced them in various ways. This, and other musical styles and traditions influencing the Beatles' music during this second stylistic period, are seen in the summary by Heinonen:

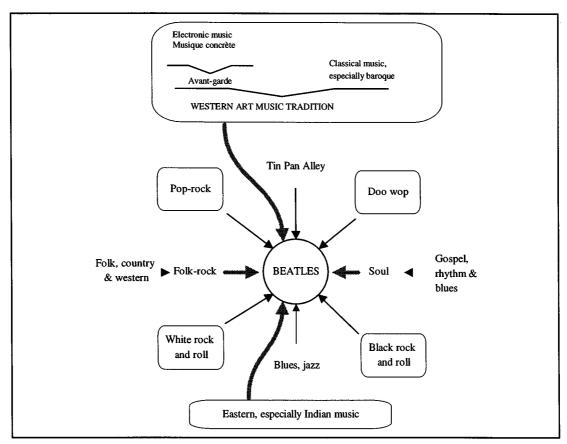


FIGURE 3.2. The most important stylistic premises in 1965-67 (Heinonen 1995b, 84).

Figure 3.2 shows how some traditions and styles became more influential (broader arrows) although musical styles from the early period are still present to a certain extent. In spite of having a large amount of stylistic influences, their music during this period is characterized in a coherent way. This is seen in the following summary that is again based on the literature (See Table 3.2). Features chosen to represent the Beatles' experimental style are marked in italics and will be defined later.

TABLE 3.2 Compilation of the Beatles' stylistic features of the experimental period

Rhythm/Form	Changing meters and irregular phrase lengths, also irregular forms (AAB, AB, AAA). 1, 2, 4		
Melody	Melody is sometimes based on tone repetition, Indian influences on the melodies.		
Texture	Basic line-up is the same as it was during the early period, although not necessary all the instruments were used at the same time. Instead, a wide range of new instruments such as instruments from the symphony orchestra and Indian instruments -mostly played by hired musicians - were often added. ^{1,2,3} Also Music concrète -influences, effects (natural sounds) and vocal polyphony were common. ^{1,2,4}		
Harmony (to- nality)	More sophisticated chords, increased modality: bVII chord. Also counterpoint and passacaglia -type linear descending bass-line were used. 1, 2, 4		
Lyrics	Lyrics deal with new topics like <i>imagination</i> and <i>social commentary</i> . ^{2,3,4}		

¹ Heinonen 1995b, 82-83, ² Porter 1979, 378-382, ³ Lamb & Hamm 1981, 117, ⁴ Stuessy 1994, 141-53.

The following definitions about the chosen features are done in the manner described earlier. Selected features (classical instruments, Indian instruments, nostalgic and psychedelic lyrics and sound effects), which are last in the following list of definitions, will be examined more later, in Chapter 4.1, as their origins and common histories are considered.

Changing meter: The usual 4/4 meter in rock music was challenged by irregular meters such as measures with one extra beat in it (5/4). In songs We Can Work It Out (1965) and She Said She Said (1966) alternate 4/4 and 3/4 meter and in song Good Morning Good Morning (1967) the meters are more varied (See Example 3.2).



EXAMPLE 3.2. Changing meters and bVII chord. *Good Morning Good Morning* (1967), Assection, meas. 1-4, (Scores, 336).

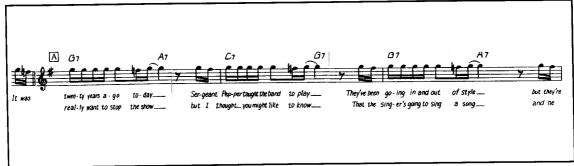
Flattened VII chord (bVII): Whereas modal references such as flattened third and flattened seventh degree are part of the blues tradition, the Beatles' usage of especially flattened seventh degree is more distinctive as an individual feature. It was partly influenced by Indian music that features prominently such modality. Such songs as *Good Morning Good Morning* (1967) (See Example 3.2, measure 1) and *Taxman* (1966) are good examples of that particular chord.

Tone repetition: Melodies, which use extensively tone repetition (the pitch is unchanged while the chords change), belong to this category. The repetition can be either concrete or structural, in essence, the variations at the surface-level do not alter the perceived repetition. Thus, in structural repetition the chord must change and the tones must be on the strong places of the measure (See Example 3.3).



EXAMPLE 3.3. Structural tone repetition.

Long repetitions of a single tone are common in folk and soul music that influenced the Beatles during that period. Both Lennon (Miles 1969, 71) and McCartney (Dowlding 1989, 119) admitted they had been trying to write one note songs. Such songs are for example *The Word* (1965), *Michelle* (1965) and *Sgt. Pepper's Lonely Hearts Club Band* (1967), which is portrayed in Example 3.4.



EXAMPLE 3.4. Tone repetition, Sgt. Pepper's Lonely Hearts Club Band (1967), A-section, meas. 1-3, (Scores, 857).

Descending bassline: This characteristic figure has been noted for its classical influences (Porter 1979, 380; Salmenhaara 1969, 45; Moore 1993, 84; Josephson 1992; Lilliestam 1995, 199), although Bob Dylan's songs of the mid 1960s also featured similar figures (Heinonen 1995b, 83). Linear, descending bassline can be either: (a) diatonic, (b) chromatic, or both, covering at least four consecutive notes (See Example 3.5). As the function of the bass is to support the harmony, it is on the structurally strong beats. A case in point are the songs (a) *A Day in the Life* (1967), (a) *All You Need Is Love* (1967) and (b) *While My Guitar Gently Weeps* (1968).



EXAMPLE 3.5. Descending bassline, (a) diatonic and (b) chromatic.

Static harmony: Normally the chords in rock music change considerably often, depending on the tempo, from many times per measure to twice per section of the songs (4-5 measures per chord). Static harmony is a pattern which remains on a same chord definitely more than that. The melody might create local harmonies in such cases but long static periods are perceptible as they cover whole sections of a song or longer periods. Indian music, which is built on a static drone, influenced the use of this feature (Porter 1979, 379; MacDonald 1994, 151). This is exemplified by such songs as *Tomorrow Never Knows* (1966), having only one chord, and *Within You Without You* (1967), and *It's All Too Much* (1967).

Political lyrics: The subjects of the songs changed during the years 1965 and 1966. New lyrics dealt with politics or were socially commenting as in *Taxman* (1966) - ironic commentary to severe taxing, (Dowlding 1989, 133), and *Revolution* (1968) - voicing an opinion of the Vietnam war (Sheff 1981b, 194).

Classical instruments: This category covers all the instruments normally used in Western classical orchestra: violins, cellos, trombones, clarinets etc. For the purposes of this feature, they can be used separately or as a section: a string quartet (Yesterday, 1965), a horn (For No One, 1966) or a full orchestra (A Day in The Life, 1967) all are equal

examples of this category, although they indicate how this parameter evolved as time went by. The way the instruments are played does not make any difference here, although the only exception is a style of playing that represents totally another genre of popular music but this happens only with two songs: *Got to Get You Into My Life* (1966) is backed up by a brass section (3 trumpets, 2 tenor saxophones) in a way which is more typical to soul music (Lewisohn 1988, 79) and *Don't Pass Me By* (1968) has a violin accompanying in a country style.

Indian instruments: Instruments such as sitar, tanpura and svormandel belong to this category. The first song using an Indian instrument, the sitar, was *Norwegian Wood* (1965). After that song the sitar and other Indian instruments were used for example in such songs as *Love You To* (1966), *Within You Without You* (1967) and *Strawberry Fields Forever* (1967). Often Indian musicians were hired to play these instruments.

Effects: The effects the Beatles used ranged from simple sound effects to elaborate ones that were close to the concept of music concrète. This feature covers all these but not the simplest technical innovations or manipulations such as echoes, reverbs or such (fuzz, wah-wah and panorating). Therefore, examples range from backward instrumental segments (*Rain*, 1966 and *I'm Only Sleeping*, 1966) to the sounds of the real world such as animal sounds (*Good Morning Good Morning*, 1967) and to certain special effects, such as using a part of radio program (*I am The Walrus*, 1967).

Nostalgic lyrics: The subjects of the songs changed to be more autobiographical, nostalgic or reminiscing. The criterion for this category is that the lyrics clearly allude to the past, which can be verified from the comments the Beatles have given themselves. Included are also the songs that parody the music-hall style of the 1920s. *In My Life* (1965), *Strawberry Fields Forever* (1967) and *Penny Lane* (1966) have all remembrance as their main theme, as songwriters themselves have expressed (Sheff 1981b, 192, 196), and therefore are exemplars of this category.

Psychedelic lyrics: The term psychedelic is often used to refer to the delusions associated with the use of hallucinogens, such as LSD. As far as the Beatles' lyrics are concerned, this category consists of the lyrics that describe impossible things, use colorful metaphors, emphasize sensations, use irrational combinations of words and vague allusions to different things. The connection between previously mentioned sensations and the lyrics

of the experimental period is obvious in, for example, such songs as *Tomorrow Never Knows* (1966), *Lucy in the Sky With Diamonds* (1967) and *I Am The Walrus* (1967).

3.4.3 Late style period

The late style period of the Beatles is defined here only briefly for the purposes of giving a comprehensive picture about their musical career. However, the late period was marked by a slow separation of the interests of the band members, leading finally to the breakup. The stylistic features consist of the attributes common to the previous style periods and it was typical that none of the single attributes was stronger than the other (Heinonen 1995b, 87). Therefore, the previous stylistic periods and the definitions for them are to some extent applicable to the late style period of the Beatles. For one thing, they intended to get back to their roots - to the basic rock 'n' roll and playing live - in the beginning of 1969. This was realized in the so-called Get Back -project which amounted to the *Let It Be* -album later. The album includes a song attempted to record already in 1962, *One After 909* (1969). For another thing, the last album (*Abbey Road*) is also characterized by the idea of getting back: There are 1950s -style rock and roll songs but they also returned to work in the studio in the way they used to do in the experimental period (Dowlding 1989, 273). Finally, self-parody might be noted as a characteristic feature of the late period but it has not been looked into here.

As for this study, it is sufficient to note that as the late period creates an extension of ideas from both previous periods, the main focus can be set on the experimental period. Nevertheless, it is fascinating to observe how the late period is portrayed by the sum of the previous periods in the quantitative section.

3.5 Statistical analysis

Statistical methods are relevant to the study of history where a large number of samples have to be categorized; our perception does a similar procedure of our environment continuously. In this sense statistical methods support or illuminate the facts of a more quantitative type.

I will follow the style periods of the Beatles by the features belonging to each period and examine their statistical distribution. I will compare these results with the normative life span, namely, Gjerdingen's results. The material in this study is significantly different from the study where the model is obtained, so I have had to adapt the model to fulfill my needs. It is also essential to be able to divide and arrange the Beatles' recording career in a coherent way to make valid comparisons, while keeping the results still understandable in the light of Beatles' career, where the albums are held as the main unit.

3.5.1 Applying statistical analysis

Recording the occurrence of features and changing them into numbers happens as follows: If a certain feature exists in the song, it receives a value of one. For example in the instrumentation, if there is a string quartet in a song, a value of one is scored for that parameter. In other words, I will deal with the parameters only if they fulfill my definitions or not, without ranking or rating them any further, that is, without considering the length or the style of playing. One song can represent several parameters which may even represent different style periods. For example, the song *Help!* (1965) uses the basic line-up, but also has both flattened seventh degree chord and note repetition in it.

This method is equivalent to the one used in Gjerdingen's study, where the changing-note schema was found or not found and therefore transformed into statistical data in a similar way (found sample=1). In his display of statistical results the x-axis portrays the time and the y-axis the number of samples (See Figure 2.1, p. 22). The interval

is five years in Gjerdingen's study, but I have applied his results to suit the material of this study better. I reconstructed his results from the appendix of his book (1988, 271-283) and doubled the interval to ten. Consequently Gjerdingen's results are divided into twelve parts (120 years / 10 years), the interval being simpler and closer to the material in this study. The shape of Gjerdingen's results remains intact after this operation. The change concerns only minute details, especially at the ends of the curve, most of which are attributed idiosyncratic creations or stylistic anomalies as Gjerdingen articulates them (1988, 250, 260-261).

The Beatles wrote and recorded songs regularly and subsequently their albums reflect that. Two albums per year were published, except in the years 1966-68 only one per year, amounting to twelve albums in all. It would be sensible to keep the albums as the intervals for chronological presentation, because they are the units by which their career is characterized. Such a division has been used by Dowlding displaying how the authorship of the songs is divided between Lennon and McCartney (Dowlding 1989, 300). My aim has been to establish a division that would be as close as possible to the "pure" chronological division Gjerdingen uses, but would keep the albums as the unit of division. Still, the publishing dates of the albums rely on the external factors and the songwriting itself does not follow exactly any standard interval. Therefore there could easily be problems that would be especially debilitating here considering the short time span the material covers. The recording career of the Beatles lasted from the fall of 1962 to the beginning of 1970. When this seven-year period is divided by 12 (the same amount of intervals as in Gjerdingen's results after reconstruction), the result is an interval of approximately seven months. Coincidentally, these seven-month periods follow well the recording periods of the albums, but there are some exceptions. These exceptions can be clarified by using biographical data. Often after recording an album a vacation and journeys abroad during it delayed the beginning of the next recording session. The division I use here is therefore based on the seven-month intervals modified by the albums. Thus the Beatles' career is divided into

¹ Although Gjerdingen's study covers the years 1720-1940, most of the samples were found from a period that is effectively hundred years shorter (120 years) see p. 25 & Gjerdingen's study (1988, 260-263).

twelve periods, and the results are immediately comparable to the Gjerdingen's results and easily understood in the terms of the Beatles' career.

I have always used the first recording date of the song, meaning those recordings the Beatles made for the EMI under contract, when assigning their positions in the chronology. Mark Lewisohn's *Recording Sessions* (1988) is by far the best source in these matters. In most cases, it took a couple of days to record a song and the Beatles often worked simultaneously on several songs a day. Remakes or overdubs made later are not vital to the overall recording chronology used in this study. Songs, including EPs and singles, are arranged by their recording dates into periods which are labeled by corresponding, published album names. However, there are some (7) songs which were published for various reasons considerably later than they were recorded and thus these exceptions appear in this division earlier than is commonly believed (See Appendix). In the following this *modified chronological division* is presented and the exceptions from the seven-month intervals are explained (See Appendix for the songs and the dates).

4.9.1962-30.4.1963 1	Please Please Me
1.5.1963-30.11.1963	With The Beatles
1.12.1963-30.6.1964	A Hard Day's Night
1.7.1964-31.1.1965	Beatles For Sale
1.2.1965-31.8.1965	Help!
1.9.1965-31.3.1966	Rubber Soul
1.4.1966-31.10.1966	Revolver
1.11.1966-30.4.1967 ²	Sgt. Pepper's Lonely Hearts Club Band
1.5.1967-31.3.1968 ³	Magical Mystery Tour/Singles/Yellow Submarine
1.4.1968-31.10.1968	The Beatles (White Album)
1.11.1968-31.1.1969 4	Let It Be
1.2.1969-3.1.1970 5	Abbey Road

¹ The first period is more than seven months because it includes the first recordings they made at Abbey Road -studio (4.9.1963, songs *P.S. I Love You* and *Love Me Do*) which were published later as their first single.

² The period is just six months long but after making an album with an unprecedented intensity they had a vacation.

¹ Precluding the recordings made in Hamburg and in England prior 4.9.1962. The Beatles recorded for the first time at the EMI studios in 6.6.1962, but it was more like an artist test (Lewisohn 988, 16).

³ The duration of the period is eleven months, but they only recorded during ten months. There were various reasons for the long period: making two films (*Magical Mystery Tour & Yellow Submarine*) and their trip to Rishikesh, India. Most of the songs of this period were published as singles, the most famous being *All You Need Is Love* recorded live in a worldwide television show (25.6.1967). The name of the period is hence termed by the main albums (*Magical Mystery Tour -EP* and *Yellow Submarine -EP*) and singles.

- ⁴ The period is just three months long but it is very explicit because as previously in *Sgt. Pepper's* case, the band took time off after recording *The White Album* (each of them travelled individually abroad), until McCartney got them together to record the next album "live" while a film crew was filming them. Those "Get Back" sessions lasted for two months.
- ⁵ The period is more than seven months long although the last recordings that the Beatles made together were in 1.8.1969. However, the period encompasses a song recorded separately much later (John Lennon was absent), Harrison's song *I Me Mine* (3.1.1970).

On each album there is a different number of songs (with the singles and EPs the average is 15-18 songs/album, except 32 songs on *White Album*). Therefore I treat my samples as a relative amount (%/album), in other words, the feature studied occurs n times / total number of the songs of the period. For example, the period labeled as Sgt Pepper has seventeen songs in all and uses Indian instruments on four songs, the relative amount is thus twenty-four percent (i.e., 4/17=24%).

I have compared the results of this *modified chronological division* to the results obtained from absolute chronological division (of seven-month periods) and to the results obtained from a division based solely on the albums. The results are not significantly altered. The differences are evident in those cases where there is a low amount of samples of the parameter but the results tend to be generally similar.

Lastly, the experimental style period of the Beatles and the model in question do not have their population peaks at the same place. This is mainly because Gjerdingen's data is from the large time span and the phenomen had time to disappear almost completely from common usage. The material in this study is from a far shorter time span and what is more important, the Beatles broke up as a band before the stylistic features of the experimental period had time to disappear completely. Consequently this is compensated by setting the population peaks at the same place when calculating their correlation values. The population peaks differ from each other by two intervals, thus I have adjusted my material two intervals earlier: Then the two first albums (*Please Please Me* and *With The Beatles*, both from the year 1963, which do not have any experimental features in them) are

removed from the comparison of experimental features with Gjerdingen's data. Statistically this operation does not change reliability because only the number (N) and therefore the degrees of freedom (df) is lowered requiring higher correlation values to be statistically significant.

3.5.2 Making conclusions

I will first focus my attention separately on a few selected features, then compare all the early period- and experimental period parameters with Gjerdingen's results, by using the average sum of my results. Even if the general outline of the style through population samples would be evident from the graphs, calculating correlation values is a scientific way to test the significance and enables ruling out the possibility of chance (Karma 1983, 69; Cooligan 1994, 233). High correlation with Gjerdingen's data supports the claim about the normative life span of style. The other observations that I will attempt to clarify - connection between nostalgic lyrics and classical instruments and psychedelic lyrics and corresponding instrumentation - should also be apparent from the statistical values of the results but they are also examined with the aid of the qualitative methods.

Turning to the qualitative part, the relevance and reliability between the periods of the Beatles, corresponding features and the connection to the theoretical concepts can be evaluated by asserting how unambiguous and easily replicable they are. The same set of criteria holds true for the quantitative, statistical part of the study, where reliability is also measured by standardized methods for checking reliability. The method used here is a splithalf method, where the material of one style period is divided randomly into two halves (reversed alphabetical order of the features), which are then compared with each other as a measure of reliability. Correlations achieved here would be expected to exceed 0.9 (Cooligan 1994, 150-152). This method also cancels the threat to validity by using the average of the all individual features in comparison if it produces low deviation and high correlation values between the two sets. Comparing the results from one style period with another shows if the results are consistent with each other and how they relate to the

model. Finally, a comparison of the number of samples in my material to the model is also a measure of reliability.

Observing the external validity, that is, how much the results can be generalized, it is possible to consider how well the methods used are applicable to the material, and how different material or time span would affect the results, and finally, how well the material represents the phenomen studied (Cooligan 1994, 50-57). In other words, did the test measure what it was supposed to measure; are the features observed here truly characteristic of the Beatles' experimental period, and, are they valid as choices compared to the Gjerdingen's data. In the case of construct validity, the starting point might be the knowledge and conceptions we already have (Karma 1983, 57). Therefore it is possible to ask how well the chosen features represent the periods and accordingly, the prototypical songs obtained from my material answer this question when compared with the common knowledge and general assumptions about the typical songs of the periods. The prototypical songs for each period are acquired by finding the songs that fulfill as many parameters as possible. Furthermore, it is possible to inspect how these prototypical songs are connected to the population peak where they should be according to Gjerdingen's second hypothesis.

4 RESULTS

To begin with, I will look at those initial, novel ideas that are apparent in the Beatles' music in their experimental period and their relationships to one another, before dealing with the parameters of all the periods.

The Beatles started to try out novel ideas progressively even almost from the beginning of their recording career, but the stylistic turning point is commonly considered to be *Yesterday* (1965) on the *Help!* album (Coleman 1995, Porter 1979, 389; Martin & Hornsby 1979, 133, 167; Martin & Pearson 1994, 76; Stuessy 1994, 119). Several authors characterizing their stylistic period agree with the previous, although they assume the change is not perceptible until from the *Rubber Soul* (1965) album onwards. This equivocal question about estimating the beginning of the period will be considered later on the basis of the results obtained here. In any event, the changes are evident in the lyrics and instrumentation: the lyrical content of songs started to change and the use of classical instruments and later Indian instruments marked the departure from the traditional teenage music of that time. Although the main focus here is in comparing the chronological distribution of the parameters to the normative life span of style, it will be reasonable to go through in detail the first few songs featuring these well-known parameters. In this way, the beginning of the innovations are also briefly explored. Furthermore, I will attempt to provide evidence for the observation that at first the innovations were thematically connected.

4.1 Emergence of the experimental style: novel instrumentation with new type of lyrics

By late 1965 the Beatles were in a position enjoyed by few stars in any field: they had the security of their position to begin to experiment. This was due to the factors mentioned earlier (end of touring, active competition, technology, musical influences etc.) that affected or started to affect them in late 1964 and continued through the following years. Some novel ideas (e.g., using a string quartet) stand out at the beginning of the experimentation, leading the way into more complex things. Classical instruments are a particularly good an example of this. Moreover, certain innovations concerning lyrics concur with the songs that use classical instruments which, I argue, is not a coincidence. It is my assumption that nostalgic songs have an instrumentation that reflects or corresponds to their lyrical content. Psychedelic lyrics and corresponding instrumentation, which might be another thematically connected pair of innovative stylistic features, and therefore considered also in detail.

4.1.1 Classical instruments and nostalgic lyrics

The lyrics and the music were not totally separate elements in the music of the Beatles. For example, according to Walter Everett, those love songs (written during the early period 1962-64) that dealt with remembrance, were already then emphasized with certain musical figures (1986, 361-364). He also notes that the string quartet was used "for of its suggestive associations with the past" (ibid., 363). Everett (1987) has also asserted that the theme of loneliness was the cause for classical instrumentation in such songs as *Eleanor Rigby* (1966), *For No One* (1966) and *She's Leaving Home* (1967). He concluded that classical instruments could express a sentiment such as loneliness better than the Beatles' own performance (1987, 6). However, there are several songs before and after those three songs Everett mentions which use classical instruments. Therefore, a better theme influencing the choice of instrumentation might be nostalgia. Classical instruments were appropriate to the

nostalgic theme of the songs in the way that they represented the older generation for the young people. Classical music and standard ballads of the fifties that also used strings were, and still are, more likely to be appreciated by the parents of the teenagers, hence pointing to the past (maybe even to childhood),¹ and at least the implying of a more legimate and valued music. Nevertheless, it is exaggerated to say that the nostalgic lyrics were *the sole* initiator for the use of classical instruments, because the instrumentation was suggested by George Martin in the first place.² In the remainder of this section, these parameters are first described, then presented chronologically and compared to the model, and finally the link between lyrics and instrumentation is considered.

The first song to use classical instruments was a dylanesque song *You've Got To Hide Your Love Away* (1965), which featured two flutes played by studio musicians (Sheff 1981b, 199, MacDonald 1994, 118). In this case the instrumentation was influenced by folk music. The real breakthrough in many ways was *Yesterday* (1965), which was recorded five months later. Its instrumentation includes an acoustic guitar and, on George Martin's suggestion, a string quartet (Coleman 1995, 43). The lyrics in that Paul McCartney's song were autobiographical, nostalgic, if somewhat sentimental (ibid., 21, 30). The next nostalgic song was John Lennon's *In My Life* (1965) that has also been singled out as a turning point both lyrically and musically. Lennon stressed this aspect of the song as cited earlier (See p. 41), but he has also elaborated what the song was about: "*In My Life* started out as a bus journey from my house at 250 Menlove Avenue to town, mentioning all the places I could recall" (Sheff 1981b, 192). The song was recorded five months later than *Yesterday* and Lennon requested "something baroque-sounding" for it (Riley 1988, 167). George

¹ Lennon and especially McCartney tell how they grew up with the music their parents enjoyed, such as film music and jazz standards (sung by Frank Sinatra and Bing Crosby). (Coleman 1995, 25, 27, 98).

² Paul McCartney was also into classical music in 1965, partly because of the influence of his girlfriend, Jane Asher, who took him to classical concerts (Turner 1994, 14; Martin & Pearson 1994, 79-80; Coleman 1995, 4). *Eleanor Rigby* and *Penny Lane* have been noted as prime examples in this sense (Sheff 1981b, 182; Martin & Hornsby 1979, 201; see also Coleman 1995 for the best account of *Yesterday*'s birth).

Martin obliged by playing a baroque type piano solo for it.³ The next notable song was *Eleanor Rigby*, where not one of the Beatles actually played, but it featured a string octet instead. The lyrics of that song allude to the past, though only vaguely (Flippo 1988, 26; MacDonald 1994, 162; Giuliano 1982, 33). George Martin mentions this song as a forerunner of a complete change of style (Martin & Hornsby 1979, 199). *Yellow Submarine* and *For No One* from the same album as *Eleanor Rigby* uses classical instrumentation. Nevertheless, *Yellow Submarine*, originally written as a kid's story, and *She Said She Said* on the same album that alluded to the childhood, are considered nostalgic when *For No One* is not. Therefore the lyrics can be seen to encompass a wider range of themes than before, making it harder to classify them. Similarly, on the same album there was an increased number of songs that featured classical instruments and nostalgic lyrics though not necessarily in the same song anymore.

When I'm Sixty-Four (1966) was Paul McCartney's old fashioned cabaret tune that had three clarinets as part of its instrumentation. However, the culmination for the nostalgic thread came at the turn of the year, when two famous songs were published together as a single: The lyrics for Strawberry Fields Forever (1966) and Penny Lane (1966) are directly about the songwriters' childhood and both use extensively classical instruments. The lyrics of Strawberry Fields Forever describe a nostalgic childhood place and the loneliness Lennon felt as a small boy (Sheff 1981b, 196). It has cellos, a trumpet and two horns as part of its instrumentation. McCartney's answer to Lennon's song, Penny Lane, describes a nostalgic childhood, a suburban district in Liverpool (Miles 1978, 88; Sheff 1981b, 194). It was McCartney's idea to use a piccolo trumpet in a baroque style that he had just heard at a classical music concert (Lewisohn 1988, 93). There were other nostalgic songs and some of them featured classical instruments, such as A Day In The Life and She's Leaving Home on the Sgt. Pepper (1967), but from that album on the connection between lyrics and instrumentation was not so clear anymore.

¹ The keyboard solo was played at half speed. Later the tape speed was doubled and therefore the solo sounds like a cembalo (Lewisohn 1988, 65).

² Although similar in theme to the *Strawberry Fields Forever*, Penny Lane was already mentioned in the beginning of Lennon's original manuscript for *In My Life*: "Penny Lane is one I'm missing/ Up Church Road to the Clock Tower . . ." (Robertson 1990, 46).

The years 1965-67 were important in defining how and why classical instruments were used in the first place. After 1967 they started to be more than just an instrumentation. For example, the Beatles attempted to incorporate an art influence into their music, using methods avant-garde composers used, such as the orchestral crescendo for A Day In The Life (Moore 1993, 81, Lewisohn 1988, 14). After that point, classical instruments were by then an old technique for the Beatles, established as a "Beatle-instrumentation", and thus could be used on any kind of song. This was evident in such songs as Magical Mystery Tour (1967) and It's All Too Much (1967), whose instrumentation included trumpets, and All You Need Is Love (1967), which had a brass section reinforced with violins and cellos that quoted a Bach invention, Greensleeves and Marseillaise. Classical instruments were used in I Am The Walrus (1967), which made an exception as the lyrics were partially nostalgic, as they were inspired by John Lennon's old school song (Shotton & Schaffner 1983, 217-218). Blue Jay Way, The Fool On The Hill, Hello Goodbye and Across The Universe from the year 1967 had all classical instruments as part of the instrumentation as did Good Night, Hey Jude, Mother Nature's Son, Dear Prudence, Piggies, and Martha My Dear in the following year. There were still some nostalgic songs, for instance Glass Onion and Honey Pie having classical instrumentation, but the relationship between the nostalgic lyrics and classical instrumentation did not exist anymore.

During the last two albums there were special factors that accentuated the use of classical instruments. When recording the album *Let It Be* (1969), the Beatles had the intention to do a live show or otherwise get back to their roots, but in the end the album was produced by an American producer, Phil Spector, who added strings to several songs, against at least Paul McCartney's wishes (Dowlding 1989, 252, 256). These songs, nonetheless, are considered as valid occurrences of the parameter. On making *Abbey Road* (1969), the Beatles knew it would be their last work and tried to create the album the way it was done in the old days, meaning the creative, experimental period (Dowlding 1989, 273). Therefore the album featured classical instruments on a considerable number of songs.

This chronological development described above can be read from the summary displaying the population of nostalgic songs and population of songs that use classical instruments (See Figure 4.1).

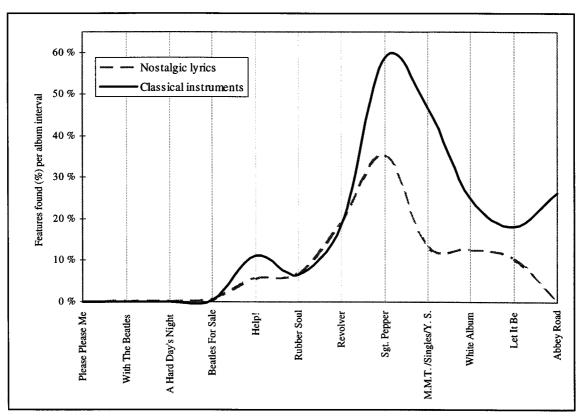


FIGURE 4.1. Population of nostalgic songs and songs that use classical instruments.

Figure 4.1 shows the population of nostalgic songs and classical instruments. As can be seen, they are similar in their overall shape despite the fact that there are fewer nostalgic songs. As described previously, first tentative uses of the parameters are visible in the figure above and both can be observed to have their peaks in the *Sgt. Pepper* (1967) album, after which their use declines. Also, the last album, *Abbey Road* (1969), displays the exception mentioned earlier, as classical instrumentation was favored because of the return of earlier production values.

Population curves in Figure 4.1 are also comparable with the normative life span of style, which they resemble. When the curves were compared to the model, the correlation values were in both cases 0.90. The results were highly significant (p < 0.001).

Even though the curves are very consistent with each other and exhibit the peaks at the same place, it fails to confirm the existence of the thematical connection between them. Also, the population distribution of these two examples may just coincidentally be similar to the normative life span of style. In order to assess these problems, it is necessary to inspect another pair of novel ideas.

4.1.2 Psychedelic instrumentation and corresponding lyrics

Psychedelic lyrics, Indian instruments and sound effects might be considered thematically linked as they all reflect similar ideology. This link is looser than the one presented between nostalgic lyrics and classical instrumentation as in this case the whole ideology of the time can be considered to have influenced the use of all the parameters to some extent. Psychedelic counterculture emphasized complexity, Eastern mysticism and the use of drugs (Moore 1993, 100; Whiteley 1992, Middleton 1990, 28). Nevertheless, as a direct continuation to awareness of the songs lyrics, they started to write in a wittier style that soon evolved towards more obscure lyrics, again very much influenced by ideology and Bob Dylan's lyrics. Psychedelic lyrics were colorful, sometimes mystical, difficult to interpret and often contained references to drugs. Using instruments that belonged to an even more different culture, was also a continuation to the innovative trend that started four months earlier in the use of classical instruments. Indian instruments and sound effects correspond to the psychedelic lyrics in the way that the former is analogous to Indian mysticism and the latter to paranormal experiences often associated with the use of drugs (Middleton 1990, 28; Whiteley 1992). Therefore, psychedelic songs are not exclusively those songs that are done lyrically and musically under Indian influence which therefore use Indian instruments (e.g., such songs as Within You Without You, 1967). Instead, Indian instruments, effects and psychedelic lyrics were mostly used as ingredients for any song of the period. As in the previous section, I will consider next how these parameters were at first established, what was their mutual connection and how well they support the hypothesis of the normative life span of style.

There are different interpretations how the Beatles ended up using Indian instruments. One of them is that George Harrison happened to become interested in Eastern instruments after seeing and trying one of them (sitar) on the set during the filming of the

¹ The drug usage of the Beatles can be roughly divided as follows: 1960-64 different kinds of stimulants, 1964-66 smoking marijuana, 1966-68 LSD and later cocaine to some extent, but in 1968 during a trip to India the use of drugs was reduced. (Coleman 1984, 264-267, 407: Miles 1978, 115-118.).

movie *Help!* between March and April in 1965 (Davies 1968, 251-252). Four months later Harrison and Lennon, on the Beatles' American tour, met the Byrds who were already interested in Indian music. The Byrds showed them what they knew about the music of Ravi Shankar, a famous Indian sitar player (Rogan 1990, 60). It is very likely that both occasions contributed to the fact that John Lennon wanted to use a sitar besides the guitar in *Norwegian Wood* (1965) (Stuessy 1994, 121; MacDonald 1994, 132; Sheff 1981, 194). Love You To (1966), which was recorded six months later, also featured the sitar, but according to Harrison, "this was the first song where I consciously tried to use the sitar and tabla" (Dowlding 1989, 137). The pattern starts to remind how the classical instruments were at first tested and then thought appropriate and were then used more systematically.

In one sense, sound effects were used for the first time in the song I Feel Fine (1964). There was a new sound in the beginning of the song, which was done by causing a guitar deliberately feedback (Sheff 1981b, 184). Nevertheless, the first song that featured effects in the way defined here was Rain (1966). Lennon had just discovered how fantastic the sound of reversed singing was after accidentally playing the tape backwards (Sheff 1981b, 194). The lyrics of that song also speak of a state of mind, but better examples are about to come. For example, the lyrics in the song I'm Only Sleeping (1966) portrays fantasy and chemically induced lethargy (Shotton & Schaffner 1983, 213). It has a hallucinatory, backward guitar solo as an effect (Riley 1988, 185; Lewisohn 1988, 78). Similar ingredients are in the song Tomorrow Never Knows (1966), which was according to Lennon the first psychedelic song (Dowlding 1989, 145). The lyrics refer to the psychedelic manifest popular at the time.² Besides an Indian sitar, the song has several sound-effects made by individual tape loops (Lewisohn 1988, 72; Denyer 1985a, 57). Yellow Submarine (1966) employed various shouts and mechanical voices associated with a submarine (Dowlding, 1989, 139). Within You Without You (1967) on Sgt. Pepper album was regarded as the best example of Indian influences by the Beatles themselves. There were

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¹ The Byrds never actually used any Indian instruments in their records. Nevertheless, they recorded the first version of *Eight Miles High*, which featured a prominently sitar sounding instrument (12-string guitar), a week before (1.11.1965) The Beatles' *Norwegian Wood*. (Rogan 1990, 62, 264).

² The Psychedelic Experience which was Timothy Leary's and Richard Albert's interpretation of the Tibetan Book of the Dead (Dowlding 1989, 145). Lennon has told of having read it at the time (Shotton & Schaffner 1983, 213; Sheff 1981b, 196).

more effects on the same album varying from the applause of the crowd (*Sgt. Pepper's Lonely Hearts Club Band*) to animal voices (*Good Morning Good Morning*), alarm clock (*A Day In The Life*) and tape loops (*Being For The Benefit Of Mr Kite*) (Lewisohn 1988, 99). Later the effects ranged from the sound of a passing bus (*Magical Mystery Tour*) to a random radio program (*I Am The Walrus*). The song made mainly by Lennon, *Revolution #9* (1968), which is "world's mostly distributed avant-garde artefact" (MacDonald 1994, 230), consisted of random tape loops (Lewisohn 1988, 135) and reminded of the work by the German composer, Stockhausen. Generally the stylistic features can be seen to near more perfect, typical ones as they are used more, such as in 1967, also evident in the examination of the previous stylistic features. Regardless of the quality of the experimentation, the effects or Indian instrumentation was seldom used in the last albums, following the trend parameters I described earlier. Also, in early 1968, the connection between the effects, Indian instruments and lyrics seems to break down. By then, the effects and Indian instruments had also become an "old trick" that could be used whenever deemed necessary, substituting the traditional instruments.

This description of the chronological development and connection between lyrics and instrumentation resembles fundamentally the two previous parameters. Figure 4.2 displays the population curves of psychedelic instrumentation (Indian instruments and effects) and lyrics.

¹ Interestingly, the personal contributions to the different stylistic features would seem to (roughly) stress separate members of the Beatles: Lennon - effects, McCartney - classical instruments, Harrison - Indian instruments.

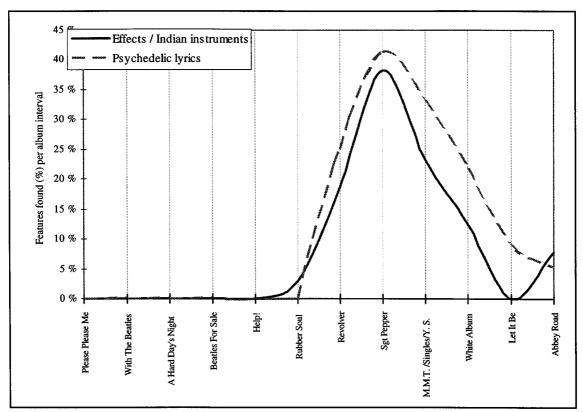


FIGURE 4.2. Population of psychedelic instrumentation and lyrics.

Figure 4.2 shows that these two parameters have similar population curves. The curves are also similar to the ones displayed earlier: The population peak is also here in the *Sgt*. *Pepper* album and the last two albums emphasize the use of innovative features differently.

The population curves were compared to the model of the normative life span of style. The resulting values, 0.98 for the psychedelic lyrics and 0.95 for the (average value of) Indian instruments and effects, were both highly significant (p < 0.001).

As all these parameters are held as typical ones of the Beatles' experimental period, it might be possible to perceive the whole period by these population curves. The life span of these well-known new ideas would then represent the whole experimental period and style. The results suggest a strong correlation between population curves of these selected parameters and the model, but these findings may be special cases and therefore the results must remain tentative at this stage.

4.1.3 The connection between lyrics and instrumentation

Although the connection of the lyrics and instrumentation cannot be implied from the existence of a strong similarity of their population distributions, it is possible to compare the results in a way that supports the hypothesis of their mutual connections. Statistically the connection between lyrics and instrumentation is as follows: Almost ¾ of nostalgic songs have classical instruments as part of their instrumentation and ¾ of psychedelic songs have corresponding instrumentation. More revealing is that most of the songs containing both parameters are at the beginning of the experimental period, which supports well the hypothesis that *at first* the instrumentation was thematically connected with the lyrics. Figure 4.3 shows the relative number of songs that use classical instruments and have simultaneously nostalgic lyrics and also the songs that use effects or Indian instruments and have simultaneously psychedelic lyrics.

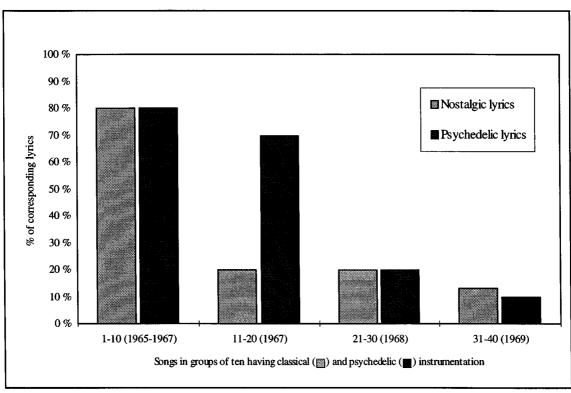


FIGURE 4.3. The relationship between instrumentation and lyrics in the experimental period of the Beatles.

In Figure 4.3 the x-axis displays all the songs that used classical instruments and psychedelic instruments at equal, ten-song intervals (which is approx. one-year period, except the first interval is longer) and the y-axis represents the relative amount of songs having corresponding lyrics. During the ten first songs (18.2.1965-19.1.1967), there is a predicted connection between the instrumentation and the lyrics in both parameters, but after that the connection does not exist although the psychedelic lyrics seem to be connected with their instrumentation longer. This may be because they were developed later and there were more of them. In any case, by late 1967 (early 1968 for the psychedelic lyrics) there was no more such a connection between instrumentation and lyrics as there was in 1965-67.

Regardless of the results, it can be argued that lyrics did not *cause* the instrumentation, which was not claimed above. The purpose of this section, however, was more to help clarify the experimental period of the Beatles in another way besides the population of the stylistic features. It was important to observe the origin of the experimental period by selected new ideas, especially when they could be seen as a reflection of each other and as the results of earlier ideas. Later in the experimental period the ideas were not connected with each other, conceivably because the novel ideas in 1965-66 had established themselves as standard stylistic features by 1967-68.

4.2 Statistical rise and fall of the Beatles' stylistic periods

The main result, the experimental period is presented by demonstrating the sum of all its individual parameters and comparing it to the model. Then the concept of the life span is considered from other perspectives this material offers: the early period, the summary of all three of the Beatles' periods and finally the skewness of the distribution and the estimation of the periods will be considered in detail.

4.2.1 Experimental period

The population curves of the previous examples were found to be similar to the normative life span of style. In fact, most of the experimental period parameters exhibit curves that are highly similar to it, with only minor deviations. This can be observed by studying their correlation values, provided in Table 4.1.

TABLE 4.1. Correlations between the stylistic features of the Beatles' experimental style and the normative life span of style.

Parameter	r	# of samples
bVII	0.81	31
Changing meter	0.93	28
Classical instruments	0.90	38
Descending bass line	0.89	34
Effects	0.96	29
Indian instruments	0.82	9
Nostalgic lyrics	0.90	18
Political lyrics	0.64*	16
Psychedelic lyrics	0.98	25
Static harmony	0.92	22
Tone repetition	0.80	32

Significant at p < 0.01 except * p < 0.05

Total = 282

It is evident from the Table 4.1 that the correlation values (r) are all high: the values are all highly significant at p < 0.01, except for the political lyrics at p < 0.05. Although the degree of freedom (df=8) is low, the results reach the 1% level of significance. The low correlation of political lyrics may partly be explained by the definition of the feature. In other words, my simple method of textual analysis is incapable of distinguishing such subtle nuances as the alleged political theme of the Sgt. Pepper album consisting of "optimistic escapism . . . [which] set an agenda for a counter-cultural response" (Whiteley 1992, 40; see also MacDonald 1994, 185). Although the effects and Indian instruments are observed separately in the table above, they are consonant with the previous results.

The results are derived from individual populations, which are only a tenth of the size (on the average 25 samples/parameter) of the Gjerdingen's study (272 samples) acting as the model. However, the total amount of samples (282) of all the parameters of the experimental period, is equal in size. Despite the high correlation values, one has to be especially careful in making any conclusions about the parameters that have a low amount of samples, such as Indian instruments.

The variations between the features become less crucial when they are grouped together, making the results less prone to singular deviations. Using the average of all the parameters is possible because the data has the same level of measurement. Furthermore, the population size of all the experimental parameters and the model is equal. Displaying the average of all the eleven parameters with the model illuminates the experimental style of the Beatles and how it relates to the normative life span of style (Figure 4.4).

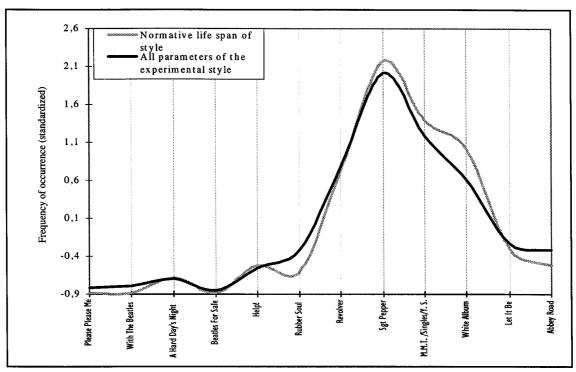


FIGURE 4.4. Population of all the Beatles' experimental parameters and the normative life span of style (Gjerdingen's data).

In Figure 4.4 the curves of all the parameters of the experimental style and the normative life span of style, based on the standardized values, appear to be surprisingly similar in

shape, which was substantiated by the resulting correlation between the corresponding values, 0.98, which was highly significant (p < 0.001). The previous results were thus replicated, but there is still a possibility that a curve based on the average values of all the parameters is biased by the few dominating features getting extreme values. This effect can be negated by referring to the results in Table 4.1, where the parameters were observed to have reasonably homogeneous statistical distributions. As a further proof, the individual parameters were tested for their standard deviation by using the split-half method. In this method the parameters have been arranged in two groups (see Table 4.1, the first six parameters before the dotted line belong to the Group I and the rest to the Group II). The correlation value between them was 0.95, exceeding well the minimum expectation (0.9) for the results to be reliable.

Another question is the positive skewness of the curves, explained by the conserving or retaining effect of memory. This was tested by comparing the curves with the normal distribution. None of the curves of the parameters were skewed in the opposite direction and almost all of them exhibited positive skewness, where all but two parameters received lower correlation values in the comparison. The two exceptions were Indian instruments, having a low amount of samples, and tone repetition, displaying its peak earlier.

Because the normative life span of style is a general model, it can be applied to the early period, even if the origins of those parameters do not directly fall in the time span studied here.

4.2.2 Early period

It was assumed that comparing the life span of the early period parameters to the model might provide directional information about the normative life span. Also, it is interesting to see them in conjunction with the experimental parameters. Table 4.2 shows the correlation values and the amount of the samples of the early period features.

TABLE 4.2. Correlations between the stylistic features of the Beatles' early style and the normative life span of style.

Parameter	r	# of samples
Basic line-up	-0.79	126
Cover songs	-0.59*	25
Harmonica	0.16	13
Ornament	-0.84	30
Romantic lyrics	-0.88	120
Three-part singing	-0.63**	21
Yeah & wow -screams	-0.68**	59

Significant at p < 0.01 except * p < 0.1 ** p < 0.05 Total = 394

As Table 4.2 indicates, the correlation values are all highly negative, apart from one. The exception, a harmonica, was noted as a problem case in the definition (See p. 39) and it was also used in some songs written and recorded in the experimental period, which affects such a small population (13) a great deal. Three-part singing, cover songs and yeah and woo -screams also get quite low correlation values although significant ones (p<0.1).

The average of all the parameters of the early style was compared to the normative life span of style and to the average of the experimental period parameters. The correlation value in both comparisons was -0.89, highly significant but in the opposite direction. However, the results were notably lower than the results obtained from the features of the experimental period. The statistical reliability was also tested as before. In short, the correlations are still high, but the results are not as substantial as they were concerning the experimental parameters.

Strangely enough, the correlation values were unusually high although the parameters represent, technically, only the latter half of the normative life span of style. The high negative correlations report that there is a connection with the model, although it is almost the opposite one. This is not contradictory to the results obtained previously. Rather, the population curves of the early period must be in a different phase than the population curves of the experimental period. The early period parameters are already at their peak in 1962, but the parameters were naturally learned earlier, during the formative years (1957-62) when they imitated the music of their American idols. If the early part would be

measurable in some way it would provide more information. Now the decline of early style is only evident in the time span studied but the early stylistic features also come back during the late period. This, and the distribution of the early period parameters and the possible difference in the phase compared to the experimental period, can most easily be confirmed from the summary of the periods.

4.2.3 Summary of the periods

Presenting the curves of the experimental and early parameters in the same figure sums up how the different periods of the Beatles distribute chronologically. The whole career, the three periods of the Beatles is thus summarized in a simple way, because the late period was presumed to comprise, if at least for the purposes of this study, of the early- and experimental style features (Figure 4.5).

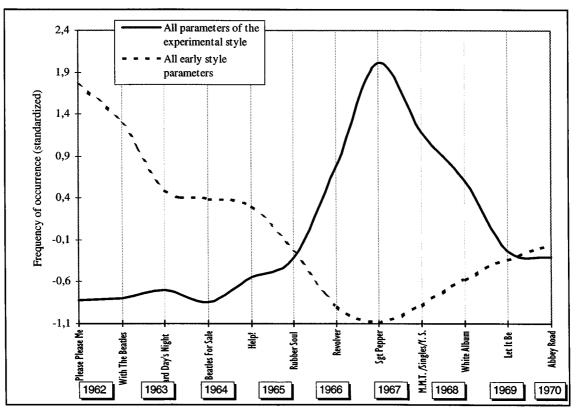


FIGURE 4.5. Population of the Beatles' early - and experimental style parameters.

In Figure 4.5, there are year-labels added to the summary to ease the analysis, although the chronological intervals are not absolute ones. Different periods can be explicitly seen to overlap each other. It is worth mentioning that the lowest point of the early period falls at the same place as the peak of the experimental period (*Sgt. Pepper*, 1967). In a way it is natural, because the instrumentation greatly affects both style periods: New instruments came to replace the old ones but the basic line-up still acted as the foundation when the instrumentation was expanded. However, this explanation leaves several parameters unconsidered and therefore the summary renders the parameters as truly representatives of the early period, which were not used during the experimental period. Therefore the chronological presentation of the parameters is able to tell in its own objective way what kind of periods the Beatles' three periods were and when they were.

Also, the unanswered question about the high degree of relationship between the early period parameters and the normative life span is illuminated above. Only the experimental period displays a complete life span, although three separate periods are evident. The early period and the late period can be seen to create only partial life spans, but as these partial life spans consist of the same parameters, they coincidentally raise the (negative) correlation with the model. Therefore the results obtained from the early period suggest that the early style might exhibit a normative life span but more importantly, the results illustrate the way several periods work in succession.

The late period can be seen to consist of the early parameters and the experimental parameters, although it has also other stylistic features which were not studied here. Therefore, the late period could be termed as a synthesis of the old and new. The overlapping of the periods is also evident in 1965 when experimental period made its breakthrough and also in 1968, at the beginning of the late period. Details of the Beatles' periods can be read from the figure, such as like *Rubber Soul* (1965) album having considerably fewer parameters of the early period than there were three years earlier and that the early period parameters are on the rise on the *White Album* (1968). For the complete picture of the Beatles' musical style periods and the career, however, it is useful to assess the statistical facts with the songwriters' own comments about the stylistic change.

4.2.4 Songwriters' point of view

Generally speaking, the Beatles themselves support the way the periods are displayed in the statistical presentation. There are many accounts of how they started the experimenting. Some of them were quoted previously (See internal factors affecting the Beatles' experimental period, p. 39). For example, in November 1968, John Lennon described the beginning of the change from the traditional style by listing songs from 1965, where the experimental period, also according to Figure 4.5, began: ". . . Day Tripper, Paperback Writer, even. Ticket to Ride was one more, I remember that. It was a definite sort of change. Norwegian Wood - that was the sitar bit" (Cott, 1968, 47). Both McCartney and Lennon characterized *Sgt. Pepper* album as being the peak and McCartney explained in 1967 the reasons why it was possible to go as far and make *Sgt. Pepper*: "We're so well established that we can bring our fans with us and stretch the limits of pop." (Stuessy 1994, 125; also Wenner 1971a, 138). Lennon's review of the experimental period in 1968 conveys how he saw the experimenting and the beginning of the next (late) period (Cott, 1968, 48):

I mean, we got a bit pretentious. Like everybody, we had our phase and now it's a little change over to trying to be more natural, less "newspaper taxis," say. I mean, we're just changing. I don't know what we're doing at all, I just write them [songs].

The answer reveals the aspiration of returning to a simpler, more natural expression meaning basic rock and roll, after a psychedelic period, where the "newspapertaxis" refer. McCartney has also commented similarly (Dowlding 1989, 221). The change, however, began already in *Sgt. Pepper*, as expressed by Lennon: "After Brian Epstein [the Beatles' manager from the year 1962 to his death on 27.8.1967] died we collapsed. . . . That was the disintegration" (Wenner 1971a, 138, 51). Or to quote McCartney (Garbarini et al. 1980, 71): "The White Album. That was the tension album. We were all in the midst of the psychedelic thing, or just coming out of it. . . . we were about to break up." Both quotations characterize the gradual beginning of the late style that followed the gradual decline of the experimental style, hence the overlapping nature of the periods. As can be seen, the songwriter's comments can be easily connected to the figure which just presents statistical

data and to the general knowledge of the periods. However, the best summary of the Beatles' career has been given by their close associate George Martin:

If the Beatles' professional career were to be plotted on a graph, then the *Pepper* would be the high point. *Rubber Soul* and *Revolver* were also peaks. *Magical Mystery Tour* was a definite dip. *The Beatles* [White Album] was a straight line on the graph, a plateau . . . *Let It Be* was also a bit of a down slope on the graph, whereas *Abbey Road* was a lift, a great album. (Martin & Pearson 1994, 159)

The concept of the life span seems to relate well to the occurrences of the stylistic features, even if there were few inconsistencies, and at least to how the periods are characterized by the songwriters. Moreover, it was argued that the typicality and the population peak is closely linked with each other and to how the periods are estimated and perceived, which was evident in some respects in the songwriters' comments. These questions will be considered in the following section.

4.3 "Prototypical" songs

According to Gjerdingen the prototype of a musical structure will be found at the population peak (1988, 104). As defined earlier, the prototype equalled the typical musical structure of the period and those typical members of the category are more easily recalled and thus used in generalizations (Ashcraft 1989, 300). The concept of the prototype represents a version of a schema that is as close as possible the definition of the schema in question. However, the prototype does not have to have all the parameters associated with it, although the more it has, the more typical it is considered to be (Rosch 1978, 37). When looking at the Beatles' experimental period as presented earlier (Figure 4.4), the population peak was found to be in 1967, in the *Sgt. Pepper* album. As I have defined the experimental style of the Beatles as having eleven stylistic features, the prototypical song of that period would have most (and the most prominent) of those parameters. Thus it could be said that generally such a song would have tone repetition, bVII chord, instrumentation that uses

classical instruments and sound effects. The subject of the lyrics would be nostalgia and they would contain psychedelic metaphors. To have a concrete example, it is possible to find and list the songs that fulfill most of the parameters. Those songs would be the prototypical songs of the period and could be evaluated against the common knowledge of typicality of the period and the songs. Their recording dates also test if the typicality and the population peak really match as Gjerdingen claims. The Table 4.3 contains the appropriate information.

TABLE 4.3. The "prototypical" songs of the two periods of the Beatles.

TABLE 4.3. The "prototypical" songs of the two periods of the Beatles.					
	Early period				
Date	Name	#	Format *	Authorship **	
11.2.1963	Chains	7		О	
11.9.1962	Please Please Me	5	single (A)	L	
11.2.1963	Twist and Shout	5		O	
5.3.1963	From Me To You	5	single (A)	L (50%) M (50%)	
1.7.1963	I'll Get You	5	single (B)	L (50%) M (50%)	
18.7.1963	Devil In Her Heart	5		O	
30.7.1963	It Won't Be Long	5		L	
30.7.1963	Please Mr. Postman	5		O	
2.6.1964	When I Get Home	5		L	
26.11.1962	Ask Me Why	4	single (B)	L (70%) M (30%)	
	Experimental period				
24.11.1966	Strawberry Fields Forever	9	single (A)	L	
19.1.1967	A Day In The Life	8		L-M	
15.3.1967	Within You Without You	7		H	
5.9.1967	I Am The Walrus	7	single (B)	L	
29.12.1966	Penny Lane	6	single (A)	M(80%)-L(20%)	
1.3.1967	Lucy In The Sky With Diamonds	6		L(80%)-M(20%)	
25.4.1967	Magical Mystery Tour	6	EP (A)	M(90%)-L(10%)	
8.2.1967	Good Morning Good Morning	5		L	
14.6.1967	All You Need Is Love	5	single (A)	L	
17.2.1967	Being For The Benefit of Mr. Kite	5		L	

^{*} Format as published in U.K.

Table 4.3 has recording dates in order to examine how well the typical songs fit into a peak for that period. Besides the total amount of parameters (#), there is the format of the song (if it was a single and on which side it was on, U.K. publications). Singles are mentioned

^{**} Authourship based on Dowlding 1989 (L=Lennon, M=McCartney, H=Harrison and O=others)

because they were sold in great quantities: in the case of the Beatles hundreds of thousands and most of their singles were positioned high on the American and the English billboards. It is however questionable how much knowledge about prototypical songs and periods can be gained by relying on the facts about the sales of the records, so I will not present the actual list positions of the songs. Although I cannot take into account the mysterious forces, media and markets, affecting the sales of the records, the sales relate to typicality in the sense that usually the songwriters or a representative of the recording company (George Martin), chose the songs for the singles as the best or most typical examples for that period of recordings. Authorship mentioned in the table provides guidelines for further analysis and evaluation of the songs, although the question of authorship has not been considered in this study in detail.

When looking at the ten most prototypical songs of the early period, four out of ten are cover songs, which is a substantial amount, considering they recorded and included to their albums twenty-five cover songs (approx. 10% of all their songs) during their whole career. The problem with the presentation of the early prototypical songs is that they consist of a low amount of parameters (7) which are distributed in different ways. For example, the use of the harmonica stresses the beginning of their recording career and the basic line-up, on the other hand, is distributed more uniformly across their career. In spite of these factors it is noteworthy that 40% of the prototypical songs of the early period are singles.

The ten topmost prototypical songs of the experimental period (See Table 4.3) portray it remarkably well. Most encyclopedias of popular music mention the five first songs as the most significant or typical songs of the experimental period and half of the songs came out on the *Sgt. Pepper* album, which was acclaimed as the peak. The songwriters themselves have mentioned in different situations most of those songs as their personal favorites (Wenner 1971b, 110; Sheff 1981a, 107). George Martin assesses the song that fulfills the greatest amount of parameters, *Strawberry Fields Forever*, in his book

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¹ Also, George Harrison published in November 1987 song called *When We Was Fab*, a satire which, in his own words, "would evoke a Fabs [abbrev. of The Fabulous Beatles] song" (White 1990, 157). Curiously or inevitably enough, it is like a model example of a Beatles' song of the experimental period, containing most of the features defined and found prominently here.

about the making of Sgt. Pepper (Martin & Pearson 1994, 24): "We could not have produced a better prototype for the future." Martin means the prototype as a model for the future but the Beatles actually did not proceed much further into experimenting than that, except for the avant-garde -influenced work *Revolution #9*. Consequently the notion Martin uses is in fact closer to what is meant here with typicality. *Strawberry Fields Forever* combines so many parameters of the experimental period that it serves as the most prototypical song of that period. It could be said in a pointed way that everyone who has some stylistic knowledge about the Beatles has abstracted a prototype that would include most of the parameters listed here and therefore the perfect example, *Strawberry Fields Forever*, might be most easily remembered if people were asked about what was a typical song of the experimental period of the Beatles.

According to the model, the most typical songs should also be found at the same place as the population peak. The ten prototypical songs of early period were recorded between 11.9.1962 - 2.6.1964, which is rather a large time frame. Most of the songs were recorded in 1962 or 1963 which is no surprise, but as mentioned earlier, the early period parameters might not represent the early period as a whole so well.

Ten of the most typical songs of the experimental period, however, were recorded between the dates 24.11.1966 and 5.9.1967, within a ten-month period, which is well within prior assumptions, that is, the population peak of that period. Closer inspection shows that most of the ten prototypical songs were recorded during the early months of 1967 which supports the hypothesis of the population peak and the typicality well.

Why do John Lennon's songs seem to dominate the list of experimental songs? During the period normally regarded as experimental, McCartney wrote slightly more songs (see Dowlding 1989, 300). However, the definition of the experimental period, namely, the parameters chosen, may have favored Lennon, because the lyrics (and effects) have been noted to be more Lennon's area than McCartney's. Nonetheless, both songwriters were interested in technical improvements and although McCartney was earlier interested in experimenting and avant-garde (Lewisohn 1988, 14-15), Lennon became more enthusiastic about the experimenting in itself and from November 1967 onwards this disposition was probably reinforced by his creative partner Yoko Ono (Robertson 1990, 77). However, Ono's influence cannot account for Lennon's dominance as the prototypical

songs were all recorded before November 1967. One explanation might be apparent in John Lennon's comments about the recording process during the experimental period:

We would play experimental games with my great pieces, like Strawberry Fields. . . We would spend hours doing little, detailed cleaning up on Paul's songs, but when it came to mine . . . somehow an atmosphere of looseness and experimentation would come up. (Sheff 1981a, 114)

Whatever the reason is, experimenting is certainly not to be confused with musical competence, and songwriting also differs from the recording process. Many things influenced the final realization of a song and tracking them down is another question altogether and beyond the scope of this study.

The late period of the Beatles is not entirely under inspection in this study but as a final test it is possible to attempt to stretch the theories and quantitative method to characterize the late period. It was said to comprise of the stylistic features that were common to the earlier period and to the experimental period. As a test, all the songs that have two or more parameters of *both* earlier style periods were found. Nine of the ten topmost songs in this measurement fall between the period of 18.7.1968-21.7.1969, which at least proves that premises for the characterization of the late period was right because the period is seen to consist of the parameters from both previous periods.

There are also other songs that are generally regarded as very typical for the Beatles that failed to show up in the results. Such songs as Yesterday (1965), She Loves You (1963) and I Want to Hold Your Hand (1963) are often associated with the Beatles, but as this study focuses on the periods, some information must be omitted in order to do abstractions such as this. Even if this abstraction is similar to the one people use when categorizing data from their environment, this method is unsuitable as such for a critical analysis and should be rather used in conjunction with an analysis of the individual pieces.

Naturally, the popularity of the songs does not have to follow any strict periodization. A good, catchy melody and the public opinion, live appearances, marketing and media forces are as important a part of the popularity as anything to do with the song itself. Nonetheless, the prototypical songs of the experimental period brought the stylistic features back to the concrete level and thus provided reliability to the results, to the typicality and the population peak. On the other hand, the prototypical songs of the early period were

more varied in their distribution, but still fulfilled the same principle and served as something to compare the other results to.

5 SUMMARY AND DISCUSSION

The concept of the life span has a long past mostly in the metaphorical sense, but here a specific model based on a melodic pattern common in classical music was used to inspect the life span of style. The normative life span of style was tested with several stylistic features in popular music and in a shorter time span. Related hypothesis was that the most typical examples of the style would be found on the population peak.

The hypothesis for the normative life span of style, which was based on Gjerdingen's study (1988), was strongly supported by the results from the experimental period of the Beatles. The distribution of the stylistic features displayed the positively skewed statistical normal distribution. The high degree of relationship between the model and the material in this study came initially as a surprise. Nonetheless, the results were consistent in subsequent examinations: The results were at first replicated by studying the nostalgic lyrics and classical instrumentation and then the psychedelic lyrics and corresponding instrumentation. The initial connection between these features was also considered but both pairs were mainly inspected to describe the way the process of change started. Because the time span studied did not include the beginning of the early period of the Beatles, it did not demonstrate the normative life span as well but the model also had relevance there too - the distribution of the early period parameters was almost the opposite of the model. Moreover, the results from the early period were useful for displaying the overlapping nature of a style and for the analysis of the Beatles' whole career. The other hypothesis concerning typicality and population was proved by finding the most proto-

typical songs of each period. The songs obtained were appropriate to the common knowledge and the literature about the Beatles. Thus they reinforced the connection between the typicality and population, the validity of the chosen stylistic features and ultimately the concept of the life span of style.

5.1 Conclusions

The rise and fall of the Beatles' experimental style was found to be more than a metaphor: The stylistic features of the Beatles' experimental style and their statistical distribution exhibited curves highly similar to the normative life span. The three stylistic periods of the Beatles and the nature of style change including the overlapping nature were also demonstrated. The results portrayed the career of the Beatles and their musical style periods adeptly and the study provided support for the normative life span of the style on a different time scale and in a totally different type of music. However, based on one band and mainly its one stylistic period, it is unwise to generalize the results freely to different musical styles. There is the possibility that all the factors affecting the songwriting process, such as the ideology, technology, personality and such, may affect the periods in a way which was not covered here. In spite of all this, the results were remarkably similar to the model which was obtained from a different musical tradition and encompassing a much longer time span.

The history and the theory of music benefits from analysis methods such as this which take into account musical parameters based on units that are relevant to the perception. Statistical methods can be used to study these units as we make our daily decisions based on a similar process: It is a part of our appreciation of art. We compare, for example, new songs we hear with our stereotypical assumptions. The comparison helps to understand that style, the individual works and their peculiarities within that style or period, but possibly other styles and periods as well. Although the methods used in this study do not tell us why the changes happen or where they originate from, it could be a way of illustrating the change, supporting other methods.

5.2 Reliability

The reliability of the methods used in this study was supported by using a split-half method and comparing the curves to the normal statistical distribution. The amount of the samples was smaller concerning the individual stylistic features compared with the model and the material which had been obtained. This was evident in some cases as deviations from the norm but they could be reasonably explained. However, the total amount of samples of the experimental parameters was equal to the model.

Validity was tested by the concept of prototype. The prototypical songs proved to be characteristic of the experimental period on the basis of the common knowledge, expressed by the songwriters themselves and presented in the encyclopedias. The most prototypical songs obtained from the early and late period corresponded similarly with some exceptions.

The stylistic features were chosen as the most easily perceivable of the style period in question, consequently, the expectations for the high relationships and for the typicality existed. The high degree of correlation between the model and the results may be due to several factors. First, the material was an ideal one because from 1964-65 onwards the Beatles consciously aimed at innovating their music and were able to achieve obvious development. Many of the features may have been linked together by the idea of creating something new, thus their individual life spans just reflect the total idea the Beatles strived for. The problems concerning the creative efforts of some members of a band instead of a single composer are not essential as the results of Gjerdingen's study are based on the creative efforts of almost sixty composers.

The results exemplify the periods of the Beatles genuinely because they consisted of all the material they officially recorded during their career. It could have been possible, however, to have more finely defined parameters to get more details out the results. For example, additional stylistic features could have been the form and the structure of the songs and the melody. The problem is that they are such complex objects of analysis and

thus would have complicated the study,¹ and I doubt that they would have made any difference to the results. Nevertheless, *A Hard Day's Night* (1964) album for example, is different from the previous album in many subtle ways, which was not possible to display with the methods used in this study.

Even if the normative life span of style was demonstrated by a less than total coverage of all the stylistic features of the Beatles' music, it is more of a question what the aim of the study is. Aligning with the aim of the style analysis, the purpose was to examine the change and one period as a part of the categorical periods in which we divide the music that sounds different. Yet, it is interesting that it was possible to answer some questions about the quality of the style change even if the results display the quantity of the stylistic features. Therefore the features, I think, were adequate for the purposes of this study and in the light of the results the stylistic features chosen can be considered as meaningful ones.

A further discussion of how the life span of style and the periods are perceived is needed, especially concerning the specific shape of the life span and the common estimation of it.

5.3 Estimating the life span of style

The normative life span appears to portray the material of this level well. Thus the asymmetricity of the normal distribution caused by the memory was evident. The results were also consistent when the individual samples of the parameters and the total amount of samples were allowed for. The Beatles' experimental style was depicted well by the graph: Each album could be seen to contribute a certain amount of experimenting to the period, which was distributed chronologically in a positively skewed manner. However, our common assumption about the life span and the periods would present them more uniformly, without the asymmetricity. Moreover, in these estimations people often consider

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¹ Cf. Rosner & Meyer 1982, 322.

(also evident in some of the divisions presented earlier, p. 32-33) the early albums to be more experimental than they here appear to be. The difference can either be in my decision for and definition of the parameters or the common estimation could be some way biased or both. The typicality nevertheless directs the estimations and the reasons for common estimation errors are explained in psychology with reasoning heuristics.

In the availability heuristic people evaluate "the frequency of classes or the probability of events . . . by the ease with which relevant instances come to mind (Tversky & Kahneman 1973, 207). Hence, a few good examples tend to dominate the generalizations we make. Also, the occurrence of typical examples is held more probable than it really is, known as the representativeness heuristic (Tversky & Kahneman 1972, 430, quoted in Ashcraft 1989, 550). What is more important, these biases might cause the overestimation of the beginning of the experimental period because it has to be at first compared with the knowledge of the early period to notice the change at all. In other words, "The atypical examples within an expected schema are recognized easily " (Mandler 1982, 105), and Yesterday (1965) is such an example. Therefore, both these biases might affect common judgements of this material: On the *Help!* (1965) album there is only one song that can be called experimental but because the example (Yesterday) is so striking (representativeness) and famous (availability), people are tempted to term the album more experimental than it would be from a quantitative point of view. Likewise, Rubber Soul (1965) has two distinctive songs, Norwegian Wood and In My Life, which affect the common estimations of the experimental period just in the opposite direction from the model.

Accordingly, the asymmetricity of the model might not be perceived at all because we tend to evaluate the life span of style and therefore the period by the most easily available and representative examples. This is parallel to Gjerdingen's second hypothesis, where the most typical examples were to be found on the population peak, which was also well supported by the results of this study.

In conclusion, memory causes the normative life span of style to be asymmetrical but reasoning heuristics and the generalization affect the estimation of it to be more symmetrical.

5.4 Discussion

The results are in accord with the historical view of the style, style periods and the style change. The metaphor of growth and decay and the overlapping nature of the style change was well demonstrated. The life span would seem to confound the concept of the rigid stylistic periods but be valid in its own accord. The differences in some earlier studies about the Beatles were seen in a new light. Besides showing the inherent difficulty in the periodic divisions, the results explain how the act of dividing the periods must leave out some information. For example, according to the results obtained here, the Beatles' three style periods are abstracted to encompass the following years: The early period (1962-65), the experimental period (1965-67) and the late period (1968-70). Also, it was demonstrated that the periods are wavelike, organic and subsequent periods overlap each other. Although the problem of the periodization is illuminated, the periods and the life span of style are both useful concepts for the analysis of the history of the style, the latter forcing us to comprehend the periods the way we perceive them, through abstractions, the typical examples.

The stylistic periods of the Beatles were earlier illustrated as blocks in time (See Figure 3.1, p. 33) and Broyles (1987) presented Beethoven's stylistic periods more organically (Figure 2.1, p. 22). Now it is possible to combine the ideas presented there by displaying the periods of the Beatles in such a way that the individual style periods consist of three modified normal distribution curves, positively skewed by the effect of memory (Gjerdingen (1988, 105), that is, ideal forms of the normative life span of style. All these are realized in Figure 5.1.

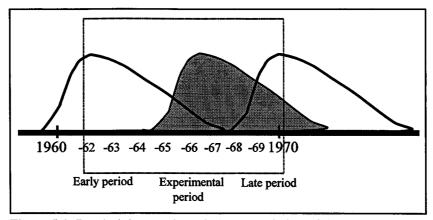


Figure 5.1. Beatles' three style periods as consisting of the normative life spans of style.

In the Figure 5.1 the square outlines the time span studied, namely, the recording career of the Beatles. The darkened period represents the experimental period. It is interesting to note that although the whole figure is a theoretical representation, it is not far from the results obtained from the real musical material, from the figure that displays both the early and the experimental period curves (See Figure 4.5, p. 70). Also, the effect of memory, which causes the distribution curve to be asymmetrical, is understood more easily when the periods and the ideas they represent are seen in conjunction with each other.

It might be possible that a similar figure (Figure 5.1) could describe longer periods and stylistic frames within them, in a higher hierarchic level of a style, as Gjerdingen's study did. Three hierarchic levels were earlier distinguished: (1) A large historical style period, (2) epochal style period and (3) personal style or career of the composer. The material in this study represented a personal style in the hierarchy, even if there were several composers, and can be placed in the style hierarchy and concrete history of popular music as follows:

- 1) Rock music, approx. 1950-1970.
- 2) British-invasion, in the 1960s.
- 3) The experimental period of the Beatles, 1965-67.

For example, Donald Clarke (1995) describes rock music as being born in 1950s and died "a heat death" in 1970s in his aptly titled book *The Rise and Fall of Popular Music*.

Similarly, the whole career of the Beatles can be portrayed by using a rise-and-fall metaphor but any period within it seems to fulfill a similar pattern. Accordingly, if the idea of
overlapping style periods, shaped as the life spans, is taken to explain the change in all of
the hierarchical levels, the change in the history of music is immediately seen as a more
complex series of events: A period consists of several composers' works and their individual stylistic periods, which create together epochal style periods and several epochal style
periods create a large historical style period and eventually several large historical style
periods. The basic pattern of change, however, might still be a similar one to some extent
in all of the hierarchical levels, although the reasons and the ways of change are completely
different. Also, on a larger scale, the history of music is seen as part of the general history
and working similarly as the creative human work in other fields, consisting of alternating
periods of stability and revolution.

A normative life span of style may prove functional for style criticism. The concept includes abstraction of art objects into a style, the act being a basic principle in human perception and also the essence of style criticism. It is also useful to understand the nature of style and style periods, and the way it changes constantly, usually without any gaps, even if the reasons for the change must be found elsewhere. This way, style analyst explaining the style periods afterwards, when they can be more easily divided, sees the continual change as the overlapping of several periods. Therefore the term for these periods can be used in two ways: Periods can be either as block-like or, when it comprises of stylistic features, more organic and possibly displaying the rise-and-fall pattern. Although many variables, such as artistic events, political events or composers' lives also affect the history of a style, they still share similar histories. Thus, the very act of categorizing, in a way, seems to force upon the data an anticipated shape because we all have minds that work in a similar way. This anticipated shape might be commonly known as a rise and fall, without any asymmetricity, the prototypes directing the evaluation of the periods. Whereas the prototype is directed by the central and the highest number of occurrences, it was also seen to enforce a common mistake in the estimation of the beginning of the period. Readily available, perfect examples might cause people to overestimate the beginning of the experimental period when it is compared with the knowledge of the previous period.

The actual life span of style, however, appears to be in statistical terms positively skewed by the effect of memory. The effect of memory should not be understood as a single memory trace, although the memory and its recall is involved. Instead, it might be described as the composer's intention to use new ideas. The amount of ideas remains almost constant because the old ideas inhibit the use of new ones, until the new ideas are after a while favored when they also become old ideas and so on. This process could be in other words termed as an innovative strategy, which would explain, especially in such a short time span as in this study, the life span of new ideas. Another question might then be when the new ideas become old ones and is using them a conservative strategy? As in this material, the Beatles were keen on taking new ideas outside the tradition between 1965-67 but after a while it might not have been possible anymore, because the musical style would have changed too rapidly: too much novelty compared to redundant information makes the music incomprehensible. Also, the process of the change would seem to take place in a shorter time span in popular music than in classical, which might be explained by more direct feedback from the audience and other artists. The circulation of the ideas is easier, the composers are influenced by a wider range of styles and the composing situation is more collective (cf. Hargreaves 1986, 206). Accordingly, in 1967 the Beatles started to use their own, earlier developed ideas, which is discernible in the comment Paul McCartney gave to Hit Parader magazine at the same time: "I think we're getting influenced by ourselves" (Garbarini et al. 1980, 71). Is this where the novel ideas become old ones because simultaneously the slow decline of the experimental period is seen to start? That would indicate the change in the process of alternating between the convention and invention taking place during the peak of the period.

5.5 Possibilities for further research

The approach used in this study offers a solid basis for future work, which could either concentrate on replicating the results and refining the methodology, or might concentrate on the reasons and inner workings of the normative life span of style.

The most direct continuation to this study would be the definition and analysis of the stylistic features, especially the early and the late period, of the Beatles' music more systematically, including those important ingredients of the music that were perhaps now overlooked. Speculations about how to make a "Beatle song" and how would the Beatles' career have continued can also be considered on the basis of this material. Secondly, it might be reasonable to attempt to replicate the results obtained in a different type of material. One can imagine how "the rise and fall of" bebop jazz or twelve-tone composing would work. Even something from a different field of the art might offer suitable material for study, if the material is at least something that has to do with creative ideas that will not either be permanent in the way useful technological innovations usually are, or be totally directed by external forces, which some fashions trends most likely are. Also, the data should be accessible and allow a reasonable size of historical material to be handled.

Another area of study might be focusing on the reasons for the definite shape of the normative life span of style. The effect memory explains it generally, although the collective memory and similar explanations would be critically examined in different types of material. The genesis of the ideas, the effect of ideology and personality and associated theories would in further research clarify the process of change. The composing process, which is largely based on the previously mentioned theories of creativity, might provide more information about the life span and the composing process itself. Moreover, this point of view would be closer to an even more fascinating question that has not been answered here: Why and what were the reasons for the innovations in the first place, why those specific innovations and where did they come from and what do they tell about the individual contributions, personalities, strategies and so forth?

The final question to answer is what else the concept offers than a richer understanding of the periodization. One of the aims of the cognitive musicology is modeling the different ways and aspects of musical thinking, which is a process, consisting of phenomena at different levels. Therefore, it is vital for the knowledge of musical thinking and natural for the history of music to discover the inner logic behind the ever-changing trends and styles of music. People, after all, would seem to create in different times different kinds of music following the same kind of main rules dictated by our capabilities. The problem, however, in outlining the historical process of change in the music composed during the last two decades, is that there is a huge amount of styles and mixtures: Mixing different musical traditions is common, almost a part of any tradition nowadays. In the field of popular music and probably affecting later also other fields of music, the Beatles were one of the best-known forerunners of this tendency of enveloping different musical styles and traditions into one multitude. Nonetheless, the life span might still be evident at some level in the arts as long as it is created and enjoyed by people.

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Beatles For Sale. EMI/ Apple: CDP 7 464382

Help!. EMI/ Apple: CDP 7 464392

Let It Be. EMI/ Apple: CDP 7 464472

Magical Mystery Tour. EMI/ Apple: CDP 7 480 622

Past Masters Volume One. EMI/ Apple: CDP 7 900 432

Past Masters Volume Two. EMI/ Apple: CDP 7 900442

Please Please Me. EMI/ Apple: CDP 7 464352

Revolver EMI/ Apple: CDP 7 464412

Rubber Soul EMI/ Apple: CDP 7 464402

Sgt. Pepper's Lonely Hearts Club Band. EMI/ Apple: CDP 7 464422

The Beatles. EMI/ Apple: CDP 7 464432

With The Beatles. EMI/ Apple: CDP 7 464362

Yellow Submarine EMI/ Apple: CDP 7 464452

APPENDIX

The recording dates of the Beatles' songs and the modified chronological division

The periods listed here represent the division constructed at regular intervals and labeled by the name of the album most of the songs belong to. Although the songs and periods mostly follow the albums published, the exceptions to this order are indicated by asterisks (*). For example, *Wait* was recorded at the same sessions (17.6.1965) as the other songs for the *Help!* -album, but it was published later on the *Rubber Soul*. Songs published also, or only as singles in the U.K., are indicated *in italics* and those songs published also, or only as EPs in the U.K., are <u>underlined</u>. The first recording date is listed in all cases (Lewisohn 1988).

Name	Date	Money	18.7.1963
Please Please Me	11.9.62-30.4.63	Till There Was you	18.7.1963
Love Me Do	4.9.1962	It Won't Be Long	30.7.1963
P.S. I Love You	4.9.1962	All My Loving	30.7.1963
Please Please Me	11.9.1962	Please Mr. Postman	30.7.1963
Ask Me Why	26.11.1962	Roll Over Beethoven	30.7.1963
I Saw Her Standing There	11.2.1963	All I've Got to Do	11.9.1963
	11.2.1963	Don't Bother Me	11.9.1963
Misery		Little Child	11.9.1963
Anna	11.2.1963	I Wanna Be Your Man	11.9.1963
Chains	11.2.1963	Not A Second Time	11.9.1963
Boys	11.2.1963	Hold Me Tight	12.9.1963
Baby, It's You	11.2.1963	I Want To Hold Your Hand	17.10.1963
Do You Want To Know A Secret	11.2.1963	This Boy	17.10.1963
A Taste Of Honey	11.2.1963	A Hard Day's Night	1.12.63-30.6.64
There's A Place	11.2.1963		
Twist and Shout	11.2.1963	Can't Buy Me Love	29.1.1964
From Me To You	5.3.1963	I Should Have Known Better	25.2.1964
Thank You Girl	5.3.1963	And I Love Her	25.2.1964
With The Beatles	1.5.63-30.11.63	You Can't Do That	25.2.1964
She Loves You	1.7.1963	<u>If I Fell</u>	27.2.1964
I'll Get You	1.7.1963	Tell Me Why	27.2.1964
You Really Got A Hold Of Me	18.7.1963	Long Tall Sally	1.3.1964
Devil In Her Heart	18.7.1963	I Call Your Name	1.3.1964
Down in fron float	10.7.1703	I'm Happy Just To Dance With You	1.3.1964

A Hard Day's Night	16.4.1964	Michelle	3.11.1965
Slow Down	1.6.1964	What Goes On	4.11.1965
Matchbox	1.6.1964	I'm Looking Through You	6.11.1965
I'll Cry Instead	1.6.1964	Think For Yourself	8.11.1965
I'll Be Back	1.6.1964	The Word	10.11.1965
Any Time At All	2.6.1964	You Won't See Me	11.11.1965
Things We Said Today	2.6.1964	Girl	11.11.1965
When I Get Home	2.6.1964	Nowhere Man	21.11.1965
Beatles For Sale	1.7.64-31.1.65	Revolver	1.4.66-31.10.66
Baby's In Black	11.8.1964	Tomorrow Never Knows	6.4.1966
I'm A Loser	14.8.1964	Got To Get You Into My Life	7.4.1966
Every Little Thing	29.9.1964	Love You To	11.4.1966
I Don't Want To Spoil The Party	29.9.1964	Paperback Writer	13.4.1966
What You're Doing	29.9.1964	Rain	14.4.1966
No Reply	30.9.1964	Doctor Robert	17.4.1966
Eight Days A Week	6.10.1964	Taxman	20.4.1966
She's A Woman	8.10.1964	And Your Bird Can Sing	20.4.1966
I Feel Fine	18.10.1964	I'm Only Sleeping	27.4.1966
Rock And Roll Music	18.10.1964	Eleanor Rigby	29.4.1966
I'll Follow The Sun	18.10.1964	For No One	9.5.1966
Mr. Moonlight	18.10.1964	Yellow Submarine	26.5.1966
Kansas City//Hey Hey Hey	18.10.1964	I Want To Tell You	2.6.1966
Words Of Love	18.10.1964	Good Day Sunshine	7.6.1966
Everybody's Trying To Be My Baby	18.10.1964	Here, There and Everywhere	14.6.1966
Honey Don't	26.10.1964	She Said She Said	21.6.1966
Help!	1.2.65-31.8.65	Sgt. Pepper	1.11.66-30.4.67
I Need You	15.2.1965	Strawberry Fields Forever	24.11.1966
Another Girl	15.2.1965	When I'm Sixty-Four	6.12.1966
Ticket To Ride	15.2.1965	Penny Lane	29.12.1966
Yes It Is	16.2.1965	A Day In The Life	19.1.1967
The Night Before	17.2.1965	Sgt. Pepper's Lonely Hearts Club Band	1.2.1967
You Like Me Too Much	17.2.1965	Good Morning Good Morning	8.2.1967
You've Got To Hide Your Love Away	18.2.1965	Fixing A Hole	9.2.1967
Tell Me What You See	18.2.1965	Only A Northern Song *	13.2.1967
You're Going to Lose That Girl	19.2.1965	Being For The Benefit of Mr. Kite	17.2.1967
Help!	13.4.1965	Lovely Rita	23.2.1967
Bad Boy	10.5.1965	Lucy In The Sky With Diamonds	1.3.1967
Dizzy Miss Lizzie	10.5.1965	Getting Better	9.3.1967
I'm Down	14.6.1965	Within You Without You	15.3.1967
I've Just Seen A Face	14.6.1965	She's Leaving Home	17.3.1967
Yesterday	14.6.1965	With A Little Help From My Friends	29.3.1967
It's Only Love	15.6.1965	Sgt. Pepper's Lonely Hearts Club Band	1 1.4.1967
Act Naturally	17.6.1965	(Reprise)	
Wait*	17.6.1965	Magical Mystery Tour*	25.4.1967
Rubber Soul	1.9.65-31.3.66	Magical Mystery Tour /Singles/Yellov	
Norwegian Wood	12.10.1965	Submarine	Hellow Should
Run For Your Life	12.10.1965	Baby, You're A Rich Man	11.5.1967
Drive My Car	13.10.1965	All Together Now	12.5.1967
Day Tripper	16.10.1965	You Know My Name (Look Up Th	
If I Needed Someone	16.10.1965	•	c 17.J.1707
In My Life	18.10.1965	Number) *	A # # 4
We Can Work It Out	20.10.1965	It's All Too Much	25.5.1967

All You Need Is Love	14.6.1967	Dig A Pony	30.1.1969
Your Mother Should Know	22.8.1967	I've Got A Feeling	30.1.1969
<u>I Am The Walrus</u>	5.9.1967	One After 909	30.1.1969
Blue Jay Way	6.9.1967	Two Of Us	31.1.1969
<u>Flying</u>	8.9.1967	The Long And Winding Road	31.1.1969
The Fool On The Hill	25.9.1967	Abbey Road	1.2.69-3.1.70
Hello Goodbye	2.10.1967	I Want You (She's So Heavy)	22.2.1969
The Inner Light	12.1.1968	Old Brown Shoe	25.2.1969
Lady Madonna	3.2.1968	Something	25.2.1969
Across The Universe*	4.2.1968	The Ballad Of John and Yoko	14.4.1969
Hey Bulldog	11.2.1968	Oh! Darling	20.4.1969
White Album	1.4.68-31.10.68	Octopus's Garden	26.4.1969
Revolution	30.5.1968	You Never Give Me Your Money	6.5.1969
Revolution 1	30.5.1968	Golden Slumbers/Carry That Weight	2.7.1969
Revolution 9	30.5.1968	Her Majesty	2.7.1969
Don't Pass Me By	5.6.1968	Here Comes The Sun	7.7.1969
Blackbird	11.6.1968	Maxwell's Silver Hammer	9.7.1969
Everybody's Got Something To Hide Ex-	- 27.6.1968	Come Together	21.7.1969
cept Me and My Monkey		The End	23.7.1969
Good Night	28.6.1968	Sun King	24.7.1969
ObLaDi, ObLaDa	3.7.1968	Mean Mr Mustard	24.7.1969
Cry Baby Cry	16.7.1968	Polythene Pam	25.7.1969
Helter Skelter	18.7.1968	She Came In Through The Bathroom	25.7.1969
Sexy Sadie	19.7.1968	Window	
While My Guitar Gently Weeps	25.7.1968	Because	1.8.1969
Hey Jude *	29.7.1968	I Me Mine *	3.1.1970
Mother Nature's Son	9.8.1968	1 ivic ivinic	3.1.1770
Yer Blues	13.8.1968		
Rocky Racoon	15.8.1968		
Wild Honey Pie	20.8.1968		
Back In The U.S.S.R	22.8.1968		
Dear Prudence	28.8.1968		
Glass Onion	11.9.1968		
I Will	16.9.1968		
Birthday	18.9.1968		
Piggies	19.9.1968		
Happiness Is A Warm Gun	23.9.1968		
Honey Pie	1.10.1968		
Savoy Truffle	3.10.1968		
Martha My Dear	4.10.1968		
Long Long	7.10.1968		
I'm So Tired	8.10.1968		
The Continuing Story Of Bungalow Bil			
Why Don't We Do It In The Road	9.10.1968		
Julia	13.10.1968		
Let It Be	1.11.68-31.1.69		
Maggie Mae	24.1.1969		
Maggie Mae For You Blue	25.1.1969		
Let It Be	25.1.1969		
Dig It!	26.1.1969		
Get Back	27.1.1969		

28.1.1969

Don't Let Me Down