SOME PSYCHOLOGICAL PROCESSES IN STRING QUARTETS

VIVIENNE M. YOUNG AND ANDREW M. COLMAN

Introduction

The music of the emergent Classical era, with its gradual repudiation of the baroque functions of the continuo, its development of instrumental technique and its widening social appeal, saw the emergence of an ever-increasing variety of instrumental combinations. Of these, the string quartet attracted among major composers an unrivalled popularity which was maintained throughout the Romantic era and has continued unabated amidst the dissolution of tonality up to the present day. Other musical ensembles have survived over this period, but none without some alteration of its instrumentation; the basic structure of two violins, a viola and a 'cello has, however, remained unchanged since its emergence in the middle of the eighteenth century.

Much of what will be said about the psychology of string quartets is applicable also to other musical ensembles, but for several reasons the string quartet provides a particularly striking embodiment of the group processes which will be discussed. This arises partly from the fact that the string quartet is made up of four instruments of the same family, similar in timbre and method of sound production. It is interesting in this context to recall that some quite prolific composers such as Berlioz who relied heavily on instrumental colour in their compositional styles did not produce any string quartets. Even Debussy, who might be thought to confound this generalisation, attributed the tremendous difficulty he experienced in writing for this medium to the lack of colour contrasts in the string quartet. In a performing string quartet, then, we find four individuals who, by the use of essentially comparable instrumental techniques, contribute similar elements to an integral group activity; yet they are in another sense performing entirely different though complementary rôles in this joint venture. These considerations lead us to view the string quartet as an example of a homogeneous and cohesive small group par excellence.

With this in mind, it is worth drawing attention to the peculiar character of ensemble playing which suggests the possibility that some of the findings of small-group research may be applicable to a particularly marked degree in quartets as compared with other small groups lacking the specific qualities inherent in this kind of ensemble. What is peculiar, and possibly unique in musical ensembles, is the extraordinarily high level of co-ordination demanded from the group members. It is, of course, true that a certain degree of co-operation and mutual accommodation is required from the members of almost any interacting group. In all groups in which the members converse with each other, for example, proper sequencing of speaking turns is needed for the interaction to run smoothly. Careful observation of the interaction processes in such groups reveals, however, a surprisingly high frequency of discoordination manifested in interruptions, false starts and the like. There is a large margin of error and the degree of co-ordination ordinarily achieved is quite limited. In a musical ensemble, on the other hand, the interaction between the players is of such a nature that mis-timings even of a fraction of a second, minute hesitations, slight differences in intonation, tiny misjudgements of dynamics and so on are regarded as monumental blunders even among musicians with quite modest pretentions. Across a wide range of variables almost total co-ordination is required, and this necessitates an exceptionally high degree of interpersonal awareness and mutual sensitivity. A musical ensemble is therefore an unusual kind of social group whose mode of interaction involves a degree of intimacy and subtlety possibly
not equalled by any other kind of group. An examination of the evidence from small-group research (e.g. Shaw, 1971) leads to the interesting speculation that groups of this type may exhibit certain psychological processes to a particularly marked degree.

Ensemble playing provides a great deal of scope for differences of opinion amongst the players. Questions of musical interpretation regarding tempi, phrasing and dynamics give rise almost inevitably to disagreements now and again. The opinions involved are usually inherently subjective in nature: they cannot normally be resolved by the production of unambiguous evidence contradicting or supporting one particular point of view, in other words they cannot be resolved by any objective means. These disagreements frequently revolve around simple differences in taste; the opinions of the players may nevertheless be firmly held and they may give rise to serious conflicts.

There is some research which shows that groups of four are in certain respects more likely to be riven with such conflicts than are groups of other sizes (Bales and Borgatta, 1955; Berelson and Steiner, 1964). This evidently arises from the fact that, apart from a dyad (a two-person group) a quartet is the smallest group which can become split into two (numerically) equal factions. In groups with an odd number of members, such as trios and quintets, this is not possible, and intractable rifts are relatively unlikely since the majority view will tend to prevail. In even-numbered groups, lasting deadlocks can occur, but the probability of an equal split decreases as the group size increases: a sextet is less likely to split into equal factions than is a quartet, and in large groups such an exactly equal division is extremely unlikely. In a dyad, the potential conflict is mitigated to some extent by so-called "social comparison processes" arising from the human need to find social validation for purely subjective judgements rather than to stand alone without any social support (Festinger, 1954). It is reasonable to suppose, therefore, that quartets are more likely to be riven by continuing conflicts than are other social groups.

Conflict and Co-operation

Since string quartets are notably vulnerable to severe and intractable conflicts, how is it that the extraordinary degree of co-ordination required of its members is ever achieved and maintained? The work of Muzafer Sherif and his colleagues in the United States in the 1950s and 1960s suggests some of the answers to this question.

In one series of experiments Sherif (1952) investigated the way in which the opinions of individuals tend to converge when they are placed in cohesive groups. The task presented to the subjects in the original experiments entailed estimating the amount of movement of a point of light in a darkened room. Since the light was, in fact, completely stationary, these judgements may be regarded as highly subjective. Sherif was relying upon a well-known visual illusion, the autokinetic effect, which causes apparent movement to occur under these conditions for reasons which need not detain us here. The main finding was that, whereas subjects tested individually generated a wide range of estimates regarding the amount of movement, the judgements tended to converge when the subjects were tested in groups. This convergence of subjective judgements occurs even when the estimates are given in writing so that the group members are not aware of each others' opinions. Subsequent research on conformity, starting with the work of Richard Crutchfield (1955) using a modification of the Asch technique, has demonstrated that group conformity is greatest on ambiguous matters of subjective judgement and least on unambiguous questions where there exist objectively right or wrong answers. These findings suggest that the potential conflict in string quartets is likely to be mitigated to some extent by the fact that the
differences of opinion involved are normally of an ambiguous and subjective nature and the opinions of the players are therefore likely to converge in most cases, thereby averting any direct conflict.

Another well-known study by Sherif, the Robbers' Cave Experiment (Sherif et al., 1961), involved the setting up of summer camps for boys in order to investigate the processes of co-operation and conflict under controlled yet realistic conditions. This work was concerned primarily with inter-group conflict and co-operation, but the findings are indirectly relevant to the intra-group conflicts which may arise in string quartets. The experimenters found that if the boys were arbitrarily divided into two factions, and each faction provided with some measure of group identity (even by merely being given distinctive names like "Eagles" and "Rattlers"), unpleasant conflicts tended to arise. If, furthermore, competitive games were organised between the two factions, severely disruptive and even dangerous clashes tended to develop; in one case the experiment had to be aborted and the boys sent home. What is most relevant to the present discussion, however, is the conditions under which such conflicts were found to become defused. Sherif discovered that when circumstances were arranged in such a manner that the boys were forced to co-operate with one another in some joint endeavour to achieve a desired goal (e.g. salvaging a supposedly broken-down lorry or obtaining a supply of water) the level of inter-group tension was greatly diminished. Several subsequent laboratory experiments (e.g. Feshbach and Singer, 1957; Burnstein and McRae, 1962; and Ashmore, 1969) have confirmed that inter- and intra-group conflicts are reduced or averted by the involvement of the group members in interdependent behaviour in common-fate situations. They provide further evidence for a social psychological mechanism whereby potential conflicts in string quartets may be avoided or lessened, since the members of such groups spend the most significant part of their time together engaging in what may be regarded as a supreme example of an interdependent activity to achieve a desired common goal.

One of the more obvious factors determining the level of conflict or co-operation in a small group is how well the group members get on with each other. The branch of research most pertinent to this question is the work on person perception, particularly the sub-area of interpersonal attraction. Two of the most significant determinants of interpersonal attraction have been found to be attitude similarity and need complementarity. The former is recognised in the motto "birds of a feather flock together" and the latter in "opposites attract".

There is an enormous body of empirical research (vide Berscheid and Walster, 1969; Duck, 1977) showing that, other things being equal, people tend to like those who share their own attitudes and values on important issues. Newcomb (1957, 1961), for example, was able to predict, on the basis of their attitudes on certain key issues, the friendship patterns which were destined to emerge when a group of previously unacquainted students moved into a hall of residence together. Winch (1958) and his colleagues, on the other hand, have shown that need complementarity is a crucial variable in cementing deep and lasting relationships. A couple consisting of an individual with a strong need for dominance, and another with a strong need for submission, for example, is more likely to form a lasting relationship than are two individuals who share the same need on this dimension. Subsequent research (Kerckhoff and Davis, 1962) suggested that, in the early stages of a relationship, attitude similarity is most important, but that after about 18 months of close acquaintanceship, need complementarity becomes important, too.

Quartet playing is such a technically specialised activity that it is rare for four individuals who already constitute an established friendship group to come together in a string quartet. In most cases quartets are formed from a group of
relative strangers. It is commonplace, for example, to find advertisements in music shops like "Enthusiastic 'cellist wishes to start string quartet" or "Wanted—second violinist for quartet". It is hardly surprising, therefore, that personality clashes are usually the decisive factor when quartets split up. When a group of players first come together, the most important factor determining the optimism with which they view their possible future as a quartet is likely to be their relative musical abilities. But over a period of time, particularly as they engage in more and more non-musical activities together, their different attitudes and personality needs are liable to play an increasing rôle in determining their viability as a social group. If the quartet goes on tour, the interpersonal compatibility of its members will be put to the severest test through the necessity to travel and live together as well as play together. The research on interpersonal attraction suggests that under these conditions any latent incompatibilities between the players are most likely to become manifest.

Leadership and Group Influence

By tradition, the first violinist is the official leader or head of a string quartet. This tradition arose from the fact that in early quartet compositions the first violin was given parts which were practically solo, with the 'cello providing the bass and the other two parts filling out the harmony (e.g. Mozart, K.80). Even in late Beethoven quartets, where the inside parts certainly have their share of technical difficulties and musical interest, the first violin, speaking with the most acoustically brilliant voice, retained a dominant musical rôle. But although the first violinist is the designated head in a formal sense in every string quartet, he is perhaps not necessarily in every sense a leader since the official position which he holds is no guarantee that he will have the greatest decision-making influence in the group.

One of the pioneers of research on leadership and social influence was Robert Bales (1950, 1955) who developed a systematic procedure known as "interaction process analysis" for investigating the social behaviour of small groups. Bales found that, in the natural history of small groups, two complementary leaders tend to emerge simultaneously. These he called the "task specialist" and the "social-emotional specialist". The former was typically viewed by the other group members as the most competent individual in the group at the task in hand and as highly active in the group's activities, but as not particularly likeable. The social-emotional specialist, on the other hand, was usually viewed as highly active and very likeable, but not particularly competent. This work suggests that the first violinist of a string quartet, who is supposed to be the task specialist, is bound either to have to relinquish his leadership rôle to one of the other players (which is likely to cause conflicts over authority) or to fulfil a rôle which carries with it a strong probability of unpopularity. In any event, research has shown that officially designated headship is no guarantee that an individual will emerge as the task specialist in a social psychological sense, and if he does not, this, too, is liable to become a source of difficulty by virtue of the inevitable rôle conflict which will be generated. All in all, the first violinist of a string quartet seems bound to have to face some difficult psychological problems.

The emergence of a natural task leader in a string quartet, even if he turns out to be the first violinist, does not ensure that the social climate in the group will be conducive to enjoyable and effective playing. This depends, above all, on the style of leadership which the leader chooses to impose. The classic experiments on leadership styles and resultant group atmospheres were conducted by Lewin, Lippitt and White in the United States (White and Lippitt, 1960). In these experiments, leaders of children's recreational clubs were trained in the use of three different leadership styles called "authoritarian", "democratic" and "laissez-faire". The effects were monitored over a period of many weeks of
regular club meetings. Authoritarian leaders, as the term implies, planned, directed and scrutinised the children's work (mask-making); democratic leaders encouraged the children themselves to arrive at their own group decisions on the basis of consensus of opinion; and laissez-faire leaders adopted an essentially passive rôle, offering help and advice only when asked for it.

The results were in some ways unexpected. The different styles of leadership were indeed found to generate over time different typical group atmospheres, but four rather than three such atmospheres emerged. There was a typical democratic atmosphere, characterised by the highest level of member satisfaction and a reasonable amount of constructive work, and a typical laissez-faire atmosphere marked by a lack of group cohesion and an irresponsible attitude towards the work in hand. The authoritarian leadership style, however, generated two completely different atmospheres depending upon circumstances. The “apathetic autocracy” atmosphere was characterised by docile obedience and extremely diligent work, and the “aggressive autocracy” atmosphere by equally diligent work and spiteful scapegoating of certain group members. Particularly striking were the effects found when the groups were surreptitiously observed on specially arranged occasions when the leader failed to arrive on time or was called away for an indefinite period. In the laissez-faire groups, the behaviour of the children was hardly distinguishable from what it was like when the leader was present and, of course, very little work was done. In the apathetic and aggressive autocracy groups the level of work, normally very high when the leader was present, dropped to almost zero in his absence. Only in the democratic groups was the quantity and quality of work maintained at a reasonably high level despite the leader’s absence. The implications of all these findings for string quartets are obvious. A democratic leadership style is clearly the most appropriate, not only because the players are likely to find the resultant social climate most satisfying, but also because only this leadership style is likely to ensure that a reasonable amount of work is willingly engaged in by the group members not only during rehearsals and performances (when the leader is present) but also when practising individual parts at home.

Learning and Performance

A final area of research of relevance to string quartets is concerned with the effects of the presence of other people on the learning and performance of skills. This work, of which F. H. Allport (1924) was a pioneer, centres on the effects of “co-actors” (individuals engaged in the same activity) and “audiences” (passive spectators) on a person’s behaviour. The results of a large number of experiments spanning several decades were reviewed by Zajonc in 1965, and the overall conclusions can be summarised as follows. The effect of an audience or co-actors is, in general, to facilitate the performance of well-learned skills but to impair the learning of new skills and the performance of imperfectly learned skills. The explanation for this phenomenon is that the effect of an audience or co-actors is one of general central nervous-system arousal, which in turn enhances the predominant responses in an individual’s behavioural repertoire. With imperfectly learned skills, or during the acquisition of novel skills, wrong responses predominate, and the enhancement of these impairs performance, while in the case of well-learned skills, correct responses predominate so that the enhancement of these improves or facilitates performance.

From the standpoint of a string quartet, these findings are of considerable relevance. Firstly, they offer a ready explanation for the well-known tendency of inexperienced and ill-rehearsed musicians to perform far below their usual living-room standard in front of an audience (or even in front of a music teacher!) while with professional musicians the reverse seems to happen. Secondly, they throw some light on the psychology of individual practice and group rehearsal.
A quartet rehearsal is obviously subject to co-action effects, and the research findings therefore suggest that if the members are ill-prepared, their playing is liable to suffer during rehearsals; the amount of learning that takes place in this context ought therefore to be kept to a minimum. Providing the individual parts have been well prepared by the players and the works well rehearsed, a quartet can confidently anticipate that their performance will be enhanced by the presence of an audience when they come to give a concert.

Conclusions

A number of strands of research from the literature on the psychology of small groups have been gathered and discussed from the point of view of their relevance to the problems facing string quartets. Most of the findings which have been outlined are quite old and fairly well known, but the way they have been teased out and woven into the experience of string quartets may be illuminating. A string quartet, it has been argued, is a special kind of small group which, for various reasons, might reasonably be assumed to manifest some of the established social psychological processes of small groups in a particularly striking way. Until string quartets receive specific attention from empirical research psychologists, there is no alternative to the admittedly somewhat speculative approach adopted in this paper. But the speculations are, we hope, enlightened ones, and they might form the basis for further research.

In this age of sound broadcasting and high-quality recording, there is a tendency to lose sight of the fact that the seemingly perfect performances which we enjoy are being produced by flesh-and-blood human beings with attitudes, needs, aspirations, fears, hopes and ambitions. In the case of ensemble music in general, and (for the reasons outlined above) of string quartets in particular, it is all too easy to remain oblivious also of the fact that the music we hear is the product of the interaction of individuals who have been working together for a period of time during which they have been exposed to all the customary vicissitudes of human social interaction. The problems of conflict and co-operation, leadership and compliance, audience and co-action effects and the like have inevitably had to be faced and resolved for better or for worse. In the above discussion, we hope at least to have drawn attention to a few of the more striking psychological processes which may operate in string quartets, and to have indicated how some of these processes may not be as transparent as they seem at first glance.

Aesthetics Research Group,
Department of Psychology,
University of Leicester,
Leicester, LE1 7RH.

References


Reprinted from Psychology of Music
7 (1), 12-18 (1979)