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# The Dynamics of Intense Work Groups: A Study of British String Quartets

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This paper focuses on the relationship between the internal dynamics and success of a population of intense work groups, professional string quartets in Great Britain. We observed three basic paradoxes: leadership versus democracy, the paradox of the second violinist, and confrontation versus compromise. The central findings indicate that the more successful quartets recognized but did not openly discuss the paradoxes. Instead, they managed these inherent contradictions implicitly and did not try to resolve them. The discussion addresses the study of intense work groups, the forces that drive these paradoxes, and potential applications to other organizational groups.●

Groups are elemental organizational units that are stimulating ever-increasing empirical and conceptual research (Bettenhausen, 1991). This paper presents a different perspective by reporting a study of British string quartets, an unusual example of particularly intense work groups. This study focuses on the relationship between the quartets' internal dynamics and their success as a group. Our research began inductively, using semi-structured interviews, archival analysis, and limited observation as methods. The considerable time since our original data collection has provided the opportunity to use the recent literature to formulate a set of testable hypotheses. Thus, this study offers a mixed inductive-deductive approach to the relationship between intragroup interaction and success.

Quartets are a unique form of work group in at least two important respects: they are self-governing (Hackman, 1987), essentially constituting their own organization, and their task is extremely intense, being artistic, immediate, complete, and reciprocally interdependent (Thompson, 1967). We determined from the data that the string quartets we studied faced three important paradoxes: the leadership versus democracy paradox, the paradox of the second fiddle, and the conflict paradox of confrontation versus compromise. Smith and Berg's (1987) central notions—that groups face inherent, unresolvable paradoxes and that they must accept, confront, and manage them—provided an organizing framework for our analyses. Analysis reveals that, in this context, successful string quartets understand and implicitly manage their inherent group contradictions while less successful quartets do not.

## THE STRING QUARTET

String quartets are particularly intense work groups. Members are reciprocally interdependent (Thompson, 1967), using each other's outputs as their own inputs, and vice versa. Their interdependence is also complete and immediate: Their work is done only as a unit; they cannot perform a string-quartet composition without all of the members working together simultaneously. They are artists who collaborate; they must simultaneously devote their concentration to their own and to each other's playing. Many quartet players commented in the interviews that the ability to listen and respond to each other was the most important characteristic that differentiated quartet players from soloists.

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A string quartet is composed of two violinists, a viola player, and a cellist; their collective task is to reach a high level of coordinated sound. Two labels can characterize the subtly different styles of string-quartet performance: With the European style, sound comes from the quartet as a single, unified musical source. With the American style, the quartet sounds like four voices, combined harmoniously; the members retain their individuality but relate to each other's sound in an organized way.

String quartets choose most of their material from the traditional repertoire, including 16 compositions by Beethoven, 84 by Haydn, and numerous pieces by Mozart, Schubert, Brahms, and others. Groups increasingly play the work of twentieth-century composers, such as Bartok, Tippett, and Simpson. Each group tries to achieve a unique interpretation and a forceful presentation each time it plays a piece. Any composition can be played an infinite number of ways, with varying speed, emphasis, rhythm, balance, and phrasing. Thus, a quartet tries to stamp each performance with its own character and style and, even after considerable rehearsal, members can surprise each other or their audience with spontaneous flourishes. Quartet players feed off each other, as one cellist put it, trying to achieve "a spiritual experience, . . . which is the ultimate one can hope for." These groups rehearse as many as six hours a day, seven days a week, in addition to individual practice. Rehearsals are typically split between playing and discussing the interpretation of a piece. Over time, quartets attempt to expand their repertoire and to refine the pieces they are currently playing.

The different positions within the quartet have different musical responsibilities. The first violinist is the musical leader of the quartet. Much of the traditional quartet music, particularly Haydn, asks him or her to play the tune, often referred to as the "top." The first violinists' parts are usually the most difficult. When they perform well, they give life to each different presentation of a piece. The first violin is most easily heard by the audience, even in the single-voiced European style. Among the four players, he or she gets the most attention and acclaim; many quartets, for example, are named after their first violinists.

While traditional string-quartet pieces demand that the first violin dominate the music, they also require a complementary but nevertheless engaging sound from the second violinist. For a quartet to do well, the second violinist cannot get lost in the background. The phrase, "second fiddle," aptly describes the second violinist's role. Since seconds play the same instrument as the first fiddle and must often echo the first, playing an octave lower, their task is doubly difficult. A second violinist has few leads and is rarely the center of the music. He or she must blend but must at the same time be more than a second fiddle.

The viola player teams with the second violinist to form the "middle" of the quartet. The instrument has a distinctive, melancholy sound and finds its place in the string quartet; nowhere else (e.g., orchestral or solo work) does it play such a strong part. Thus, viola players are dependent on quartets as the main outlet for their musical expression. Most viola

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players began by playing the violin: the larger physical size of the viola makes it difficult for young players, so musicians typically move to it later in their training. Often it provides a player with more opportunities for advancement, since competition among violin players is typically fiercer.

The cellist is literally and figuratively the base of the group, laying the foundation above which the tonally higher strings can shine. The cellist follows the first violinist in the number of leads and forms the "bottom" of the quartet with the viola player and second violinist.

Different personal and professional attributes also seem to be required of the different players. On the one hand, many quartet members feel that the second violinist should be a better player than the first, as playing the weaker parts of the music well requires strong technical skill. On the other hand, strong musicianship is required of the first violinist: he or she may not be the best player, but he or she must have "audition," musical vision. The cellist must be completely dependable: without a solid base, the quartet simply cannot function successfully. Viola players have the fewest requirements but require of themselves that they produce a lovely sound. The best quartets ask each player to have a soloist's skills but not a soloist's temperament.

Our interviews indicated that most string-quartet players view their work as more than a job: They identify with and are inspired by the music they play. They report never being able to achieve their ultimate goal—to produce transcendent, glorious sound—for an extended period. They do have short experiences of this state of performance, akin to Csikszentmihalyi's (1990) concept of flow, "the state in which people are so involved in an activity that nothing else seems to matter."

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During the time of this study, at least 21 professional string quartets lived and worked in Great Britain. Quartet players ranged in age from their early 20s to their mid-70s. Of the 20 string quartets studied, one included the same four members for 34 years; two were going through a membership change at the time of the study. Talent was uniformly high: Most quartet musicians were musical prodigies in their youth and received extensive musical training. Quartet members often met in school, and many younger members of quartets had recently graduated from London's Royal Academy of Music. The quartet instructor there encouraged his best groups to continue playing professionally after graduation. Thus, a new quartet was introduced almost every recent year.

The burgeoning quartet population led to an increase in the variance of experience, pay, number of concerts played, and ability. A competitive atmosphere developed among the younger quartets as they recognized that not all of them could survive—an expectation that is borne out by our data, which show that over half of these quartets have folded. The members of younger quartets could not make a living simply playing quartets. Most lived in London and worked other musical jobs at least part of the year to supplement

their income: As one violinist said, after playing for a film score, "This is where we earn our filthy lucre." Others solved their financial problems by taking university positions, where quartets could depend on a fixed income ("being paid to rehearse") for teaching, orchestral direction, and a few concerts each year.

Many local music clubs are active in Great Britain and provide a major source for concerts and income for both young and older quartets. All the quartets sought international recognition, especially in the United States and Germany. Quartets also played live on the BBC and did smaller, informal concerts for local schools and other organizations. The most prestigious of concerts were in London, where a quartet could expect to be reviewed by the major newspapers and trade journals.

Concert organizers often requested that a quartet perform particular compositions. Although groups tried to limit the number of different pieces they played in any one season, younger groups often felt compelled to comply. More experienced groups could generally limit a season's repertoire, although quartets typically played as many as twenty or thirty different pieces each year. Quartets tried to balance the time costs of learning new pieces with a desire to expand their group's repertoire.

The younger quartets typically handled their own business affairs, dividing the duties of concert scheduling, accounting, travel planning, and rehearsal coordination amongst themselves. As they prospered, they often hired a manager or agent for booking and scheduling. Agents almost always handled overseas concerts.

## **GROUP PARADOXES**

Smith and Berg (1987) presented the idea that groups face inherent paradoxes. A paradox was defined generally (Hughes and Brecht, 1975) as a contradictory, self-referential statement or statements that generate a vicious cycle. One example of the many group paradoxes noted by Smith and Berg is the paradox of identity, which is characterized by the struggle of individuals and the group to each establish a meaningful identity that is an integral part of the other.

They hypothesized that since paradoxes are inherent to groups, attempts to untangle these contradictions will lead to unending logical conflicts and group paralysis. They also suggested that groups must manage and be open to the expression of opposing group members' reactions, similar to the old "contact hypothesis" of intra- and intergroup relations (e.g., Worchel, 1979). Smith and Berg suggested that immersion in the opposing forces of paradox will reveal the links between the contradictions and the essential release that is needed for effective group action. That is, they recommended that paradox be understood, accepted, and even embraced.

Smith and Berg (1987) identified, via observation and anecdote, a series of paradoxes with roots in psychotherapy and clinical psychology. Our use of the concept of paradox is more localized and task-oriented. Our interviews provided

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the information that led to the identification of three paradoxes that appeared both obvious and centrally important to the functioning or philosophy of string quartets: leadership versus democracy, the paradox of the second fiddle, and confrontation versus compromise. The immediately relevant empirical literature includes a case study of the Detroit String Quartet (Butterworth, 1990), case studies of other performing groups (Friedman, 1990; Kahn, 1990; Wood, 1990), and the classic study of the Utrecht jazz orchestra (Bougon, Weick, and Binkhorst, 1977). While these empirical and conceptual efforts offer little direct structure to guide our research of group paradoxes, they can be combined with role theory (e.g., Kahn et al., 1964), models of conflict resolution (e.g., Thomas, 1976), and theories of similarity (Byrne, 1971) to generate several straightforward hypotheses that conflict with the expectations derived from Smith and Berg (1987).

### **The Leader versus Democracy Paradox**

All string quartets face two conflicting facts: (1) Quartet music typically gives the lead (i.e., most of the good music) to the first violinist; and (2) the players reported that they joined the quartet to have a voice in how they play. Members of orchestras, for instance, are bound by the conductor's decisions. Each member of a string quartet, however, can theoretically have one-fourth of the input in musical and business decisions. Members share equally in their concert fees and expect to share equally in intragroup influence. At the same time, the first violinist has most of the musical opportunities and responsibilities in traditional compositions. This also extends to the group's everyday business interactions: Since first violinists are the most well-known and recognized members of each quartet, they are often pressed to act as the group's primary speaker and public relations person.

### **The Paradox of the Second Fiddle**

As we have noted, second violinists have unique task and role problems: They must have consummate ability that rarely finds complete expression; they must always play the role of supporter during a performance, even if the first violin seems wrong; and they get little attention but nevertheless provide one of the most salient bases for evaluating the quartet as a whole. Second violinists are critical to their group's success—as many quartet players observed when they discussed how quartets were evaluated, "They're only as good as their weakest link"—but they are rarely recognized. To date, however, the general issue of talented but subordinate professionals has received almost no study.

The second violinist must echo rather than lead the first violin in the melody of a piece. Second violinists must stand in the background, both musically and in the public eye. Some second violinists may be serving their time as a second (like an apprenticeship) until the opportunity arises to be a first. The classic research on role conflict (Kahn et al., 1964) predicts that role acceptance is more likely to covary with group success than with role conflict. This hypothesis directly contradicts Smith and Berg's (1987) prediction that groups need to be open to and confront their contradictions.

## **The Conflict Paradox: Confrontation versus Compromise**

Conflict is inevitable in groups (Ury, Brett, and Goldberg, 1988). With limited time to prepare for concerts, determining how a quartet will present every minor nuance of a composition opens the door for considerable discussion, if not outright discord. Because the members are so interdependent, whether quartets deal with their conflicts through the extremes of confrontation or compromise should have a tremendous impact on their success and continued existence.

The paradox of conflict was ably summarized by Brickman (1974), who noted that, on the one hand, conflict disrupts, injures, and needs resolution while, on the other, it may be necessary for change, group solidarity, creativity, and individual freedom. Avoiding open disputes invites the side effects of repressed conflict (e.g., frustration, shorter tempers, etc.); relying on compromise, however, may only generate mediocrity.

If similar demographics (e.g., Tsui and O'Reilly, 1989), such as school background, contribute to similar musical perspectives among the group members, musical conflicts may be easily handled and the preparation of a piece for performance can proceed quickly (Bettenhausen and Murnighan, 1985). At the same time, diverse points of view—an antecedent of musical conflict—can contribute to richly textured, creative performances (Janis, 1972). Optimal group functioning would balance similarity and diversity, capitalizing efficiently on group members' similar attitudes while also taking advantage of diverse creative inputs.

Thus, models of conflict resolution (e.g., Pruitt and Rubin, 1986) suggest that groups should eschew both avoidance and compromise in favor of an active, collaborative approach that focuses, in this situation, on musical rather than interpersonal conflicts. Smith and Berg's (1987) prediction is quite different, advocating confrontation rather than resolution. Although diversity along a multitude of dimensions is important to individual and group interaction, our data focus most directly on the quartet members' musical goals and preferences and demographics during rehearsals.

A perfect quartet performance, therefore, is not one that faithfully presents all the notes of a piece in the correct order at the right speed and pace, for there is no one correct speed and pace. Instead, a perfectly performing quartet must play the piece well (i.e., in tune), but it must also do more. The ultimate quartet plays the same piece differently every time and astounds its members and its listeners with each new interpretation.

Temperament, conflict resolution strategies, decision-making styles, and basic interpersonal skills can vary tremendously within a four-person group. Effective groups achieve the best balance of diversity and similarity so that members are familiar and sympathetic with each other's points of view yet different enough to be fresh.

## **METHODS**

### **Participants**

We contacted quartets first by letter and then by telephone. All of the members of 20 of the 21 quartets participated.

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Eighty professional string-quartet musicians responded in semi-structured interviews lasting between 45 minutes and four hours. All were active members of one of the 20 professional string quartets. We interviewed two additional experts: One was the first violinist of a quartet whose other members could not participate during the time of the study; the other was a retired first violinist and an active teacher of string quartets.

The study was meant to be exhaustive; almost all of the professional string quartets in England and Scotland were contacted. To our knowledge, only two quartets, both very young and not known to us at the start of the study, were not invited to participate.

Interviews were conducted in the spring of 1981. Most of the members of a quartet were interviewed individually over the course of a day or two. One married couple asked to be, and was, interviewed together. The interviews were conducted by the first author in a variety of locations, ranging from the individual's home to his or her car or a local pub. Almost all of the interviews were audio-tape-recorded. All participants were assured of personal confidentiality; all were promised and received a preliminary report from the project.

### **The Interviews**

Each interview included a structured set of questions; additional questions depended on the respondent's interests and inclinations. All queries can be roughly categorized into either individual or quartet questions. Individual questions addressed issues surrounding each person's musical history (always the first elements in the interviews), demographics, extra-quartet activities, feelings and behaviors before, during, and after concerts, how each related to his or her instrument, identification of exceptionally good and particularly bad concerts, favorite pieces and composers, what it took to be a great quartet musician, and why music was so motivating. Quartet questions included the circumstances of members' joining their current quartet, how long the current group had been together, their individual histories of playing quartet music, the informal roles held by quartet members, their approach to leadership and democracy within the group, details about rehearsals, the group's goals, how they dealt with conflict, consistent behaviors displayed by quartet members, friendship within the group, and what constituted a great quartet.

Questions were also designed for each position within the quartet. First violinists were asked if they would ever play second violin and why there had been no switches in this quartet. Second violinists were asked if they would like to be a first violinist and how they handled the dilemmas of being second. Viola players were asked if they still played the violin and what they would do if the quartet folded. Cellists were asked whether they heard better than the other quartet members (since their instrument is not right next to their ear), what they listened for, and whether they drank more than the other quartet members (an in-group stereotype of cellists).



## Archival Data

We obtained data on records in print from *Gramophone's* June 1981 issue. Information on record sales and concert attendance was not available. We also collected concert reviews during the six months surrounding the interviews from the *Times*, the *Financial Times*, the *Guardian*, the *Telegraph*, the *Observer*, and the *Strad*. The evaluative phrases in each review were combined into an abstract that included only positive or negative phrases. A set of 12 independent evaluators, all of whom had played quartets in concert, rated a subset of these abstracts. They rated overall favorability, how they would have felt if these phrases were taken from a review of one of their own concerts, and the success of the quartet. Each abstract was independently evaluated by two or three judges.

## Measures

Six measures of success included (1) concert *fee* in pounds sterling, (2) the number of *albums* recorded and in print, (3) the number of *mentions*, in the interviews, by members of other quartets, (4) the number of *concerts* in the last year, (5) the number of newspaper and magazine *reviews* between January 1 and July 1, 1981, in the publications listed above, and (6) the mean *ratings* of the abstracted reviews. Fee and concerts were taken from the interview transcripts. A quartet's standard concert fee was the measure used, even though quartets occasionally cut their fee for benefits and other special performances.

*Stability.* Stability was the time in years that the current quartet members had been together, taken from the interviews at that time.

*Turnover.* Quartet turnover was the number of membership changes within the group in the 9 years following the interviews. During this time, none of the quartets had two changes in the same position. Thus, turnover could and did range from 0 to 4; quartets that folded (a more drastic change) were assigned a score of 5. Two of the respondents from 1981 who were well informed about professional string quartets in Britain supplied the turnover data in 1990.

*Demographic characteristics.* All respondents were asked their age, in years, and the schools they had attended. Gender was also noted in the interviews. Groups were categorized as having similar school backgrounds if they included three or four members who attended the same school and less similar backgrounds if they included zero or two members who attended the same school. Almost no quartet members attended the same school without attending it at the same time.

Table 1 summarizes all of the measures, including a general measure of success, excluding demographics. We combined the data of pairs of quartets, arranged in descending order of general success, to preserve their anonymity.

In reporting our findings, we have relied extensively on direct statements from the respondents. Although many of the quotations below use the male pronoun, "he," ten of our 80 respondents were female. Although we recognize the sexist connotations implied by using the male pronoun, we

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Table 1

### Mean Scores on the Measures for Pairs of Quartets

Paired quartets	Fee (£)	Albums	Mentions	Concerts	Reviews	Ratings	Stability	Turnover	General success
#1, #2	2800	71	22	175	29	28.9	22.0	1;Fold*	17.7
#3, #4	1300	70	3	115	20	23.4	5.5	2;Fold*	5.5
#5, #6	1700	23	6	205	10	26.5	12.5	2;1	2.9
#7, #8	1000	19	5	180	9	36.1	7.0	0;1	.2
#9, #10	850	0	2	130	13	30.6	1.0	3;4	-1.5
#11, #12	800	8	4	220	4	29.3	8.0	2;1	-2.5
#13, #14	1075	2	0	145	3	17.3†	3.0	1;Fold	-3.4
#15, #16	750	2	0	85	6	31.8	4.0	1;Fold	-3.7
#17, #18	450	0	0	87	7	24.1	8.5	Fold;Fold	-4.4
#19, #20	560	0	0	38	0	None	2.5	3;Fold*	-5.6

\* This quartet folded because of the death or retirement of a member.

† No reviews were printed for one of the two groups.

are also obligated to our respondents to protect their anonymity and prefer this usage to using the mixed term "he or she" to refer to actual individuals. We also rejected random usage of the male and female pronouns, an alternative solution to this problem, which might have led to harmful misattributions.

### FINDINGS AND OBSERVATIONS

Since we studied a population, we report no significance tests, as they are appropriate only for samples. The correlations among the six measures of quartet success showed strong relationships among fee, albums, mentions, and reviews, as shown in Table 2. Partialing out the effects of the average age of the quartet members yielded similar results, with some dampening of the correlations' strength. Thus, these four measures were standardized and summed to form a general success score (coefficient alpha = .86) that acted as the organizing variable for Table 1. The low correlations between concerts and the other variables reflect a natural reaction acknowledged by some members of the more successful quartets to reduce their performance schedules. The low correlations for performance ratings may be due to reviewers' prior expectations: they typically exerted more stringent criteria on the performances of well-known, successful quartets.

Table 2

### Correlation Matrix for the Various Outcome Measures

Variable	1	2	3	4	5	6	7
1. Fee							
2. Albums	.80						
3. Mentions	.88	.67					
4. Concerts	.21	-.05	.22				
5. Reviews	.47	.29	.45	.26			
6. Ratings	-.07	-.34	.08	.23	-.05		
7. Stability	.85	.71	.74	-.02	.40	.09	
8. Turnover	.06	.20	.10	-.69	-.12	-.18	.09

Age, stability, and general success were also highly correlated with each other, with correlations ranging from .49 to .82. Turnover, however, yielded considerably smaller correlations (.08 to .24) with these measures. All but one quartet

had at least one member change since 1981. Seven quartets folded, three due to either death or retirement. The other four had been ranked among the least successful quartets in 1981 (see Table 1, above).

Qualitative analyses focused particularly on the quartets ranked as the top seven and bottom seven. Supplementary quantitative analyses divided the groups into more and less successful quartets (via a median split on general success) and by demographics to identify potential predictors.

### **The Leader-Democracy Paradox**

Most quartet members used the words "leader" and "first violinist" almost interchangeably. All of the top groups recognized that their task demanded a leader and that that person was naturally the first violinist. Many first violinists explicitly recognized the leader-democracy paradox. Two quotes from a successful quartet's first fiddle illustrate: "I shaped and molded this quartet. I make them play the way I want them to play." Later, he said, "In a quartet, everyone must be satisfied with what they are doing, because it's a life's work. You don't have majority decisions. A minority of one is enough to break up the whole thing. If he doesn't like it, he can just go. You must satisfy everybody." Another first violinist expressed the two sides of this paradox, saying first, "If there are any real problems in the quartet, I suppose I sort them out." Almost immediately after, he said, "It's very democratic."

Other members of the top groups either acknowledged both sides of the paradox or viewed the situation as being very democratic. One second fiddle said, "He does dominate; he's an extrovert anyway. He likes central attention. And obviously that's very good for a first fiddle." A little later in the same interview he said, "We're fairly equal as far as decisions." A cellist described the paradox metaphorically, emphasizing democracy: "I'm sometimes the father and sometimes the son. I think we all are."

Another cellist denied any additional influence for the first fiddle: "How is he a leader? He's one-fourth of a quartet. It's no more than that." Yet observations of his quartet in several recording sessions showed that the first violin was clearly controlling the sessions: He stopped the group when he heard a wrong note or a wrong phrase; he was the one who had to be satisfied before they continued recording; he was totally in charge.

Only one successful group adopted a philosophy that the first violin was the group's singular leader. This was expressed most strongly (not surprisingly) by the first violinist, "I'm a bit of a dictator. It just seems logical that I decide." Later he added, "I don't think a democratic quartet can work." He also assumed that the group members (if not the entire quartet community) agreed with him: "I think everybody recognizes that." His cellist concurred: "You must go with the first." The second violin was less convinced. He recognized the first violinist's influence and its limits: "The leader has a heavy responsibility. But we all have to turn up in the same place at the same time." Finally, the viola

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player, who had decided to leave the group, was clearly unhappy with their approach: "It's disturbing that people don't want equality." But he also acknowledged the requirements of the task: "Yes, firsts have to have more say in decisions."

The first violins in the bottom group tended to emphasize democracy and avoided acknowledging the group's strong task demands, as shown in this quote from a first violinist: "Just because I'm leader doesn't make any difference." The other members of this quartet, however, wanted the first to take more authority and exercise stronger leadership. The second violinist said, "It would be better if he was more forceful." The viola player concurred: "He should take control in rehearsals. We're trying to push him that way."

The less successful quartets were concerned about both the ability and the personality of their first violinists. Some groups were uninspired by their leader's play, e.g., "He isn't producing the goods." Others thought that the first violinist did not have the personal power to lead them effectively: "Enthusiasm, yes, but he doesn't lead." Later the same person said, "He's a weak leader, no flair, not extroverted enough."

The first violinist of a less successful quartet that survived and is currently doing well responded as if the group was a democracy ("If you're going to get along . . . you have to recognize that you all have feelings about certain things") but was clearly in charge of rehearsals. Group members recognized either the fact or the need for his leadership but did not see how he dominated rehearsals. One encouraged it: "We have to help him to do it exactly as he wants to." Although he controlled almost all the starting and stopping in rehearsals, the second violinist said, "I don't think he has any more influence than anyone else," and "We take turns leading in rehearsal." The cellist agreed, "He doesn't direct the rehearsals."

Another less successful group combined democracy and leadership in the worst way. The first violin described the group as "very democratic." Yet he acknowledged taking control without their consent: "In concert, I do what I want to anyway." The others were looking for more, saying, "I want a first who will challenge me," or "The first needs inspiration." This group did not survive and, before they folded, went through the trauma of firing their first fiddle.

## **The Paradox of the Second Fiddle**

Everyone felt that a second violinist was the most likely member to leave a quartet. Players assumed that the seconds had less to do, and thus they were frequently burdened with business responsibilities. While seconds did not often suffer in comparisons with first violinists on technical ability, they did suffer in charismatic or inspirational comparisons (with some exceptions). First violinists were in the forefront in concert, at social gatherings, and during discussions of musical interpretation.

Most quartet players recognized and acknowledged the difficulties inherent in the second violinist's role. Among the

more successful quartets, the first violinists attributed their position as first to personality and, less importantly, ability. As one first fiddle put it, "There are born leaders and born followers. However good he is, our second fiddle would never be a first—whatever he tells you."

More importantly, second violinists in successful quartets were either content or resigned to their position. One said, "I'm naturally a second fiddle. I think it's a basic psychological difference." Another acknowledged that "six years ago you might have been able to persuade me" to play first. Many were proud of their position, e.g., "I don't mind saying I'm a good second fiddle."

The other members of successful quartets were often quite complimentary of their seconds: "Our second fiddle has a beautiful way of phrasing. Beautiful style." Only one—a member of the quartet that openly acknowledged that their first violin was their leader—attributed little value to the position, saying "he doesn't matter that much."

First violinists in less successful groups were generally less understanding. They recognized the personality differences between the two roles but were not often complimentary. One was almost insulting: "You shouldn't get away with anything if you're playing second, but you can."

In the less successful quartet that is now doing well, the second violinist was very content with his position: "I always remember thinking I'd like to play second violin in a quartet—which must sound like a funny sort of ambition because most people think playing second isn't very ambitious, but somehow it appealed to me more than playing first." He also took great pride in his work, saying, "The actual depth of sound comes from the middle two parts and the cello." This reflected a famous second violinist's metaphor for a string quartet. In a BBC interview, he said that a quartet is like a bottle of wine. The first violin, who sits out front and gets everyone's attention, is the label. The cellist, who acts as the base for the group, is the bottle. The second violin and the viola are *the contents*.

Another second violinist in a less successful quartet expressed more role conflict than anyone else. He stated, "There are some quartets that swap the two fiddles quite regularly." We never saw or heard of this in any quartet—only when they played trios would the first violinist sometimes sit out. He expressed ambivalent aspirations: "Yes, I'd play first. I've never considered myself a very happy second . . . but I don't know if I'd be any good at playing first." He later repeated, "As an actual leader, I don't think I'd be very good." He didn't appreciate his task, especially in the traditional pieces: "When you get a subordinate part, you feel you could throttle the composer." He also got the story about the bottle of wine wrong: "the second fiddle is the wine." Finally, he was unhappy about his lack of social recognition: "It's a very important position but people never seem to know about it."

Although second violinists in successful quartets tended to accept their role, they still expressed a desire to be a first

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violinist as frequently as seconds in unsuccessful quartets. Approximately half of the second violinists in both the more and the less successful quartets expressed an interest in being a first fiddle; they also expressed reservations about their ability to succeed as a first. In our study, having a second who wanted to be leader appears to be unrelated to their quartet's success.

### **Confrontation versus Compromise**

At first glance, most conflicts within quartets focused on how they would play a piece—their primary task. Quartet members repeatedly noted, however, that many of these conflicts were less substantive than they appeared. As one second violinist put it, "Bad mood, trouble at home, and outside sources lead to arguments." Rather than continuing to confront each other, quartets often decided to abandon discussion when they were mired in a troublesome dispute. They could return to it later—maybe. Another second violinist expressed it best: "If it's important, you can always bring it up another day." They used what Pruitt (1981) called a time-out (extended for several days) or what Ury, Brett, and Goldberg (1988) called a cooling-off period. This is a particularly effective strategy for resolving irrelevant, disruptive controversies: They simply disappear due to a lack of continuing import.

When differences of opinion about how to play a piece did not disappear, successful quartets often decided to play it one way in one concert and the other way in the next. Playing the second interpretation, however, was rarely necessary, as the players typically incorporated in their play enough of each other's concerns when they played it the first time to satisfy the members who had held conflicting opinions. They did not openly compromise, but they avoided continuous confrontation.

Another popular strategy to resolve musical disputes gave precedence to the person playing the tune. Ironically, this strategy reinforced the philosophy that first violinists were also the groups' leaders: as the primary tune-players, they then controlled most of the authority for musical decisions. Thus, groups handled conflict, as well as the leader-democracy paradox, with effective inconsistency, espousing democracy while giving the first fiddle, the player of most of the tunes, the authority to resolve their most important musical disputes.

Delay, playing a piece both ways, and giving control to the person with the lead managed conflict by preserving the integrity of group members' opposing positions. Successful quartets used five additional strategies that also preserved a conflict's contradictions: (1) Members did not concede when they felt strongly about an issue. As one first violinist put it, "You must not compromise." (2) They played much more than they talked during rehearsals and realized that this was functional: "When you play, what is right and what is wrong emerges." Not only that, playing helped avoid dysfunctional conflict: "We have a little saying in quartets—either we play

or we fight." (3) They had well-established, implicit rules concerning what could be said and what couldn't: "There are things you just don't talk about." They recognized that Pandora's box would open if they violated these unwritten rules: "Obviously you know where the sore points are. If you press on them, if you invite them, it's a massacre." (4) They also recognized that they each shared the same superordinate goal: "No matter how many rows we have about the music, we know we're talking the same language. We know fundamentally we want the same things." Finally, (5) they expressed the general feeling that conflict was good: "Tension is important." Another put it more directly: "You can sometimes flare up and have an argument; that isn't a bad thing provided that arguments are not carried outside." He also said, "Whereas four years ago we would accept compromise, now we're digging in there a bit, which is good." Only one member of a successful quartet, the second violinist in the only quartet that gave strong authority to the first violinist, disagreed: "Arguments rarely flare up. One sits stewing most of the time."

The less successful quartets used five strategies, although their strategies were much less effective: (1) Many simply avoided conflict. One experienced first violinist said, "There's nothing like a quartet to build tension. Things can start as a discussion and turn into an argument that can only be saved by having a stiff whiskey or something." (2) They realized that they should play more in rehearsals, but they ended up talking too much anyway. The viola player in one group said, "Yes, I think we argue too much and we should play more." This group's second fiddle went farther: "When we disagree, we play it one way and then the other. We still fight later—I don't think it ever gets resolved. There are quite a few unresolved issues." (3) They had different perceptions about the nature of their conflicts. One member of a married couple referred to the two of them as "more compromising." The viola player in the same group felt differently: "He makes the best case anyway, because he's insistent." (4) They acquiesced in arguments and only expressed their continuing disagreement in the worst possible place—in concert. More than one first violinist indicated that they complied with group decisions about musical interpretation, but they played the tune their own way in performance. (5) They often compromised. One second violinist was unhappy about it: "People tend to give way. I don't know if we really satisfy anybody. I think we should have a walkout once in awhile." The viola player in the same quartet agreed: "The atmosphere isn't terribly nice. We never really argue fiercely about a piece." Important conflicts resurfaced (sometimes because of previous compromises), even after discussion had apparently resolved the issue.

One unsuccessful group experienced almost continuous open conflict, primarily between two of its members. One may have enjoyed it, saying, "I think people should argue and discuss all the time." When asked about the best thing about being in a quartet, he said, "Being able to tell someone what you think and not be sacked." The two less combative members recognized the extent of their group's conflict: "We have as much trouble as we ever had. . . ."

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Yes, we have quite a few differences to resolve." The second combatant, the first violinist, had a strong self-focus: "It's a stable group I think. Resolve conflict? We often don't. I've come home in an absolute fury." He clearly identified how intense and frequent their conflicts were: "Occasionally we have a rehearsal without a row at all. It does happen." They estimated that they had only one rehearsal in ten that did not include a serious argument. The first fiddle acknowledged how wearing this was, saying, "Every rehearsal is like a lesson with three teachers who disagree with each other." He coped by being forceful: "If you continue screaming at every opportunity, you have a bloody good chance of persuading them." The news of this group's breakup was not surprising.

## Similarity and Diversity

Quartet players varied little in terms of their favorite composers. Beethoven was an almost universal favorite; Haydn, Mozart, Bartok, Britten, and Schubert were also mentioned frequently. After Beethoven, they often said that they preferred what they were currently playing. Composers who came to mind in the interviews were apparently the composers whose music they had been recently asked to play. Beethoven, however, seemed to hold a special place for almost everyone.

Although preferences for different compositions did not separate unsuccessful from successful quartets, clear differences resulted in their general orientations to the music and to each other. The members of the more successful quartets independently and almost unanimously described their incredible enthusiasm for quartet music as an obsession. They were unanimous (with one exception) in their opinion that the quartet repertoire represented each composer's greatest work. They also saw each of their fellow group members as very similar "in all the important ways," i.e., with respect to the music. They frequently said that the reason they were together was to play this wonderful music and that everything else was secondary.

The members of successful groups also tended to be friends. As one viola player put it, "We are friends. . . . To play chamber music with someone you don't like—I can't imagine that. How can I play with somebody I don't like? He can be a Paganini for all I care. I think we play more and more to each other." Several described a string quartet as a marriage, not to one person but to three, with the exception that there is no sex (which, of course, is not always true).

The more successful quartets had a strong internal focus: Their primary audience was each other. They played to please themselves individually and collectively before they played to please an audience. Consideration of what an audience desired rarely, if ever, entered into their determination of how to interpret and present a composition.

Three of the members of one of the more successful quartets were all students of the same violin teacher. Not surprisingly, they claimed that their similar learning experiences



contributed significantly to their ability to play together as a group. Three of the four members of another successful quartet revealed similar philosophies by independently (and accurately) explaining the metaphor of a quartet being like a bottle of wine.

The less successful groups were much more negative about each other, their style, and the music; they also focused more directly on audience reactions. The only less successful group in which members said that they were friends was the group that has since prospered and did not fold. Less successful groups often suggested that similarity was not beneficial: "We all have completely different personalities. I think this helps in a way. . . . We come from different schools and we do sound different. I think it makes for an interesting sound to have four different styles. . . . I think we all like the independent style." The European style, however, dominated the British music scene, making this statement sound like a convenient justification for unsuccessful attempts to coordinate their individual sounds.

They also reported feeling little inspiration. When the first violin of one quartet was asked about the best thing about being in a quartet, his answer was "It's the least boring." The viola player from the same group acknowledged that "We'll never be one of the greats."

### **Quantitative Analyses**

We conducted several exploratory quantitative analyses, reported in the next sections. These data were coded from the interviews by two independent raters; differences were rare and were resolved in joint discussion with the authors.

**Successful versus unsuccessful quartets.** A series of one-way analyses of variance, shown in the Appendix, add confirmation to some of our qualitative conclusions. Successful quartets had been together longer than less successful groups. They reported fewer nerves before a concert and more positive feelings when a performance was going well; they spent more time playing than talking in rehearsals; they more often felt a piece could be overrehearsed than did the less successful groups; and they were more interested in duplicating the musical rather than the technical aspects of their rehearsals in concert. They described their conflict-resolution strategies as more democratic and they attended to their audiences for feedback less than the members of less successful quartets.

**Demographics.** Relatively few quartets included a mix of sexes or a mix of ages. Thus, these results should be interpreted cautiously. Quantitative analyses of gender, age, and school backgrounds, however, suggested that similarity was positively related to stability, success, or both. Simple analyses of variance (see Appendix) indicated that same-sex groups, compared with mixed-sex groups, were more stable and expected more stability, didn't think a piece could be overrehearsed, played more than they talked in rehearsal, felt conflict was healthy, liked modern music and travel, lost

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their nervousness during a concert, and came from less musical families. They also indicated that their minds wandered less when they performed and that they would be friends with the other members of their quartet even if they didn't play together.

We arbitrarily divided quartets on the basis of a 10-year difference in the range of their members' ages (see Appendix). Groups whose members were similar in age were more successful, had less severe conflict and less agreement evaluating their concerts, and felt that the first violinist was more in control of the music.

Similar school backgrounds were less frequent (see Appendix) but led to greater success, stability, and expectations that they would continue to be together, more positive feelings about quartet music, fewer surprises and more control of the music by the first violinist, and not wanting to continue playing after concerts.

### **DISCUSSION AND CONCLUSIONS**

The more successful British string quartets provided clear evidence that they recognized and managed the inherent paradoxes they faced. All of the groups except one espoused democracy. First violinists in the successful groups, however, recognized the need for a directive leader more than first violinists in the less successful groups. They took active control of many of the group's activities and acknowledged this in their interviews. They did not advertise their leadership, however, within their group. Instead, they advocated democratic action and, it appears, did so sincerely. Thus, they preserved the leader-democracy paradox by acting as a leader while simultaneously advocating democracy.

Other members of more successful quartets attributed more influence to the first violin when they were asked directly about it; they also stressed that their group was democratic. Inconsistent perceptions were adaptive: By ignoring or distorting the objective reality of the first violinist's influence, they felt that they had an equal say. In the less successful groups, members felt that democracy ruled too much: Everyone but the first violinist looked for more leadership and authoritative action.

Second violinists in successful string quartets accepted their secondary role more than their counterparts in less successful groups. At the same time, they were openly appreciated by their fellow group members, even if they were underappreciated by their audiences. Successful group members attributed their two violinists' positions to personality rather than ability. They seem to have acknowledged that (1) they were good enough to have done well and (2) their weakest link was critical to their success. Less successful quartets, who had more doubts about their own competence, gave much less credit to their second fiddle. Like leader-democracy, this paradox required constant managing, as the second violinists in the successful groups were just as likely to aspire to be first violinists as those in the less successful

groups. The paradox, then, did not disappear: it was also managed but was not acknowledged within the group.

Successful groups handled conflict with a variety of strategies that allowed the conflict to continue without being disruptive. Members worked out their differences as they played the music: They absorbed the conflict rather than compromising. They viewed conflict as constructive but let emotions dissipate and unnecessary disruptions disappear by dropping things for awhile. They pushed their points of view in their arguments, then dropped the issue, letting its substance either resurface or find its way into their play. Conflict management was consistent with their performance goal—to produce an integrated, unified sound. Less successful groups compromised, talked more, and evidenced all the characteristics of groups that were “stuck,” in Smith and Berg’s (1987) terms, by trying to resolve their basic conflicts.

The balance between similarity and diversity within successful groups tipped toward similarity. Being of like age, the same sex, and having the same school background were related to stability, general success, or both, along with a variety of attitudes (e.g., liking travel, expecting stability, etc.) that may have contributed to making interaction easier.

Management of the leader-democracy and conflict paradoxes also overlapped: Many quartets adopted a rule that the person playing the tune would have ultimate control of that part of the composition. As this was most often the first violinist, the groups were essentially centralizing control. They acknowledged the influence this gave the first violinist but were uncomfortable about admitting it. They also added that the rule was necessary if they were going to play well and that each of them controlled the interpretation when the music gave them the lead.

The inherent presence of paradox seems obvious in string quartets, supporting Smith and Berg’s (1987) predictions. Members of successful quartets recognized the paradoxes, but they consciously avoided discussing them. Direct confrontation of these unsolvable contradictions appeared infrequently among the successful groups, which does not support Smith and Berg. Instead, paradoxes were managed implicitly. Players enacted both aspects of the leader-democracy paradox, subjectively perceiving that they had input (espousing democracy and the right to voice) while objectively giving the first violinist more influence in the group. Their success at managing the paradox of the second fiddle depended on second violinists accepting their secondary status while their colleagues supported them in their difficult role. And conflict was appreciated—up to a limit. Potentially divisive confrontations were put on hold so that only the important issues would resurface. Successful quartets did not resolve the contradictions in these three paradoxes. Instead, they recognized and tolerated them, and handled them quietly, rarely raising paradoxical issues for discussion. This may be why superordinate goals (Bass, 1985) are effective: They neither specify particulars with which group members might disagree, nor do they constrain different means for implementing the group members’ goals.

## **Generalizing to Other Work Teams**

The string quartets' task and its demands on the group differ in important ways from many work groups'. Surgical teams, R&D units, and almost any other work group have less interdependent, less immediate, or less complete interactions than string quartets. Other groups may not face a leader-democracy paradox; legitimate authority may clarify formal power differences. Nevertheless, the desire for democracy is not unusual, and its contradiction within a group is typical. Similarly, the paradox of the second fiddle, while not being played out to such an extreme, is an analog for people who feel that their talents are underappreciated. And finally, as noted, conflict and diversity are ubiquitous, inherent group phenomena. The collection of different individuals into a group ensures that its members are at least somewhat dissimilar. When diversity leads to conflict, groups often feel compelled to respond. Thus, the underlying processes exemplified by string quartets may simply be magnified versions of the same processes in other work groups.

Thus, generalizability to less intense groups may still be possible. If the paradox-management tactics of string quartets are applicable, they would include (1) Leading quietly. Espousing democracy may be the philosophical basis for participative decision making; at the same time, groups typically need leaders (Shaw, 1971). Having a member fulfill the leadership role while others simultaneously feel that they have an equal say in things effectively satisfies both sides of the leader-democracy paradox. (2) Realizing that a group's weakest member is its most critical contributor for conjunctive tasks (Steiner, 1972) may encourage appreciation of marginal contributions to the group effort. (3) When facing conflict, groups might (a) leave hot topics alone to give everyone a chance to cool off (Pruitt, 1981; Ury, Brett, and Goldberg, 1988); (b) never settle for majority rule which, at a minimum, engenders minority dissatisfaction; and (c) know each other well enough to know what can't be said, i.e., ignore unavoidable dissimilarities and let policies evolve without raising issues explicitly. Groups might also foster similarity amongst themselves. Any group of people may be different enough to contribute sufficient heterogeneity to ensure richness and life to their group. Similarity may lead to longer, more productive, and more successful group life.

For string quartets, especially successful string quartets, the task is so inspiring by itself that diversity and conflict become a secondary and relatively inconsequential interference. The fact that they never quite achieve their ultimate goal—to produce transcendent, glorious sound that is just beyond their reach—keeps them continuously striving to achieve it (Butterworth, 1990).

This approach to achievement depends on their dedicated, inward focus: They pay less attention to their audiences than they do to themselves. Indeed, they often differ on how a concert went. Thus, much of their focus when they evaluate their performance is on their own individual play, followed by the play of the rest of the group (Butterworth, 1990). While quartets may need to fit into their market by

playing traditional pieces in the European rather than the American style, further environment scanning may be dis-functional. This internal orientation is in direct opposition to common organizational wisdom (e.g., Emery and Trist, 1965; Lawrence and Lorsch, 1967) that espouses organization-environment fit. Rather than adapting to their external market, successful quartets have kept their focus internal, possibly because of the intensity of their task.

This intensity may also accentuate the consequences of paradoxes (and other intragroup events) for string quartets. As many people said in their interviews, the best part of being in a quartet, after the music, was being able to interact so closely with three other people. Many followed this, however, by saying that the worst part of being in a quartet was also having to interact so closely with three other people. Nevertheless, the interactions of string quartets, in extremis groups, provide a magnified picture of how their interactions may proceed.

This study presents a strong argument in favor of Smith and Berg's contention that paradoxes are inherent in groups and a strong argument against their hypothesis that groups should confront their paradoxes. In this population, paradoxes are understood and accepted and managed implicitly by the members of successful groups. The push by less successful quartet members for their leaders to take more authority suggests that groups realize that they must sit right on the fence, wavering between conflicting paradoxical forces. Living with, understanding, and absorbing group paradoxes, as evidenced particularly by successful second violinists, may be an essential element for group success.

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### APPENDIX: Additional Results

1. Quartets were divided into more ( $N = 10$ ) and less ( $N = 10$ ) successful groups on the basis of a median split on the general success measure. We report the means of the individuals' responses for the strongest effects.

	Less successful quartets	More successful quartets	d.f.	F
Quartet stability (in years)	4.90	9.14	20	7.46
How good do you feel when a concert is going well? (1 = fantastic, 3 = OK)	2.04	1.67	49	5.97
How is time spent in rehearsal? (1 = mostly play, 3 = mostly talk)	1.85	1.36	49	5.87
Can a piece be overrehearsed? (1 = never, 3 = certainly)	1.71	2.43	26	4.35
Duplicate rehearsal in concert, technically speaking? (1 = never, 3 = always)	2.48	2.10	38	4.00
Duplicate rehearsal in concert, musically speaking? (1 = never, 3 = always)	1.52	1.87	34	3.90
Audience provides feedback on our performance? (1 = no, 3 = yes, that is how I judge our performance)	2.08	1.86	44	3.89
Extent problems solved democratically (1 = not at all, 5 = very much)	3.12	3.71	48	3.66
How nervous are you before a concert? (1 = very, 4 = never)	2.27	2.74	51	3.35

2. Quartets divided into mixed ( $N = 4$ ) and same-sexed ( $N = 16$ ) groups.

Variable	Same	Mixed	d.f.	F
How is time spent in rehearsal? (1 = mostly play, 3 = mostly talk)	1.48	2.43	50	11.80

Does nervousness disappear during concerts? (1 = never, 3 = always)	2.78	1.67	38	11.62
Quartet stability (in years)	8.75	2.00	76	11.11
Like to travel (1 = hate it, 3 = love it)	2.03	1.30	44	7.69
Like modern music (1 = hate it, 3 = love it)	2.09	1.33	41	7.03
Can a piece be overrehearsed? (1 = never, 3 = certainly)	1.75	2.75	28	5.85
How long quartet will be together (1 = not long, 5 = forever)	3.62	2.63	53	5.18
Is conflict healthy in quartet? (1 = no, 3 = yes)	2.23	1.75	43	4.48
Are adult members of your family musical? (1 = very much, 6 = no)	3.75	2.81	73	3.88
Does your mind wander during concerts? (1 = never, 3 = always)	1.93	2.25	43	2.92
Would you be friends if not in quartet? (1 = no, 4 = yes, all of us)	2.35	1.80	41	2.78

3. Quartets divided on the basis of a median split on the range of ages within each group (high = 10 years or more,  $N = 5$ ; low = less than 10 years,  $N = 15$ )

Variable	Low	High	d.f.	<i>F</i>
How severe are conflicts in quartet? (1 = very, 3 = seldom squabble)	1.93	2.46	55	11.04
Extent first violinist has control over music played (1 = always, 5 = democratic)	2.12	3.00	53	7.24
We often agree on how a concert went (1 = never, 5 = always)	2.56	3.50	47	6.60
General success score	0.47	-1.33	75	3.52

4. Quartets divided on the basis of a median split on the similarity of their school backgrounds (low = 0 or 2 members attended the same school,  $N = 13$ ; high = 3 or 4 attended the same school,  $N = 7$ )

Variable	Low	High	d.f.	<i>F</i>
Quartet stability (years together)	4.96	10.59	75	12.81
General success measure	-0.87	1.61	75	8.51
Ever want to play more after a concert? (1 = no, 2 = yes)	2.00	1.50	19	8.14
How do you feel about quartet music? (1 = it's the best, 5 = hate it)	1.49	1.15	57	6.97
How long will you be together? (1 = not long, 5 = forever)	3.18	3.95	51	5.69
Does first ever surprise you in concert? (1 = no, 3 = often)	2.27	1.67	19	4.68
Extent first has control over music (1 = always, 4 = democratic)	2.55	2.00	53	3.46

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*Administrative Science Quarterly*, Vol. 22, No. 4. (Dec., 1977), pp. 606-639.

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*The Academy of Management Journal*, Vol. 32, No. 2. (Jun., 1989), pp. 402-423.

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