Research

Twins Included and Not Included in Special Programs for the Gifted

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> his study examined a wide variety of factors associated with the cognitive and affective development of a sample of identical and fraternal twins in cases where one twin was included in a special program for the gifted and talented and the other twin was not included. Major findings and recommendations are discussed with regard to differences in performance, motivation, and affective factors such as adjustment, style, and self-concept. Twins included in special programs were generally characterized by a traditional academic view of high achieving students. Nonselected twins expressed preferences for more divergent, openended, and unstructured learning experiences. Recommendat ions growing out of this research focus on the types of consideration that should be given to multiple types of abilities and learning styles, especially in the cases of twin assessment.

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Historical Overview and Introduction

One of the closest and most fascinating bonds that exist among human beings is the relationship shared by twins. Centuries ago twins were prominent in myths, folklore, the bible, and the literature of almost every culture on earth. The scientific study of twins is relatively recent. Historically, twin research has concerned itself with biological and psychological issues in which twins are used to study heredity, environment, genetic variables, and the general study of individual differences (Newman, Freeman, & Holzinger, 1937). Frequently, twins have been used as pawns in the nature-nurture controversy, while the specific study of their individual characteristics has been largely neglected.

Until the last quarter of the 19th century, the area of twin studies was virtually nonexistent. It

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was in the work of Sir Francis Galton, the famous English scientist who initiated many of the early studies of eminence, that the study of twins began to take on characterstics of present day scientific research. In his *History of Twins* (1875) Galton suggested that the study of twins would shed light on the nature-nurture question and that "look-a-like" twins came from the same egg, whereas "look different" twins came from two eggs. Galton was the first to develop a comprehensive description of gifted individuals and to search for origins of genius (Calton, 1869, 1874). Thus the study of twins and giftedness did have an early connection.

Purpose of the Present Study

The purpose of the present study was to examine a wide variety of factors associated with the cognitive and affective development of an especially selected sample of twins, in which one twin was selected for participation in a program for the gifted and talented and the other twin was not selected. Specifically, the study sought to answer the following three questions.

- 1. What were the circumstances under which one twin is (or was) included in a gifted program and the other twin was not included?
- 2. What was the nature of the school experience for both twins?
- 3. What was the impact of one twin's selection for the special program on each of the twins?

Sample and Research Design

his study began with a call for data in several journals and newsletters that deal with education of the gifted and talented and twin related publications. The announcements resulted in 119 requests for information about possible participation the study and 62 sets of twins who were interested in participating in the study. The project was designed as a multi-phase study that solicited perceptions from parents, twins, and teachers concerning the "event" of one twin's selection for a gifted program and the non-selection of the other twin. Information was also solicited on aspects of twin relations and individual characteristics of the twin pairs.

As one may note, there were approximately three times as many fraternal twins as identical twins who participated in the study. This is a predictable ratio since statistically there are 2.5 times more fraternal twins born each year than

Table 1 Responses for Multi-Phase Study of Twins Included and Not Included in Gifted Programs

Total Responses							
Phases	N=62	%	Dates of Data Collection				
Phase I- Biographical Questionnaire	62		December, 1982-June, 1983				
Phase II - Test Data On Twins	50	(81%)	March, 1983-June, 1983				
Phase III - Teacher Questionnaire	35'	(56‰)	May, 1983-August, 1983				
Phase IV - Parent Questionnaire	33	(53%)	November, 1983-February, 1984				
Phase V - Twin Questionnaires	27	(44%)	January, 1984-April, 1984				

'Note that 2 or 3 questionnaires may have been filled out on each case depending on the number of teachers each twin was involved with.

identical (Scheinfeld, 1967). The ages of the twin subjects ranged from 7 years to 48 years; 61 of the cases were Caucasian and one case was Oriental. Geographically, participants responded from all sections of the United States and Canada. Twenty-two states and provinces were represented.

A total of 23 cases (i.e., twin pairs) completed all *five* phases of the study. Of the original 62 sets of participants, the five types of twin sub-sets represented in the study were as follows:

Sub-Sets	Participants
Identical Boys	10 Sets
Identical Girls	6 Sets
Fraternal-Same Sex Boys	20 Sets
Fraternal-Same Sex Girls	4 Sets
Fraternal-Boy/Girl	22 Sets

For the purposes of this study, Twin A was designated as the twin selected for participation in the gifted program, and Twin B was the non-selected twin. Concerning the 22 cases of boy/girl twin pairs, it is interesting to note that 11 boys and 11 girls were Twin As

The major method of gathering data consisted of questionnaires especially developed for this study, test score results reported by the schools, and indepth interviews with 9 twin pairs, their parents and teachers. Interviews were restricted to subjects who resided in the Northeast section of the United States. Triangulation of the data was achieved by analyzing responses between and among the twins, their parents, and teachers, and by the use of interviews, observation and analysis of documents pertinent to the gifted programs.

Discussion of Results

he full range of data collected in this study was complex, lengthy, and rich in detail. Because of space limitations, only selected aspects of the data will be reported here, however, a more detailed technical report may be obtained by contacting the authors. In the tables, responses are broken down to distinguish between twin sub-types; that is; identical boys, iden-

tical girls, fraternal boys, fraternal girls and fraternal boy/girl.

Table 2 represents a description of parent responses to one segment of the Parent Questionnaire dealing with the circumstances under which one twin was included and one twin was excluded from the gifted program.

Table 3 presents findings from the Twin Questionnaire dealing with the twins' attitudes in connection with the three research questions. Note that in answer to question 8 all identical Twin Bs responded "Yes", that if given a choice they would have enjoyed being in the gifted class. For fraternal twins this was not the case.

On Being A Twin

ach twin set was asked to respond to the open-ended question, "What is it like to be a twin?" An attempt was made to encourage creative responses by asking the twins to answer in the form of an illustration, poem, or statement. An 11-year-old fraternal Twin A, whose brother is not a successful school achiever, had this insightful comment:

I don't know what it's like to be A Twin. I only know what it's like to be Allen's Twin. My twin is different from other kids. He doesn't join the group at recess and sometimes kids don't like him. If my friends tell me that he did something bad I feel hurt... But I'm proud of his singing and violin playing . . .I can't tell if I'm glad or sorry to be a twin because I always did. But one problem is people want to study you all the time.

In several of the responses it was noted that the twin bond is quite physical — particularly in identical twins. Note this reflection from a 21 year-old identical Twin A:

The quality of the relationship I share with my twin was always physical. We beat each other up and we hugged each other; tripped each other and made up. The physical bond we share makes itself obvious in our closeness and comfort with each other and transcends great distances.

	Total (N =33)	Percent	ldent Boys	ical Girls	Fraternal Boys	Same-Sex Girls	Fraternal Boy/Girl Twins	
Circumstances under which one twin was included and one twin not included in the gifted program								
Was the gifted program New? Established? A few years old? Didn't say	17 10 5	52% 30% 15% 3%	4 — —		6 6 1	1 1 1	6 1 2	
At the time of program selection, were the twins in separate classes? Yes No	31 2	94% 6%	4_	4 —	12	3_	8	
3. What was the role of the classroom teacher in the selection process? Significant Somewhat significant Not significant Do not know	20 5 2 6	61% 15% 6% 18%	3 1 —	2 1	9 1 — 3	1 2 —	5 1 1 2	
Did you have another child (besides Twin A) involved in the program at any time? Yes No	9 24	27% 73%	1 3	1 3	4 9	2 1	1 8	
5. To your knowledge, was Twin B ever involved in the selection process? Yes No Do not know	12 17	36% 52%	3	2	3 9	1 1	3 6	
6. Was there a concern shown by school officials that twins were involved in the selection process? Yes No	5 28	15% 85%	_	2 2	2 11	1 2	_ 9	
7. Did you contact the school as to their decision to include one twin and not the other? Yes No	9 23	28% 72%	3	1 3	1 12	1 2	3 6	
Did you question the wisdom of the schools decision to include one twin and not the other? Yes No	*17 16	52% 48%	4	3	5 8	1 2	5 4	

'Note that 7 out of 8 parents if identical twins did question the school's decision to include one twin.

Other twins described a relationship where there is someone you can always "rely" on and trust" and someone "who understands you better

than anyone else." The wide range of responses to this question contributed much to our understanding of the twinship bond.

Table 3 Twin Questionnaire — Part III — Twins and Gifted Programs

			Fraternal	Fraternal Same-Sex Twin A Twin B Twin A		rnal Boy/Girl		Totals Percent	
Do you know why you were selected for the gifted program? (Twin A									
only) Yes No	5 1		12		8		25 3	(891) (11%)	
Do you know why you were not selected for the gifted program? (Twin B only) Yes No		2 3		9 4		7 . 2	18 9	(67%) (33%)	
Do you know why your twin was (or was not) selected? Yes No	3 3	2 3	7 6	11 2	6 3	8	37 18	(67%) (33%)	
4. How did you feel about the decision to include (or not include) your twin in the gifted program?									
Very Good Pretty Good Good Not Good Definitely Not Good	1 1 1 3	1 1 3 -	1 6 4 2	4 4 2 3 —	6 1		4 4 18 15 9	(8%) (16%) (33%) (27%) (16%)	
5. How do you think your twin felt when you were included (or not include) in the gifted program and he/she was (or was not)? Very Good Pretty Good Good Not Good Definitely Not Good		2 - 2 1 -		2 2 5 2 2 2		1 1 5 1	5 6 16 17 11	(9%) (11%) (29%) (31%) (20%)	
6. Were any close friends chosen for the program? Yes No	6	3 2	11 2	5 8	7 2	6 3	38 17	(69%) (31%)	
7. Might any of these activities in the gifted program been equally interesting to your twin brother or sister? (Twin A only) Yes No	2		2 2		5 4		9	(32%)	
Sometimes '8. If you had a choice, would you have liked	4		9		_		6 13	(22%) (46%)	
being in the gifted class? (Twin B only) Yes No		5		6 7		4 5	15 12	(56%) (44%)	

Table 3 (Continued) Twin Questionnaire — Part II — Twins and Gifted Programs

	Identica Twin A	al Twins Twin B	Fraternal Twin A	Same-Sex Twin B	Fraternal Twin A	Boy/Girl Twin B	Totals	Percent
9. Were you ever included in some of the activities of the gifted class? (Twin B only) Yes No		1 4		6 7		3 6	10 17	(37%) (63%)
10. In your case do you feel being selected (or not being selected) for a gifted program caused problems between you and your twin? Yes No	2 4	3 2	2 11	1 12	- 9	2 7	10 45	(18%) (82%)
11. Do you think having one twin chosen for a gifted program could cause problems between twins? Yes No	4 2	3 2	9	7	8	6 3	37 16	(67%) (33%)

'Note that all Twin B's that were identical twins responded "yes" — that if given a choice, they would have liked being in the gifted class.

On Differences in Identical and Fraternal Twins

he event of one twin being included in a gifted program occurred more often with fraternal than identical twins, but such placement continues to occur with both types of twins in relative proportion to the frequency of twin types in the general population. Identical twins compete nearly always on equal grounds because of their common genetic background; however, fraternal twins are as alike as brother and sister, with an average of 50 percent of genes in common. Thus, fraternals may be quite similar or quite different in academic ability and performance. Moreover, the degree to which fraternal twins look alike is not related to the degree to which they may have common cognitive levels and styles. Identical twins continually emerge from each other's shadows and seek their own identity; thus, for certain periods of individual development (i.e., adolescence) they require special degrees of sensitivity on the part of parents, teachers, and other significant persons in the twins' environment;

On Participation of Twin B

The questionnaires and interviews indicated that there were cases in which Twin B was invited to participate in the gifted program on an occasional basis (e.g., field trips, seminars, ect.). Parents agreed that this inclusion as a "guest participant" was an excellent example of sensitivity mentioned above. This approach helped to alleviate parental requests for Twin A to play

down his or her enthusiasm for various experiences that were provided within the context of the gifted program.

On Class Placement of Twins

indings indicated that most twins in this study were placed in separate (regular) classrooms. Such placement meant that teacher-related evaluation in the identification process for the gifted program was usually carried out by different teachers. A majority of twins preferred separate regular classroom placement (66 percent), but would have liked to have some part in the decision making related to this issue. Several parents noted that placement in separate classes often results in competition and disruption for the twins when at home. This unexpected finding was attributed to comparison between circular approaches, assignments, teachers, and the general atmosphere of the respective classrooms. At times, separate placement was reported to cause more disruption then placing the twins in the same class. Oldertwins remarked that it was often advantageous to be placed together for certain subjects such as mathematics and foreign language, because they could then share in homework and practice activities.

The following statement from a mother of identical twin boys, age 13 illustrates this issue.

Through the years it has seemed to us that Evan, Twin A has had the "better teachers." Ronald, Twin B has faced the worst breaks due

to teachers' leaving, teachers' illness, varied substitutes — some good, some terrible. Ronald didn't like his second grade teacher. He was unhappy every day, while Evan went off smiling. It was very difficult to watch. Different classroom teachers can develop different attitudes. The teacher situation accentuates (both positively and negatively) the personality of each of our children.

hat was apparent in the information provided by parents was that this particular group of parents was extremely sensitive to factors related to the education of their children and able to recognize the value of high level professionalism in teaching.

On Collaborative Efforts

Several of the twin pairs in this study were capable of an intricate and elaborate collaboration on projects that were carried out at home. They engaged in a kind of division of labor for efficiency purposes that was often quite remarkable. For example, a set of fraternal twin boys collected baseball cards. Twin A was responsible for classifying and categorizing the cards, whereas Twin B, the more assertive "entrepreneur," handled the buying and selling end of things. Other sets of twins, however, wanted no part in working together and frequently their ideas and attitudes were in conflict.

On Knowing the Twins in School

Very few teachers, principals, or guidance counselors knew both twins. In most cases, conversations related to one twin or the other. Twins at the high school level reported that teachers often had no idea that they were members of a twin pair. There seems to be no systematic way of recording information about twins on school records and students seldom made this information available to their teachers. An examination of several school records indicates that there is no place where it might be recorded that a child is a member of a multiple birth unit.

On Differences in Motivation and Attitudes

Many of the twins' responses to interview questions indicated that there was a complementary relationship between the twins so far as motivation and attitude toward school was concerned. This finding was also supported by interviews and anecdotal information provided by parents. Generally, Twin As were more comforming, approval oriented, and comfortable with the typical school routine. Twin Bs, on the other hand, appeared to be more creative and willing to express themselves in visual, spatial, and mechanical ways. They also showed a preference as learners to pursue self-chosen topics and areas of interest for their own satisfaction, rather than the approval of teachers or parents. Twin Bs noted that school did not usually appreciate their talents or abilities or allow them opportunities to develop their own styles of learning. One Twin B, for example, took great pride in describing how he took

apart and put back together a bicycle at a very early age. But he also noted that neither his parents nor teachers "cared about" his interest in pursuing this type of activity.

Twin As frequently expressed an intenseness about school work and even a nervousness or anxiety about performing well in school situations. This observation was verified by information supplied by parents and teachers. Twin Bs, on the other hand, seemed more content with themselves and even more self-confident in an "inner" way. The following comment from parents of fraternal twin boys highlights this finding:

He [Twin A] is always comparing himself to others. He needs constant reassurance and is by far the more insecure twin in certain ways. [Twin B], although somewhat more inferior to [Twin A] in academic performance, never seems to have that tremendous lack of confidence. In fact, it was [Twin B] who was first to go on an overnight camping trip alone. There is a distinct difference in their kinds of maturity.

On Parental Attitudes

ne of the purposes of this study was to examine parental attitudes with regard to both the issue of having only one twin placed in the gifted program and how such placement affected factors such as individuality and competition between the twin pairs. Slightly over half of the parents agreed with the school's decision not to include Twin B's in the gifted program. Why? Generally, their reasons were that Twin B did not appear as capable or motivated in academic areas as Twin A, and therefore, they felt that Twin B would easily become frustrated in the special program. In some cases parents advocated that Twin B should be in the program, but they did so a year or more later after the selection of Twin A. The reason for this reassessment usually related to the type of work that was carried out in the special program and the realization that Twin B could successfully complete typical program activities. Changes of opinion on the parts of parents also grew out of negative attitudes that Twin Bs expressed after they had learned more about the program and felt that they would like to be included. Inpne case of identical twin girls, however, parents felt strongly about the "individualization of twins", and viewed the selection of one twin and not the other as a prime example of treating the twins as individuals. Thus, we note some variations in parental attitudes toward independence and individualization on one hand, and the role of parents as advocates for their children on the other. In some cases, children adopted the attitude of their parents (e.g., "If it's okay with them, it's okay with us...') and in other cases children remained staunchly independent from parental attitudes.

On Profiles of Gifted Programs

Over half of the gifted programs analyzed were new to the community at the time that one twin

was selected. Teachers of the gifted were often newly hired and generally they came from outside the present school staff. Thus, new teachers were not familiar with the general faculty or the student population, and almost all of them had no idea about twin membership. Also, the programs varied with regard to the issue of "visibility." In some schools the programs were well known by all students and in others, the twins (Both A and B) did not really understand what the gifted program was all about. How a new program is viewed by the community and teaching staff is an integral part of the program's development and eventually may have a direct bearing on students.

On Selection Procedures

endings indicated that 60 percent of the programs studies relied on teacher referrals as the major criterion for gaining entrance into the special program. Achievement test scores ranked second, and in only one case were student products of self-nominations used to make final selections from a larger talent pool. Parent inventories were used in seven cases, but parents were not personally interviewed concerning the talents or abilities of their children. In the following comment, a teacher of the gifted reflects on the selection process:

Yes, we have criteria for selecting gifted students ranging from teacher nomination to test scores and report card grades — and then we have our "exceptions." Recently, the psychologist was chewing my ear off about Matthew. He does not test as high as others. His work is not terrific. In fact, he often hates school. But he is highly creative and productive. So we took Matthew into the gifted program...because Matthew needs the program now. We must have slots for exceptions like Matthew because the truly gifted do not fit a mold.

The programs appeared to have a strong positive impact on Twin A when there was a curriculum focus on the child's personal development as well as on thinking processes. Comments such as the following emphasize the importance of this curricular focus:

No one had ever let me speak or think like that before ...It was like philosophy in the fifth grade. It was okay to say what you think and explore, to be able to go off on tangents...

I learned it was all right not to be smart all the time and at everything. In this program, I was in with lots of smart kids. I learned not to be so quick ... to wait my turn and listen to others ...I learned more about myself.

On Teacher and Peer Expectations

Twin As responded that there was a noticeable difference in treatment by teachers and peers after they were selected for the special program, whereas very little change was observed in treatment by parents or the twin sibling. Interestingly,

however, the difference in treatment ranged from positive changes (i.e., more dignity, respect and freedom) to negative changes (i.e., more assignments and higher expectations). Peer differences in treatment favored more positive attitudes, and a number of Twin As said that friends had a greater respect for them because they were selected for the the special program.

On Impact Between Twins

The most negative impact of having only one twin selected for the gifted program occurred in cases where Twin B was closest to Twin A in academic potential and school performance. All identical Twin Bs indicated that, if given a choice, they would have liked to have been selected for the program and would have eagerly accepted the nomination. Although the impact of having only one twin in the program had various influences on the twin pairs, it seems safe to conclude that no serious longterm problems resulted because of this process. Eighty-two percent of the twins responded that one twin's selection for the special program did not cause trouble between them. Careful examination of the data, however, did indicate that whenever "trouble between twins" was reported, it was always for cases of identical sets. Obviously, there is an increased competition between identical twins because they are the ones most able to compete with one another on equal ground in most intellectual and physical areas. Because they are alike in nearly 100 percent of their genetic makeup, it is natural for them to be often interested in and stimulated by the same ideas, activities, hobbies, and sports. Thus, the stronger competition between identicals seems to be logical. We would also note that 67 percent of the twins responded that one twin's selection for a gifted program "could cause" problems with twins depending upon the relationship between them.

Recommendations and Suggestions for Further Research

Ithough the number of cases involved in this research was relatively small, we believe that certain recommendations can be offered for identification and programming practices and for further research related to this topic.

1. The first recommendation is that a school should not place both twins in a special program simply because they are twins. There may be significant differences in ability and motivation, and therefore each child should be considered on an individual basis. Nevertheless, cases of identical twins should be treated with great care and sensitivity. The paradox in identical twins is the balance between intense competition, yet loyal bonds of support between the twin members. Under most circumstances, both identical twins should be capable of benefiting from a special program (when one has been selected) and, depending

- upon the nature of the relationship between the twins, they may enjoy and profit from being in the program together.
- 2. We recommend that the program should encourage Twin B to be a guest participant in the special program, especially on those occasions when activities such as a guest speakers, field trips, or other special events are being planned. Such occasional participation may allow Twin A opportunities to share his or her enthusiasm for the program with Twin B and may serve the purpose of increasing motivation and performance in Twin B. Generally, however, we believe that all decisions should be decided upon individally and that teachers, prents, and the twins themselves should have input into placement decisions. Our findings indicate that, in some cases, the twin not doing well academically may perform significantly better when placed with his or her twin on a regular basis or through the guest participant procedure.
- 3. Whenever possible, twins should be provided with opportunities for collaborative efforts on school projects and home projects. If both twins are not included in a special program, it might nevertheless be worthwhile to encourage a joint effort on school or home projects particularly when such collaboration is consistent with the working and learning styles of the twins, and if their relationship is of a nature that promotes positive interaction through such projects.
- 4. We recommend that school records indicate somewhere that a student is a member of a multiple birth. Presently, most school records do not note this information. The more we know about a child, the better we, as educators, are able to help that child learn. Although we believe that individuality should be respected and encouraged, the special effect of the "twinship bond" may present situations where twins can best express their individuality when they are most like their brother or sister. This recommendation is especially important in the case of identical twins.
- 5. Our major recommendation relates to the finding about differences in style between Twins A and B. In most cases, Twin A was selected for the special program because he or she displayed the types of motivation and performance that are most consistent with the traditioanl academic view of the achieving student. But the non-selected students (Twin Bs) oftentimes expressed the kinds of creativity and preference for open-ended and unstructured learning that are frequently valued by special programs for gifted and talented. These creative and divergent thinking skills are oftentimes "lost" when the major criterion for selec-

tion into special programs is based on strict assessment of academic performance. Indeed, in many cases, parents reported that "the wrong twin" was selected for the program. If special programs "practice what they preach", and if they truly are concerned with the development of multiple talents, then special consideration should be given to these types of abilities and learning styles, especially in the cases of twin assessment.

Implications for Further Research

urther research related to this topic should focus on those cases where both twins are included in special programs. It would seem likely that more identical twins could be observed in such a group, and it would be interesting to learn more about the effects of special programs when both twins are placed together. We also believe that long term follow-up research on Twins A and B should be conducted.

We also recommend that research be conducted on avenues of communication between the school and the home. Major decisions in either unit ripple through and may cause severe stress in one or the other. We need to devise methods by which the family and school collectively work on the educational process as a fulfilling experience for children. Often, schools show very little understanding of the family as a system. Finally, parents especially should be encouraged to offer information in the form of perceptions and observations. Parents are "natural inquirers" of their children's development. This information would be essential in screening students for selection into gifted programs because the behavior demonstrated by children at home are oftentimes unobserved at school. In the home, a profile of a child may emerge that is in contrast to his or her school image. Descriptions offered by parents for the twin study contributed significant dimensions to our knowledge of both twins and high ability children in general. Such information may lead to a modification of design in twin studies and studies of gifted children in the future.

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