

Co-operative behaviour in mentally handicapped children: an analysis of age and sex differences

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For behaviour such as generosity, consideration, and help-fulness, Social Psychologists use the word altruism or pro-social behaviour.

This has always been a major focus of attention for those concerned about the human condition.

Although dozens of studies on prosocial behaviour have been conducted there is still some disagreement regarding its definition. Among those who tried to define the term I quote Midlarsky (1968), in Derlega et al (1982), he viewed prosocial behaviour as «as subcategory of aiding, referring to helpful actions which incur some cost to the individual, but being either very little or nothing by way of gain relative to the magnitude of the investment».

Cialdini, Kenrick and Baumann in Nancy Eisenberg (1982) Stated that «by altruism (prosocial behaviour) we refer to actions taken to benefit another for reasons other than extrinsic reward», Paul Mussen and Nancy Eisenberg (1977) defined this term as follows «Prosocial behaviour refers to actions that are intended to aid or benefit another person or group of people, without the actors, anticipation of external rewards such actions often entail Some Cost, self sacrifice or risk on the part of the actor. **It includes generosity, helping, sharing, donating and participating in activities** designed to improve the general welfare. Generally most researchers were interested in the entire range of behaviour that benefit another regardless of the motivation behind the act. Motives are difficult to assess and only inferences can be made about them if a researcher is to carry out an experiment in this.

Cooperative behaviour and altruism:

Cooperative behaviour is one of the prosocial acts, that has been increasingly studied in the past years. Maxwelle and schmidt (1975) in

Derlega (1982) defined cooperation as «joint behaviour that is directed towards a goal, in which the participants have a common interest, and usually the reward is the same for both participants». Harold Cook, Sandra and Stingle (1974) viewed this behaviour as «patterns of response such as a series of choices, matching responses, turn taking, choosing alternatives, and intention or attitude (whether explicit or implicit), such as the desire to work with another for mutual benefit, rather than to gain individually as much as possible at another's expense».

Not all cooperative behaviour is purely altruistic as indeed is obvious from Maxwell and Schmidt definition. For the purpose of this experiment I have tried to create a situation in which the subjects, **each with his or her own task to carry out** can nevertheless cooperate if they choose. Such cooperation if it occurs should be regarded as altruistic.

Prosocial behaviour in mentally handicapped children:

Before going on talking about this topic definition of the term mental handicap would be of great value, since besides prosocial, mental handicap is one of the axes of this study.

The difficulty of labelling the various levels of ability and even to day different terminology from around the world is still causing confusion and though the term mental handicap is widely used today mental retardation is just one (Fred Heddell 1980) Type of mental handicap. One of the most comprehensive definition has been put forth by the American Association on Mental Deficiency and according to it: «Mental retardation refers to significantly subaverage general intellectual functioning, existing concurrently with deficits in adaptive behaviour and manifested during the developmental period» (D.L. Rosenhan, Martin E.P. Seligman, 1984). «subaverage intellectual functioning» refers to performance on individually administered intelligence tests that is minimally two standard deviations below the mean for that test.

«Adaptive behaviour» refers to the standards of personal independence and social responsibility expected for the person's age and cultural group. Finally,

«the developmental period» is the time between birth and the eighteenth birthday (Rosenhan, Seligman, 1984).

There are four levels of mental handicap, ranging from mild to profound mental handicap, and with IQs from 70 to below 20. The following study is concerned with mildly mentally handicapped. This group develops social and communication skills just like all others and at quite the same time. Their handicap is often not noticed until they are in the third or fourth grade when they begin to have academic difficulties.

Most studies on prosocial behaviour were conducted with normal children, and only a few with mentally handicapped. What would be the results if it were to carry out a further study in this area and with children?

Research has already demonstrated that mentally handicapped children can act prosocially (Tarrash, 1979; Carol 1969 Madsen and Connor 1973; Severy and Davies 1971) by sharing, helping or cooperating. However very little work has been done on the effect of sex or age. Furthermore all of it was based on the same age range, as in the studies of normal children. Thus Fincham and Barling (1978) used 9 to 10 year old subjects, Bender and Carlson (1982), used elementary aged children, Madsen and Connor (1973) used 6 to 12 year old subjects, Severy and Davies (1971) 3 to 10 yrs old, Tarrash (1976) used a wide range of age (9 to 18 years) but was interested in the effect of intelligence on altruism, and finally Karpf (1975), tested up to 15 years old subjects, but was looking at the effect of these children's mood on their altruistic behaviour.

The present study uses an age ranging from childhood to adolescence and studies another aspect of prosocial behaviour (i.e cooperation). None of the subjects is asked to cooperate or promised a reward if he does so. Likewise, the effect of sex is investigated. The first experiment which consists of a simple task is reported here.

Experiment 1

The present experiment was designed to investigate whether age and sex differences affect the occurrence of cooperation in mentally handicapped children.

Method:**Materials**

A modification of a technique devised by Morden (1982) was used in this research. The task involved two children at a time, in circumstances in which they could help one another, or ignore one another as they chose. The task utilized simple craft materials which, it was reasonable to assume, the subjects had encountered or even used previously. In any case, its use was demonstrated to them. Some of the materials had to be used in turns.

The task was that of making a shopping bag using thick brown paper, about 15 inches by 12 inches, folding over the open top several times to make a fold thick enough to support the twine handles, glueing a sheet of white paper on one side of the bag, and then decorating the white sheet with coloured shapes. This was done by pressing wooden shapes on a pad made of several layers of blotting paper soaked in poster paint, then pressing the shape on the white sheet. When this was completed, holes were punched in the folded portion of the bag for the handles.

The craft materials, a prittstick, a punch, three hand made printing pads, white sheets of paper, and brown paper bags, were placed in the middle of a table on the side opposite to that at which the subjects were seated.

Subjects:

Subjects were drawn from two Schools A and B, School A was small and catered for the younger age groups only, from 6 to 12 years old. When these children reached 12 years they generally moved on to school B, which was larger and had children throughout the full age range from 12 to 18 years. Besides this in, school B there were a few subjects of a young age (6 - 12 years). Subjects were matched on the basis of sex and age.

Parents were circulated with a request to allow their children to participate as subjects in the investigation by the school. Twelve parents from the small school gave such permission. There were six boys and six girls, with ages ranging from 6 to 12 years, with a mean of 9 years. Their I Q as assessed by

educational psychologists ranged from 60 to 76 a mean of 64. All were regarded as mildly mentally handicapped. From school «B» about fifty parents gave permission. There were twenty six boys and twenty six girls with ages ranging from 8 to 18 years and a mean of 13. Likewise they were considered mildly mentally handicapped.

The study is concerned with age and sex differences as factors in altruistic behaviour (here cooperation), and since the experiment requires subjects to work in pairs, the question arises as to the composition of the pairs.

The possible combinations were: Young boy or girl with partner matched for age and sex, or matched for age but of the opposite sex. Old boy or girl with partner matched for age and sex, or matched for age but of the opposite sex. The remaining pairings are older with younger. That is there were four groupings: Young (6-12 yrs, same sex), old (13-18 yrs, same sex), sex mixed group, and age mixed group.

It was not possible to obtain enough subjects who fulfilled the requirements. The total number of subjects was 64, 32 girls and 32 boys, in two age group from 6-12 years and from 13 to 18 years.

Procedure

The two subjects were seated side by side but with adequate space to allow them to work separately, or to collaborate if they chose. Each child worked on his/her own bag, and sheet of paper was available for each child but there was only one stick, one punch and one printing pad of each of the colours. As far as was possible the initial arrangement of the materials on the table could be said to be neutral, favouring neither child.

A user could return an item to its original position, pass it to his partner place it between self and partner, or on the other side, farthest from his/her partner. Partners could also take turns at using the items or compete with one another for them. The children's behaviour was recorded by using a camera placed on the opposite side of the table, connected to video-recorder and a monitor.

In the first session, each pair of subjects was given instructions in the task. They were told that the * **experimenter** wanted to make some pretty shopping bags to give as gifts to friends. They were shown, step by step, how to do this one complete bag was produced before them.

When the experimenter was satisfied that the children understood what was required of them, the first session was terminated and the children returned to their classrooms. The second session during which the subjects were required to carry out the task previously demonstrated, followed either in the afternoon of the same day or on the following day. This gap between demonstrations and test was deliberately contrived to increase the likelihood of a need for help, because, for example one child had forgotten an instruction or how to do some part of the task. No subject was asked to help his partner either before or during the test session, but the arrangement went some way towards creating a need for help. Similarly the requirement that each subject make a bag was intended to preclude the possibility that one child did all the work, as might have occurred if the pair were required to make a single bag.

Testing time was generally quite short. For the experiment each session took about four hours, during which several pairs were tested. In a small number of instances planned sessions were disarranged by absences due to illness or other reasons. Some mention should be made of the recording. The subjects were shown the equipment and told about its uses. That it would be used to make a record of their performance in the task making shopping bags. Some children were more curious about the uses of the camera and video recorder, and some were initially distracted by the monitor, but the effect was generally transient. The first session was not recorded.

Scoring of the data:

The video-recorded material was first scored by the experimenter. The behaviour of each subject was examined and a count was made of all occasions on which he co-operated with his partner by, for example, passing an item of

*Experimenter = me.

raft material after himself using it, or assisting his partner if the latter was in difficulty. Failure to assist or to pass materials or, competition was not counted. If assistance was offered when it was not needed, that also was not counted.

Subject's behaviour was classified under two heads, turn taking and assistance. Each subject was scored on the basis of the amount of each of these classes of behaviour. The obtained scores of the pair were averaged the rationale for this being that co-operation involves group behaviour and it is group behaviour which is important.

An independent judge, one not previously known to the experimenter was asked to view and score a sample of the 32 recordings. Nine recordings were selected at random. One of these was utilised to instruct and illustrate the methods of scoring to the independent judge.

The independent judge then viewed the eight sample records and scored them following the same procedure as the experimenter's. Judge's scores and the experimenter's were then correlated using the Pearson correlation coefficient. The obtained value was .90 which is significant at the 1% level. With this reassurance that the scoring was satisfactorily objective, the further analysis of the data was proceeded with, on the basis of the experimenter scoring alone.

Results

The mean number of scored co-operative actions for boys, and girls, young and old was analysed first along with those of the sex mixed group. Those for the age-mixed group were omitted. There is no significant difference between boys and girls. That is, between groups of boys and girls in which the pairs were of the same age and sex, $M = 2.53$ for boys, $M = 2.43$ for girls, but the mean of cooperative actions was smaller when the pairs were of the same age but different sex (the sex mixed group).

The more surprising difference was that between the older and the younger children, the latter being more co-operative $M = 1.69$ and $M = 2.79$ respectively.

A two factor analysis of variance was carried out - (age and type of pairing of these instances, boys same age, girls same age and mixed same age). This indicated no significant difference in co-operation arising from the pair type. Age is significant $F(1,18) = 4.62$ at $P < .50$. Young subjects showed more co-operative behaviour than older ones. There appears to be No interaction between the two factors, (see: table 1).

Table 1
Analysis of variance of co-operative behaviour shown by 24 pairs of subjects without the age mixed

Source	Sum of Squares	Degrees of Freedom	Mean Square	F
Mean	120.78	1	120.78	76.44
Sex (1.2.3)	2.90	2	1.45	0.92
Age (1.2)	7.30	1	7.30	4.62*
S.A	1.89	2	0.90	0.60
Error	28.44	18	1.58	

Sex = 1: boys; 2: girls; 3 boys and girls working to gether.

Age = 1: old; 2: young. * Significant at 5% level.

However, when using the whole sample which comprised 64 subjects, that is 32 pairs with the age mixed group. it was found that boys showed slightly more co-operative behaviour, $M = 2.34$, than girls, $M = 2.14$. Both of these groups co-operated better in same - sex pair than when mixed with the opposite sex. Regarding age effect, it seems that young subjects co-operated more than older ones, $M = 2.79$, $M = 1.69$ respectively.

Likewise, the age mixed group showed more co-operative behaviour than the old one, $M = 2.01$, $M = 1.69$ respectively.

A two factor analysis of variance (age and sex) on the whole sample, that is 32 pairs including the age mixed group was carried out.

Neither sex $F(2,23) = 0.16$ nor age $F(2,23) = 2.24$ were significant, this suggests that sex is not related to co-operative behaviour, but it seems that there is a tendency for young subjects to be more co-operative, though their co-operation was not significant. There is no interaction between the two factors.

Table 2
Analysis of variance of co-operative behaviour shown by 32 pairs of subjects, with the age mixed group

Source	Sum of Squares	Degrees of Freedom	Mean Square	F
Mean	138.34	1	138.34	81.72
Sex (1.2.3)	0.54	2	0.27	0.16
Age (1.2.3)	7.59	2	3.79	2.24
S.A	5.28	4	1.32	0.78
Error	38.93	23	1.69	

Sex = 1: boys; 2: girls, 3: boys and girls working together.

Age = 1: boys; 2: girls, 3: boys and girls working together.

Looking at the data of co-operative behaviour, it seems that subjects showed a better predisposition to take turns (which is a component of co-operative behaviour) in using the craft materials available, than assisting a work mate. It seems from the examination of the means that girls took slightly more turns than boys $M = 1.65$, $M = 1.55$ respectively. Boys turn taking was almost the same as that of the sex mixed group. Concerning age, older subjects took fewer turns $M = 1.36$ than younger ones $M = 1.81$.

A two factor analysis, showed that neither sex $F(2,18) = 0.03$ nor age, $F(1,18) = 1.49$, were significantly different in turn taking. There seems to be no interaction between sex and age.

Table 3
Analysis of variance of turn taking for 24 pairs of subjects
without age mixed group

Source	Sum of Squares	Degrees of Freedom	Mean Square	F
Mean	60.83	1	60.83	74.19
Sex (1.2.3)	0.05	2	0.02	0.03
Age (1.2)	1.21	1	1.21	1.43
S.A	0.35	2	0.17	0.22
Error	14.75	18	0.81	

Examining the whole sample's means of turn taking, it seems that boy's means of turn-taking ($M = 1.56$) is higher than that of girls ($M = 1.36$). Young subjects seem to have shown a higher amount of turn taking $M = 1.81$; than the older ones $M = 1.36$; or the age mixed group, $M = 1.55$.

However, although the means of turn taking showed some difference, neither sex $F(2,33) = 0.54$; nor age $F(2,33) = 0.61$ are significant as shown from the two factor analysis of variance. There is no interaction between sex and age, $F(4,23) = 0.78$.

Table 4
Analysis of variance of turn-taking in the whole sample

Source	Sum of Squares	Degrees of Freedom	Mean Square	F
Mean	73.50	1	73.50	72.78
Sex (1.2.3)	1.09	2	0.54	0.54
Age (1.2.3)	1.22	2	0.61	0.61
S.A	3.14	4	0.78	0.78
Error	23.22	23	1.00	

Furthermore, looking at the data of the cooperative behaviour displayed by both groups, young and old, the means of co-operation by age (from 6 to 18 yrs) were calculated, a graph was drawn that shows changes in co-operative behaviour through all the ages, (see figure 1)

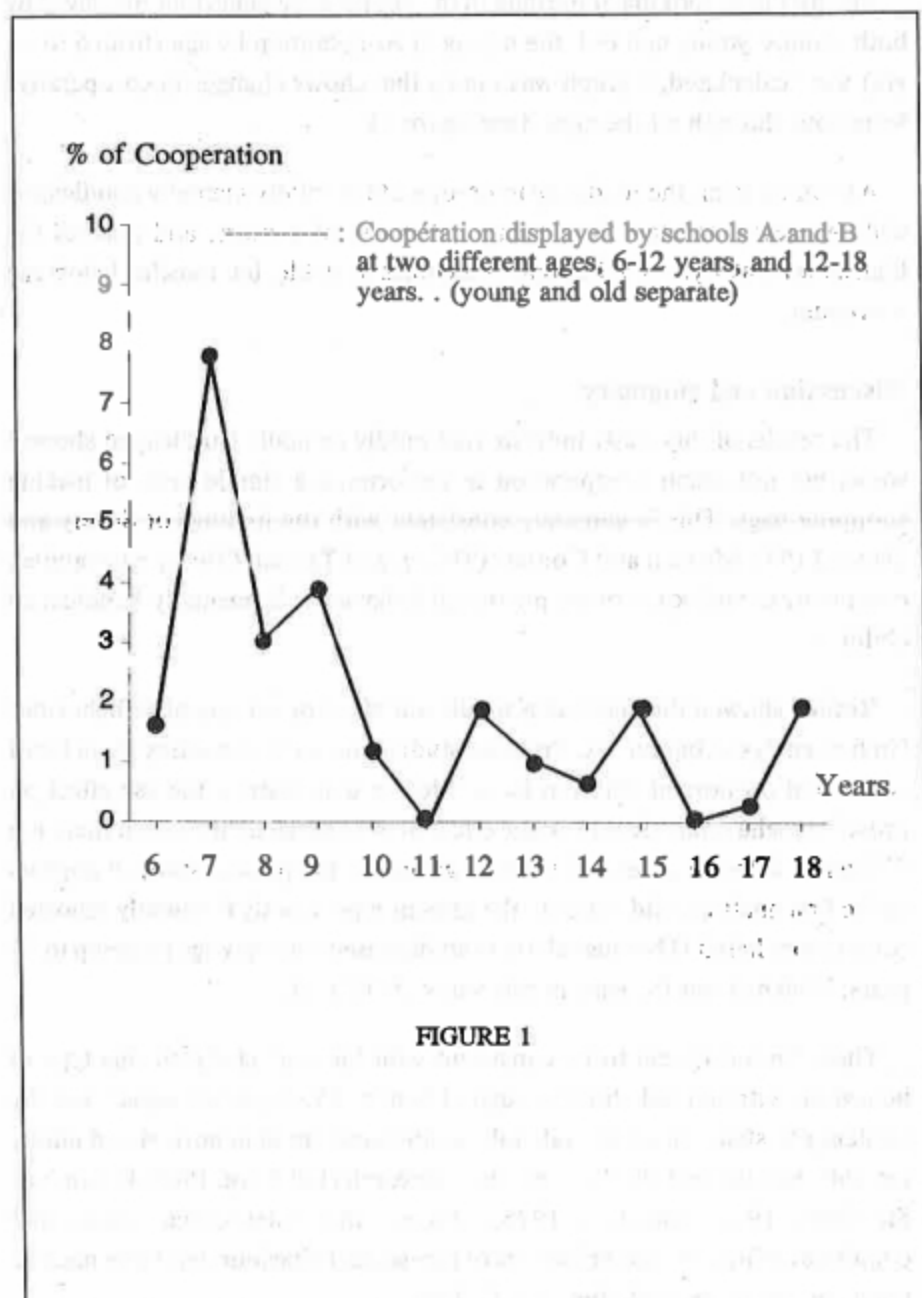
As can be seen, the tendency to co-operate in mildly mentally handicapped children seems to start developing at the age of 6 years, and reaches the highest level at 7 years. After that it becomes unstable, but remains below the maximum.

Discussion and summary

The results of this study indicate that mildly mentally handicapped showed some, but not much co-operation in performing a simple task, of making shopping bags. This is generally consistent with the findings of Severy and Davies (1971) Madsen and Connor (1973), and Tarrash (1976) who studied co-operation and some other pro-social behaviours in mentally handicapped children.

Results showed that age had a significant effect on co-operative behaviour (in first analysis) but no sex. Previous studies (no need in quoting them here) conducted on normal children have failed to demonstrate the sex effect on prosocial behaviour. As for the age effect on pro-social behaviour, if there is a difference between older and younger groups in the present study, it appears in the first analysis, and is not in the direction previously frequently reported (older more helpful) because all these studies used a narrow age range up to 12 years, Which is not the case in this study (6-18 yrs).

These findings seem to be consistent with the only study on this type of behaviour with normal children (ugurel Semin, 1952), this suggests that the tendency to share, or co-operate follows the same trend in normal and mildly mentally handicapped children. Previous research (kohlberg, 1969; Rubins ans Shneider, 1973; Rushton, 1975) showed that intelligence scores and cognitive ability are poor predictors of pro-social behaviour, but there must be great caution in generalizing such findings.



Results on co-operative behaviour in the whole sample, showed that sex had no significant effect on the child's prosocial behaviour. Likewise, but contrary, to the experimenter's expectations, age did not affect significantly the child's prosocial behaviour (co-operation). Such results concerning the age effect could be due to the fact that the age mixed group showed less co-operation, if not at all. When this group's data was added and analysed along with young and old groups it seems to have affected the age effect by dropping it to non significance. In addition although turn taking seemed to be the most shown by subjects, when data were treated statistically either in the whole sample or just part of it, results concerning age and sex were not significant.

To summarise to this point, it could be said that the only significant findings are in the first analysis which showed that age but not sex, had a significant effect on subject's co-operative behaviour in making the shopping bags. The findings concerning the age effect showed that young subjects (6-12 yrs) were more co-operative than older ones (13-18 yrs). A part from this, age and sex effects did not reach significance despite the difference in the means concerning the age effect and showing the young more co-operative than the old.

(This experiment was followed by further research).

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