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AUTHOR Lange, Anna-Lena
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ABSTRACT

This longitudinal study investigated hereditary and environmental influences on life situation, self-reported health, and coping ability at mid-life in relation to background factors collected during adolescence. A nationally representative Swedish sample comprised of monozygotic (MZ) and dizygotic (DZ) twins; a control group of singletons was assessed when subjects were 16 years of age and again when they were in their mid-30s. A questionnaire addressing civil status, children, housing, education, occupation, economic situation, frequency of family contacts, family environment, and coping ability was completed by 319 twins and 322 singletons. Results showed sex differences, similar to findings during adolescent evaluation. Males reported higher occupational status and less frequent parental contact than females. DZ male twin adults had the most positive economic situation; MZ female twin adults reported the least positive. MZ male and DZ same-sex male twin adults had higher coping ability scores than other subjects. Teacher ratings of school adjustment during adolescence were positively related to coping ability at mid-life, with a stronger relationship for males than females. MZ twin adults showed a higher within pair concordance for coping ability than did DZ twin adults, suggesting hereditary influence on coping ability. MZ twins perceived their school environment during adolescence more similarly within pairs than did DZ twin pairs. MZ male twins perceived their family environment during adolescence more similarly within pairs than did DZ same-sex male twins. However, female MZ twins perceived their family environment during adolescence less similarly within pairs compared to DZ same-sex female twins. (KDFB)

Stockholm Institute of Education
Department of Special Education
Anna-Lena Lange
Anna-Lena.Lange@lhs.se
46 8 737 55 92

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Life situation and Coping ability

A follow-up of a longitudinal Swedish Twin study from adolescence to mid-life

Introduction

This study is based upon a Swedish longitudinal study which started in the middle of the sixties. It was called the SLU-study (Skolöverstyrelsens och Lärarhögskolans Utvecklingsstudie). Between 1964 and 1971 a nationally representative sample of monozygotic (MZ) and dizygotic (DZ) twins and a control group of singletons were followed from grade 3 at 10 years of age to grade 9 at 16 years of age in the Swedish compulsery school. Originally 323 twin pairs, MZ and DZ, as well as 1193 controls were included in the sample. Among the DZ twins there were both same sex and opposite sex pairs.

The main purpose was then to study physical and mental growth during puberty as well as hereditary and environmental influences on these growth processes. Several kinds of information were collected, such as physical data, intelligence test, ratings by teachers concerning school adjustment, socio-economic background data.

Results from the original SLU-study showed substantial sex differences. The twin girls had on average lower ability test results compared to the controls, while this was not the case for the boys. This inferiority of twin girls in comparison to the controls was also found concerning physical development. Twin girls tended to be smaller and weigh less during puberty, while no such differences were found for boys (Fischbein, 1979).

A follow-up study

After 20 years, when the SLU-participants were in their mid-thirties, a follow-up study has been made of this sample. The main purpose of this new study is to investigate hereditary and environmental influences on life situation, self reported health and coping ability at mid-life in relation to background factors collected during adolescence. The purpose was also to study if sex differences mentioned above during adolescence remain at the age of 35.

Address
Box 473 08
S-100 74 Stockholm
Location
Trekantsvägen 3
Phone
08/737 55 00 vx
Fax
08/737 96 30

Method

A two step design has been applied. The main result of the first step of this follow-up study showed that more women than men were positive to participate in a new study (Lange & Fischbein, 1992). This is in accordance with other longitudinal studies (Furu, 1985).

Next step of the follow-up consisted of a questionnaire. This was sent to a representative sample among those who agreed to participate in a new study. The aim was to include 600 individuals, half of them women and half of them men. For each sex there should be 50 per cent twins and 50 per cent controls. This study comprised 319 twins and 322 controls (Figure 1). More women than men participated in the questionnaire study, which was in accordance with the first follow-up mentioned above.

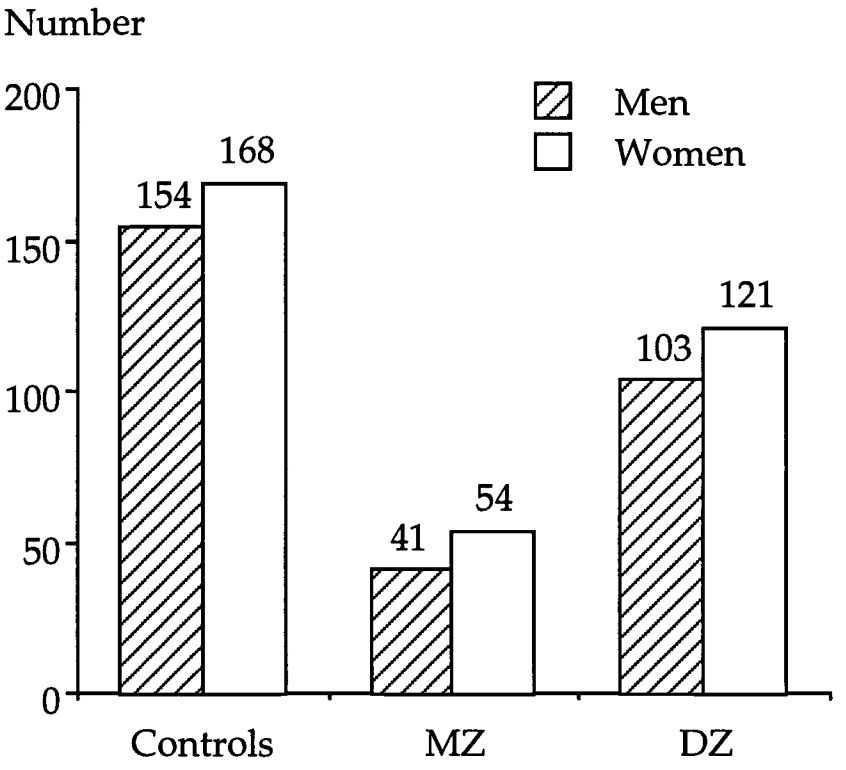

Figure 1. *Number of participants in the follow-up*

To make within pair comparisons both twins in a pair had to answer the questionnaire. The number of complete twin pairs is shown in Figure 2. More female than male same sex twin pairs participated in the follow-up. The opposite sex pairs were in majority.

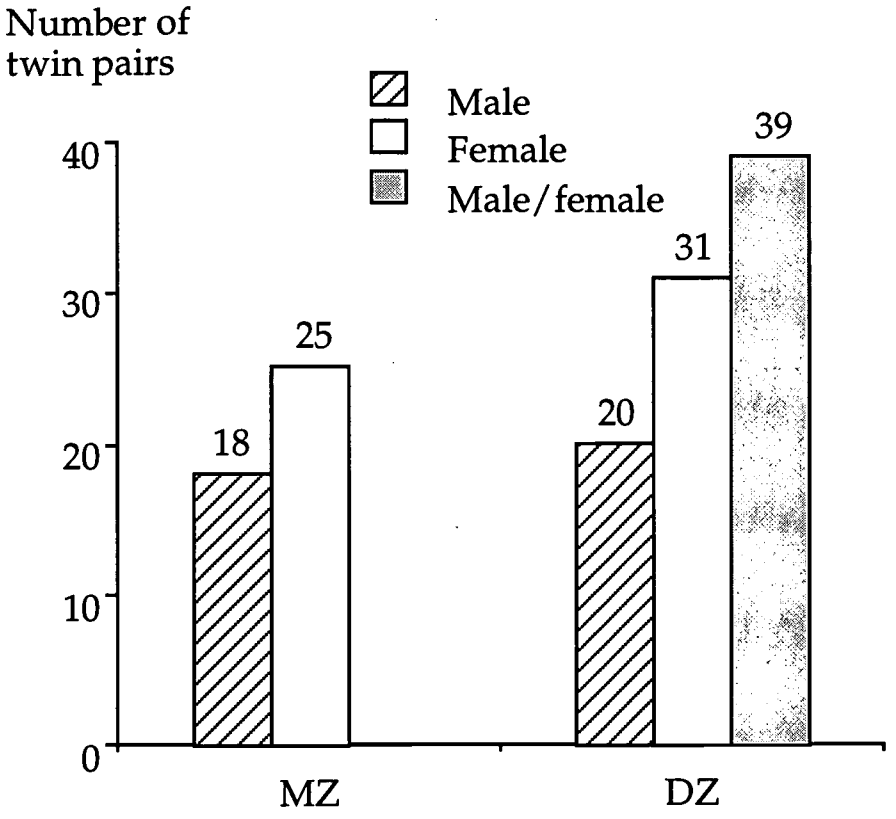

Figure 2. *Number of complete twin pairs in the follow-up by sex and zygocity*

The questionnaire dealt with condition of living such as civil status, children, housing, education and present occupation. There were also questions about economy, the frequency of contact (with twin sister/brother, parents, friends and relatives) and questions regarding earlier family and school environment (Family Environment Scale, Moos & Moos, 1981). The participants reported their present health and coping ability (Antonovsky, 1987; Furu, 1991).

Group comparisons between men and women for both twins and controls have been focused. To illuminate hereditary factors comparisons within MZ and DZ same sex as well as opposite sex twin pairs have been studied. Coping ability in the age of 35 has been related to data collected during adolescence.

Results

The group comparisons showed some *sex differences.* The male participants reported higher *occupational status* compared to the females (Fischbein et. al, in press). The MZ male twins showed on average the most *positive economic* situation, while the MZ female twins reported the opposite. The women stated more *frequent contact* with their parents than the men did. The contact with twin sister/brother was more frequent within female than within male pairs. Most of the participants reported that they had a *good health.* However, the men seemed to have a little better health compared to women.

Coping ability scale for males and females showed that the MZ male and the DZ same sex male twins had a *higher mean value* compared to other participants in the study. Teacher ratings of school adjustments at adolescence have been related to average coping ability at mid-life. The results showed that generally the relationship between *teacher ratings* at adolescence and *coping ability* at mid-life is *stronger* for males than for females (Figure 3).

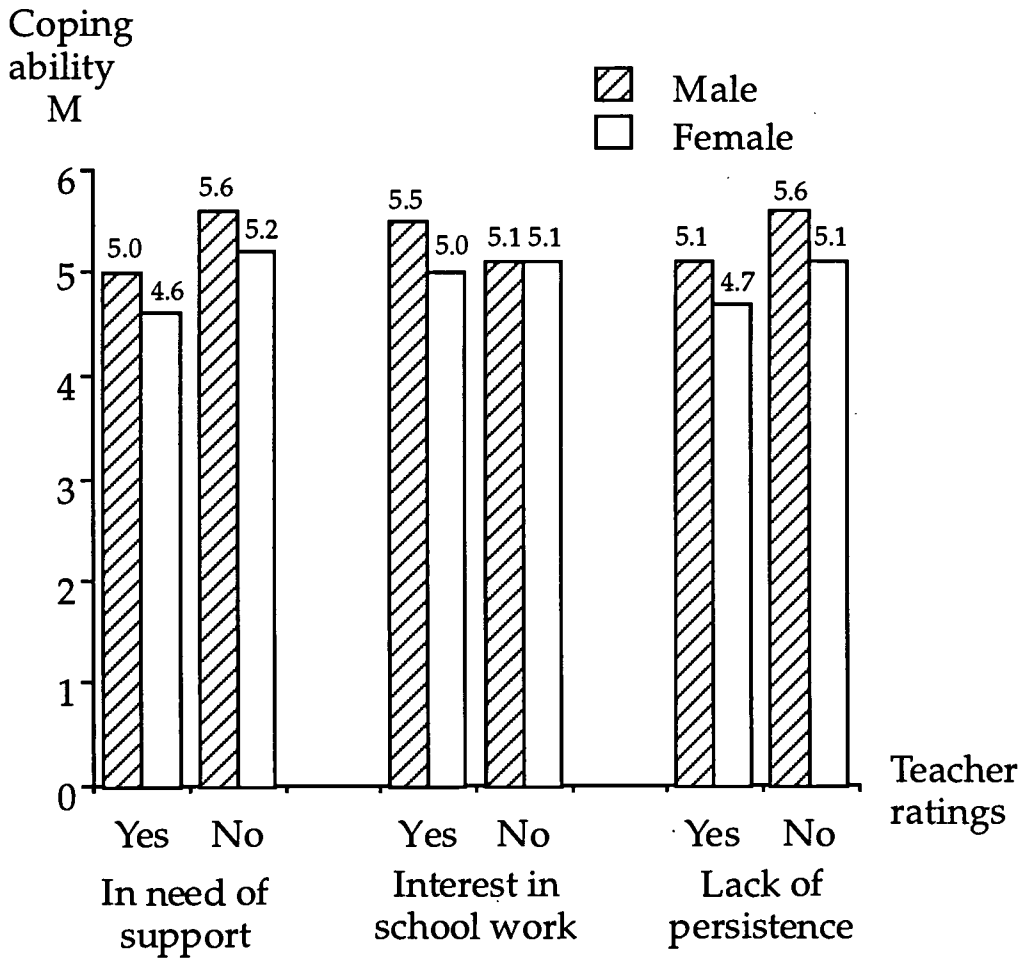

Figure 3. *Mean coping ability for male and female twins in relation to teacher ratings of school adjustments*

Within pair concordance for coping ability is shown in figure 4. MZ twins showed a higher intrapair correlation than DZ twins. This indicates that some *hereditary factors* are operating concerning coping ability.

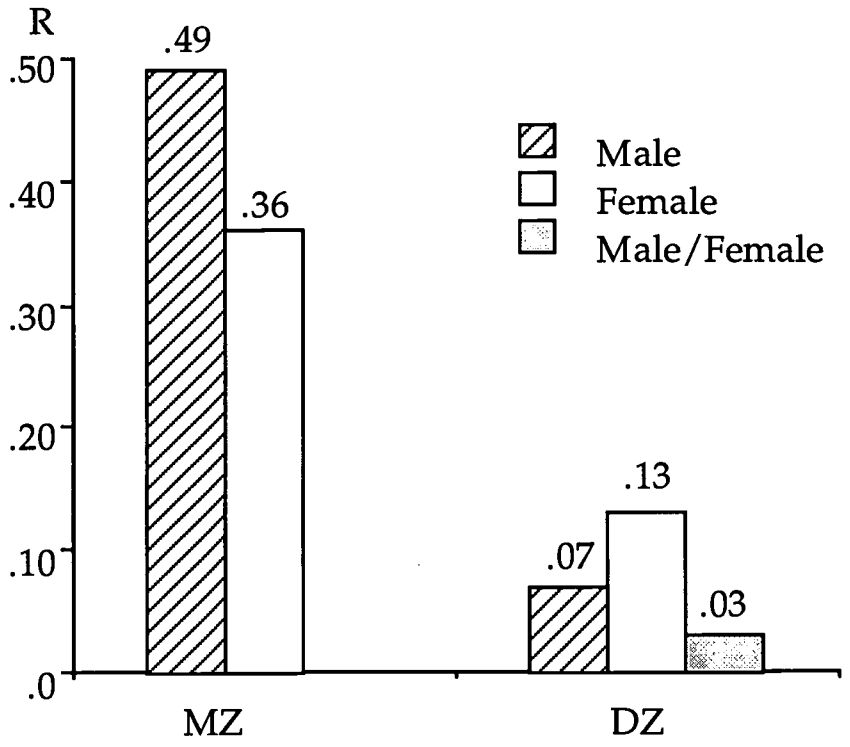

Figure 4. *Intraclass correlation in coping ability for MZ and DZ twins*

The twins' opinion of their family environment during adolescence showed at the age of 35 within pair more similarity for the MZ male twins compared to the DZ same sex male twin pairs. The female MZ twins perceived their family environment during adolescence less similar within pair compared to DZ same sex female twins (Figure 5).

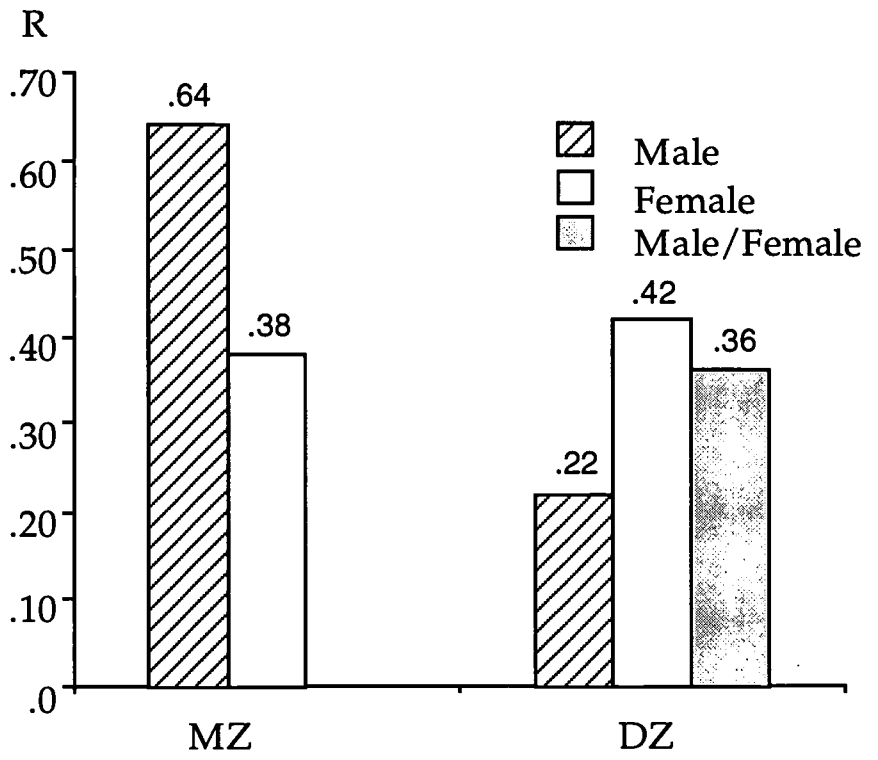

Figure 5. *Intraclass correlation for twins concerning perceived family environment during adolescence*

Intraclass correlation showed that MZ twins within pair had perceived their school environment more similar compared to DZ twin pairs (Figure 6).

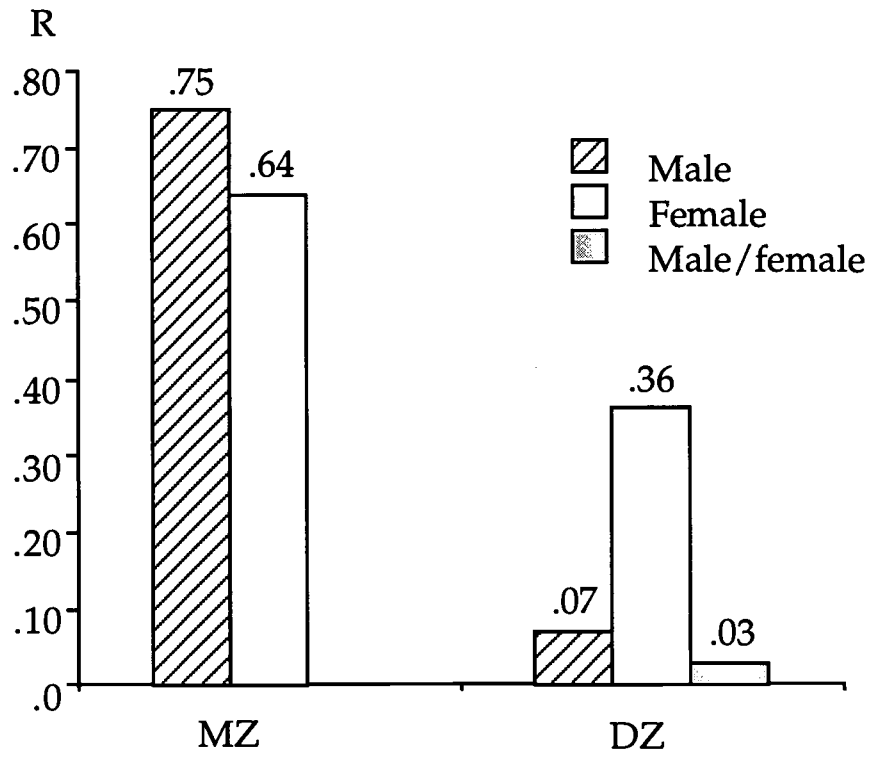

Figure 6. *Intraclass correlation for twins concerning perceived school environment during adolescence*

Conclusion

Results from the original SLU-study showed sex differences at adolescence and the follow-up study at the age of 35 also indicates sex differences. One explanation for the differences could be that there was a higher mortality at birth for the twin boys, thus an effect of selective survivial.

The ability to cope with problems at mid-life seem to be a little higher for the male twin group compared to the females. The relation between teacher ratings of school adjustment at adolescence and coping ability at mid-life were stronger for males than for females. It was more evident for the twins but can also be seen for the controls.

Concerning perceived family and school environment during adolescence hereditary factors seem to influence males to a greater extent compared to females. Intraclass correlations indicate different treatment at home and at school.

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Signature: Anna-Lena Lange
Printed Name/Position/Title: Anna-Lena Lange doctoral student
Organization/Address:
Telephone: +46 8 73755 92
FAX: +46 8 737 96 30
E-Mail Address: Anna-Lena.Lange@lhs.se
Date: 23/10 -96

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University of Illinois
at Urbana-Champaign

ERIC
Clearinghouse on Elementary and Early Childhood Education
805 West Pennsylvania Avenue
Urbana, IL 61801-4897

217 333-1386
217 333-3767 *fax*
800-583-4135
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