

Gender Differences in Tested and Self-Rated Nonverbal Sensitivity

Bernadette Gerada Aloisio, Department of Curriculum Management, Education Division, Malta
Hans G. Klinzing, University of Tuebingen, University of Stuttgart, Germany

Research evidence suggests that understanding socially agreed meanings for nonverbal cues is one of the key competencies for effective communication and teaching (Rosenthal, Hall, DiMatteo, Rogers and Archer 1979, Knapp and Hall 2002). For example, research on relationships between nonverbal judgment ability and clinical ability, excellence in teaching, or patients' satisfaction, as well as psychosocial correlates of receiving ability suggest the desirability of nonverbal sensitivity among professionals (Rosenthal et al. 1979, DiMatteo, Taranta, Friedman and Prince, 1980, DiMatteo, Hays and Prince 1986, Hall 1998, see Knapp and Hall 2002).

In studies examining traits associated with accuracy in decoding nonverbal signs and signals, one of the most consistent findings is the tendency for women to be more effective decoders than men (Hall 1998). In about 80% of about three dozen earlier studies and studies on 133 samples using the PONS-test to investigate *nonverbal sensitivity as a main effect of gender* (Rosenthal et al. 1979), it was shown that females tend to be more accurate at nonverbal decoding than men (M ES = 0.42). Knapp and Hall (2002, 97) judged this tendency as follows:

"We reviewed a large number of different correlates of accuracy in decoding and encoding nonverbal cues, among which one of the most consistent is the tendency for females to be more effective communicators as both decoders and encoders."

As Knapp and Hall (2002, 83) stated, these findings hold up, generally, whether the subjects are from the USA or not. However, one German study using the PONS-test (reported in Rosenthal et al. 1979, see below), found a tendency of higher nonverbal sensitivity for men (ES = 0.21s). This finding indicates that gender differences might be cultural dependent.

To examine this assumption this PONS-test was administered in six field and five training studies, conducted with students

of education and student teachers participating in traditional seminars and lectures as well as in behavioral training courses at the University of Tuebingen and the University of Stuttgart (Germany), and with Methodist Theologians (N=642). As reported in a paper presented at the annual conference of the ATEE (Gerada and Klinzing 2004) almost no differences (M ES = -0.015) could be observed in *nonverbal decoding skill*, as measured with the Profile of Nonverbal Sensitivity (PONS) and a test on Decoding Emotions from Facial Expressions (TDEFE: M ES=0.18).

The question of gender differences in Nonverbal Sensitivity was followed up in 10 additional studies in Germany and Malta. 64 inservice teachers of Italian (Malta), 24 Psychotherapists, and 580 students of education and students teachers in Germany were tested, again using the PONS-test and (in some studies) a test on Decoding emotions from Facial Expressions (TDEFE). To investigate gender differences in self-ratings of nonverbal perceptiveness, a questionnaire (Rosenthal et al. 1979) was also administered in some of the studies. The following section provides an overview on the results obtained so far in the ongoing project.

Subjects

Altogether, 1321 subjects participated in the project until now. 107 subjects from various contexts outside the university (Psychotherapists, Methodist Theologians, and Inservice Teachers of Italian), and 1214 University Students (Student Teachers and Students of Education) signed up to participate in the workshops, seminars, lectures, and training courses, in which the data collections took place, on an elective basis. Figure 1.1, 1.2, 1.3, and 2 give a profile of the participants of all studies based on age, gender, average number of semesters completed, and majors studied at the university or college. 0).

Figure 1.1: Characteristics of the Participants of Three Studies (Studies 1.1 - 1.3): Gender, Age, and Majors (2)

<p>Study 1.1.1 Workshop: "Training of Nonverbal Competencies" with Psychotherapists, Warstein 04 (9m; 15f, age (N=24): M=48.71, s=8.45 years); 3 Psychiatrists, 18 Psychotherapists, 2 social workers, 1 no information (1 female participant had to leave the workshop due to unforeseen circumstances).</p> <p>Study 1.1.2 Workshop at a Methodist College on "Nonverbal Decoding Abilities" (Reutlingen 04) with 16 Students (Methodist Theology); 10 Females (age: M=26.8, s=5.98 years; semesters completed: M=5.12, N=9; 1 no information); 6 Males (age: M=32.76, s=7.20 years; semesters completed: M=6.0, s=3.35); + 3 College Teachers (2 females, 1 male; age: M=43.34, s=7.51 years).</p> <p>Study 1.1.3 Workshop: "Improving Social and Teaching Competence by Enhancing Nonverbal En- and Decoding Ability" with 64 Inservice Teachers of Italian in Malta. 38 females (age M=32.79; s=9.65 years); 26 males (age: M=43.31; s=11.82 years).</p>

Figure 1.2: Characteristics of University Students Participating in Traditional Seminars and Lectures at the University of Tuebingen and the University of Stuttgart (Studies 2.1.1 - 2.1.9/10): Gender, Age, and Majors.

<p>Study 1.2.1: Traditional Seminar: "Nonverbal Aspects of Human Communication" (University of Stuttgart 03/04, Posttest). 37f/ 22m university students (age: female 22.6 years; male: 26.32 years; total: M = 24.03 years).</p> <p>Majors MA/Diploma Pedagogy + Sociology, Philology, Art History, Philosophy, Linguistics, Sport, Music, Politics Biology, or Computer Sciences; 36</p> <p>Student Teachers (Secondary) Philol-ogy Mathm./Science Mathm./Science Philol-ogy - 0 6</p>
<p>Study 1.2.2: Traditional Seminar: "Classroom Management" (University of Tuebingen 03/04). N=44 university students; age: M = 23.9; s= 3.15 (28f, age: M= 23.3, s=3.2 years; 16m; age: 25.3, s=2.7 years).</p> <p>Majors MA/Diploma Pedagogy + Sociology, Philology, Art History, Philosophy, Linguistics, Sport, Music, Politics Biology, or Computer Sciences; 6 1 No information: 5</p> <p>Student Teachers (Secondary) Philol-ogy Mathm./Science Mathm./Science Philol-ogy - 5 4 14</p>
<p>Study 1.2.3: Traditional Seminar: "Models of Teaching" (University of Tuebingen: 04, Posttest) N=83 university students (55f/ 28m; age: M=24.12; s=3.70 years; semesters completed: M=6.15; s=1.77).</p> <p>Majors MA/Diploma Pedagogy + Sociology, Philology, Art History, Philosophy, Linguistics, Sport, Music, Politics Biology, or Computer Sciences; 9 No information: 1</p> <p>Student Teachers (Secondary) Philol-ogy Mathm./Science Mathm./Science Philol-ogy - 47 15 11</p>
<p>Study 1.2.4: Traditional Lecture: "Nonverbal Aspects of Human Communication II" (University of Tuebingen 03/04, Posttest). N= 113 university students, age: M=22.5; s=4.33 years; number of semesters completed: 1.67; s= 1.36; No information: 3 (96f, age: M = 22.2, s= 4.19; number of semesters completed: 1.69, s = 1.4; no information: 2) (17m, age: M = 24.23; s = 4.78 years; number of semesters completed: 1.67; s= 1.36; no information: 1).</p> <p>Majors MA/Diploma Pedagogy + Sociology, Philology, Art History, Philosophy, Linguistics, Sport, Music, Politics Biology, or Computer Sciences; 107</p> <p>Student Teachers (Secondary) Philol-ogy Mathm./Science Mathm./Science Philol-ogy - 6 0 0</p>
<p>Study 1.2.5: Traditional Lecture: "Nonverbal Aspects of Human Communication II" (University of Tuebingen 04, Pretest) N=126 university students, age: M=22.96; s=4.04 years; no information: 2; number of semesters completed: M = 2.85; s= 1.58; no information: 32) Female, N=100 (age: M=22.96; s=4.43 years; no information: 2; number of semesters completed: M = 2.62; s = 1.30; no information: 35); Male: N=26 (age: M=22.96, s = 2.01 years; number of semesters completed: M= 3.63; s = 2.01; no information: 7).</p> <p>Majors MA/Diploma Pedagogy + Sociology, Philology, Art History, Philosophy, Linguistics, Sport, Music, Politics Biology, Computer Sciences or Theology; 96 No information: 4</p> <p>Student Teachers (Secondary) Philol-ogy Mathm./Science Mathm./Science Sport+Philol-ogy 13 1 1 5 No information: 1</p>

<p>Study 1.2.6: Traditional Lecture: "Methods and Approaches to Improve Social Competence" (University of Tuebingen 04/05, Pretest) university students N=78. Student Teachers: 52: 19 males; 33 females; age: M=23.02; s=1.81 years; semester completed: M=4.71; s=1.9, no information: 1. Students of Education (MA, Diploma): N=26, 6 males, 20 females; age: M=24.03, s=5.64 years; semester completed: M=2.22, s=1.48, no information: 3.</p> <p>Majors: MA/Diploma Pedagogy + Sociology, Philology, Criminology, or Industrial Management 24</p> <p>Student Teachers (Secondary) Philol-ogy Mathm./Science Mathm./Science+Philol-ogy - 28 13 2 7 2</p> <p>No information: 2</p>
<p>Study 1.2.7: Traditional Seminar: "Nonverbal Aspects of Human Communication" (University of Tuebingen 04/05, Posttest) university students. 46 females: age M=24.78, s=5.12 years; semesters completed M=5.60; s=3.21. 11 males: age M=24.64; s=5.35; semesters completed: M=4.36; s=1.43. (Data from 2 female participants are not assessed)</p> <p>Majors MA/Diploma Pedagogy + Psychology, Computer Sciences 17</p> <p>Student Teachers (Secondary) Philol-ogy Mathm./Science Mathm./Science+Philol-ogy Sport+Philol-ogy Sport+Science 21 5 11 2 1</p>
<p>Study 1.2.8: Traditional Seminar "Models of Teaching" (University of Stuttgart 05, Pretest) N=110 university students (age: M=24.00, s=3.17 years; semesters completed: 6.55 (s=2.41). 51 females (age: M=23.25, s=2.31 years; semester completed: M=7.20, s=2.68). Magister (without 1 PONS-test repetitioners): 25 females (age: M=24.72, s=4.98 years; semesters completed: M=5.24, s=1.64). 8 Males (age: M=26.50, s=2.88 years; semester completed: M=5.88, s=1.89). Student Teachers (without 4 PONS-test repetitioners): 46 females (age: M=23.22, s=2.37 years; semesters completed: M=7.30, s=2.70). 26 males (age: M=24.0, s=1.85; years; semester completed: M=6.77, s=2.16).</p> <p>Majors MA/Diploma Pedagogy + Sociology, Philology, Art History, Philosophy, Linguistics, Sport, or Music 34</p> <p>Student Teachers (Secondary) Philol-ogy Mathm./Science Mathm./Science+Philol-ogy Computer Sciences Sport+Philol-ogy or Science Music+Philol-ogy 40 5 8 5 6 12</p>
<p>Study 1.2.9/1.2.10 Traditional Seminar "Effective Teaching Practices", plus Traditional Lecture "Observation and Experiment in Educational Research" (U of Tuebingen 05, Pretest). Because of the few male students in the lecture the data of the seminar and the lecture were combined. N=191 Students of Education and Student Teachers (age: M = 23.91; s=4.28 years; semester completed: M=5.15, s=3.10; no information: 4). Females: N=138 (age: M= 23.82; s=3.94 years; semesters completed: M=5.08; s= 3.25; no information: 3). Males: N= 53 (age: M= 24.38, s=3.31 years; semester completed: M=5.53; s=2.77; no information: 3).</p> <p>Majors MA/Diploma Pedagogy + Sociology, Philology, Art History, Philosophy, Linguistics, Sport, Music, Politics Biology, Computer Sciences or Theology; 74 No information: 1</p> <p>Student Teachers (Secondary) Philol-ogy Mathm./Science Mathm./Science+Philol-ogy Sport+Philol-ogy Sport+Mathm./Science 61 11 23 14 7</p>

Figure 1.3: Characteristics of the Participants of Experimental Study 1 - 4: Gender, Age, Majors and Average Number of Semester Completed at the University.

<p>Study 1.3.1: University Students (Febr. 2003) Experimental Group: 9f, 10m (age: M = 25.32 years; number of semesters completed: M = 5.05)</p> <p>Majors Diploma or MA- Peda- gogy (Dipl.) Sociology or Economy or Rhethoric or Music + Pedagogy (MA)</p> <p>Student Teachers (Secondary) Philol-ogy Mathm./Science Mathm./Science Sport/Philol-ogy 7 3 6 1 0 2</p>
<p>Control Group: 11f, 8m University Students (age: M = 26.16 years; number of semesters completed: M = 4.86)</p> <p>7 1 6 1 3 1</p>
<p>Study 1.3.2: University Students (Febr. 2004). Experimental Group (N=19; age: M=26.05; s=7.58 years); 14 females (age: M=26.90, s=8.67); 5 males (age: 23.6, s=1.95 years).</p> <p>Majors Diploma or MA- Peda- gogy (Dipl.) Sociology or Economy or Rhethoric or Music + Pedagogy (MA)</p> <p>Student Teachers (Secondary) Philol-ogy Mathm./Science Mathm./Science Medical 3 3 8 0 4 1</p>

Control Group (N=15; age: M=24.80, s=3.72). 11 females (24.36, s=3.04); 4 males (age: M=26.00, s=5.60 years).					
3	0	8	2	1	1
Study 1.3.3: University Students (Oct. 2004). Experimental Group: N=32 (21 female; 11 male; age: M=23.5, s=3.28 years; semester completed: M=5.94, s=3.13). Four of the participants were PONS-test repeititioners, their data were not included into the data analysis.					
Majors Diploma or MA- Peda- gogy (Dipl.)		Student Teachers (Secondary) Philol- ogy			
Sociology, Economy, Rhethoric Art History, Culture Science, + Pedagogy (MA)		Mathm./ Science	Mathm./ Science Philol- ogy	Sports/ Philol- ogy	
5	6	15	0	2	4
Comparison Group: N=29 (22 females, 7 males; age: M=22.55, s=1.24; semester completed: M=5.07, s=1.93). Three of the participants were PONS-test repeititioners, their data were not included into the data analysis.					
1	7	11	2	4	4
Study 1.3.4: University Students (Febr. 2005)* Experimental Group: N = 20f/6m; age: M=25.04, s=5.81; semester completed: M=4.42; s=2.85 (2 of the female participants were PONS-test repeititioners, their data were not included into the data analysis).					
Majors Diploma or MA Peda- gogy (Dipl.)		Student Teachers (Secondary) Philol- ogy			
Sociology or Economy or Rhethoric or Music + Pedagogy (MA)		Mathm./ Science	Mathm./ Science+ Philol- ogy	Sport+ Philol- ogy or Science	
12		11	1	2	0
Control Group: N = 17f/8m; age: M=24.96, s=5.59; semester completed: M=4.64, s=2.51 (2 of the female and one of the male participants were PONS-test repeititioners, their data were not included into the analysis of the data)					
8		10	1	4	2
(*data of additional 4 participants were unclear: their data were not included in the study)					
Study 1.3.5: University Students (March 2005) Experimental Group: N=15; 9f, 6m; age: M=23.47, s=2.23; semester completed: 4.4, s=3.0).					
Majors Diploma or MA- Peda- gogy (Dipl.)		Student Teachers (Secondary) Philol- ogy			
Sociology, Economy, Rhethoric or Music, The- ology + Pedagogy (MA)		Mathm./ Science	Mathm./ Science Philol- ogy	Medical	
4	4	4	0	2	0
No Information: 1					
Comparison Group: N=14; 8f, 6m; age: M=22.86; s=1.96; semesters completed: M=4.36, s=2.7) ; One of the participants was a PONS-test repeititioner, her data were not included into the data analysis).					
3	3	4	3	1	0

Figure 2: Characteristics of the Participants in Six Experimental Studies (Studies 2.1 – 1.4) to Assess the Effectiveness of a Program to Develop the Ability to Decode Emotions from Facial Expressions. Gender, Age, and Majors.

Study 2.1, see Figure 1.1 (Study 1.1.3)						
Study 2.2 University Students						
	Gender male (m) female (f)	Age	Majors Student Teachers: Majors			
	M		Philol- ogy	Philol- Science	Mathm./ Mathm./ Science Philol- ology	Sport Mathm./ or Philology
Experi- mental Group Control Group	4f 3m 4f 4m	24.5 --* 29.5 -- --	3	2	2	1
Study 2.3 University Students						
	Gender male (m) female (f)	Age	Majors Student Teachers: Majors			
	M		Philol- ogy	Mathm./ Science	Mathm./ Science Philol- ology	Sport Mathm./ or Philology
Experi- mental Group Control Group	9f 7m 9f -* 5m -*	24.2 --* 25.9 -- --	6	3	5	2
			7	4	3	1

Study 2.4 University Students									
	Gender male (m)/ female (f)	Age	Number of Semesters	Majors: Pedagogy plus Socio- Arts Philol- logy History ogy/ Linguistics			History/ Politics	Engineer- ing/Com- puter Science.	Sport
	M	M	M						
Experi- mental Group Control Group 1	11m 18f 19f 1m	23.7 23.1	3.8 3.9	9 7	3 2	8 9	2 3	6 7	1 2
Study 2.5 University Students									
	Gender male (m)/ female(f)	Age	Number of Semesters	Majors: Peda- gogy (only)	Pedagogy plus	Socio- logy	Philol ogy/Theology		
	M	M	M						
Jigsaw (Experi- mental Group) Individual Work (Compar- ison Gr.)	11f 4m 12f 4m	22.7 22.4	4.1 4.2	12 13			1 -	2 3	
Study 2.6 (see Figure 1.3, Study 1.3.1) *not assessed									

Data collection

To test *Nonverbal Sensitivity* three tests were used alone or together in the studies: the *Profile of Nonverbal Sensitivity (PONS) (1)*, the *Test on Decoding Emotions from Facial Expressions (TDFE) (2)*, and the *Self-rating form of Nonverbal Sensitivity (3)*.

1. The *Profile of Nonverbal Sensitivity (PONS)*, developed by Rosenthal and associates (1979) utilizes a 47-minute black and white film and sound track composed of 220 numbered two-second auditory and/or visual segments. For each segment, test takers have to select from two descriptions of everyday life situations the one which best corresponds to the segment shown. Reliabilities and indications for validity of this instrument are given by Rosenthal et al. (1979). The PONS-test was administered in the field studies at the beginning or end of various seminars and lectures. In the training studies it was administered at the time of the posttest for the experimental groups and the control or comparison groups. The full-PONS data and data regarding sensitivity to specific nonverbal channels were analyzed (marginal, combined scores of the PONS-test: "voice40", "body60", and "face60"; see Rosenthal et al., 1979).
2. The test on *Accuracy of Decoding Emotions from Facial Expressions (TDFE)* is based on 54 portraits of women and men (six by nine cm photographs of faces from Ekman and Friesen 1975). 44 of the portraits show primary affects, seven show blends of affects, and three portray blank faces. For the administration of the test, all participants were randomly assigned to groups of two. Each trainee showed his/her partner the portraits in a random order, first for one second (intuitive judgment), then again for another five seconds (analytical judgment). Reliabilities and indications for treatment validity of this instrument are given by Klinzing (1998, 2003). The Test on Decoding Emotions from Facial Expressions (TDFE) was administered as a posttest in experimental and control groups in five studies on the effectiveness of courses for familiarizing trainees with techniques in analyzing facial expressions of emotions.

3. Self-rating of Nonverbal Sensitivity. Subjects were asked to rate their own warmth and their ability to understand other people, social situations, tones of voice, body movements, and facial expressions on a six-item questionnaire (nine-point scales), developed by Rosenthal and associates (1979). The original questionnaire was translated into German. With the re-translation of the German version into English, the validity of the German translation was assured.

All data sources used in the studies possess sufficient validity and reliability.

Research questions

The research questions to be addressed in this paper are:

1. whether there are significant ($p < 0.05$) gender differences in Nonverbal Sensitivity (PONS);
2. whether there are significant ($p < 0.05$) gender differences in the accuracy of decoding emotions from facial expressions (TDEFE);
3. whether there are significant ($p < 0.05$) gender differences when subjects take the PONS-test twice (training effect);
4. whether there are significant ($p < 0.05$) gender differences in self-rating of nonverbal/interpersonal sensitivity.

Results

In three field studies conducted in workshops on the Improvement of Nonverbal Sensitivity outside the University, PONS test data were collected with Psychotherapists, Methodist Theologians, and Inservice Teachers of Italian in Malta.

1.1 Gender Differences in Groups of Psychotherapists, Theologians, and Inservice Teachers of Italian (Malta) Using the Profile of Nonverbal Sensitivity (PONS)

In Table 1.1.1 the results for decoding skills of Psychotherapists, in Table 1.1.2 for Methodist Theologians, and in Table 1.1.3 of Inservice Teachers of Italian in Malta are summarized

Table 1.1.1: Differences between Female and Male Psychotherapists Using the PONS-Test. Means (M), Standard Deviations (s), t-Tests, and Effect Sizes (ES).

Study 1.1 Workshop on Nonverbal Perceptiveness with Psychotherapists	
	Full PONS
	M (s)
Females (N = 15)	172.47 (8.75)
Males (N = 9)	174.56 (8.43)
	t = 0.57 (df=22) p = 0.57
	(ES = 0.24; Cohen's D = 0.24)

Selected Communication Channels	
Voice 40	
	M (s)
Females	25.27 (2.63)
Males	24.45 (2.30)
	t = 0.78 (df=22) p = 0.45
	(ES = 0.31; Cohen's D = 0.33)
Body 60	
	M (s)
Females	45.47 (4.05)
Males	47.56 (2.65)
	t = 1.37 (df=22) p = 0.18
	ES = 0.52; Cohen's D = 0.58
Face 60	
	Females 50.80 (2.76)
	Males 52.34 (3.16)
	t = 1.25 (df=22) p = 0.22
	(ES = 0.49; Cohen's D = 0.53)

*two tailed test

Table 1.1.2: Differences between Female and Male Participants in a Workshop with Methodist Theologians Using the PONS-Test. Means (M), Standard Deviations (s), t- Tests, and Effect Sizes (ES).

Study 1.1.2: Workshop at a Methodist College on Nonverbal Decoding (Reutlingen 04)			
		Total Sample: Students of Theology + 3 College Teachers 12 females; 7 males	Students of Theology only 10 females; 6 males
Full PONS			
	M (s)	M (s)	
Females	177.75 (4.99)	178.00 (5.23)	
Males 17	1.14 (7.71)	170.00 (7.77)	
	t = 2.28 (df=17) p = 0.04	t = 2.48 (df=14) p = 0.027	
	ES = 0.86; Cohen's D = 1.08	ES = 1.03; Cohen's D = 1.28	
Selected Communication Channels			
	M (s)	M (s)	
Voice 40			
Females	24.08 (2.50)	24.0 (2.67)	
Males	22.43 (2.70)	22.84 (2.71)	
	t = 1.35 (df=17) p = 0.19	t = 0.84 (df=14) p = 0.41	
	ES = 0.61; Cohen's D = 0.64	ES = 0.43; Cohen's D = 0.43	
Body 60			
Females	46.84 (4.00)	47.5 (3.89)	
Males	46.86 (2.12)	46.34 (1.75)	
	t = 0.01 (df=17) p = 0.99	t = 0.69 (df=14) p = 0.50	
	ES = 0.005; Cohen's D = 0.01	ES = 0.30; Cohen's D = 0.35	
Face 60			
Females	53.08 (2.84)	52.6 (2.80)	
Males	51.71 (2.43)	51.5 (2.59)	
	t = 1.06 (df=17) p = 0.30	t = 0.78 (df=14) p = 0.45	
	ES = 0.48; Cohen's D = 0.51	ES = 0.39; Cohen's D = 0.40	

*two tailed test

Table 1.1.3: Differences between Female and Male Participants in a Workshop with Inservice Teachers of Italian in Malta (July, 2005) Using the PONS-Test. Means (M), Standard Deviations (s), t-Tests, and Effect Sizes (ES).

	Full PONS M (s)	Females vs. Males t; p; (ES)
Females (N = 38)	171.00 (9.37)	
		t = 1.85 (df: 59) p = 0.069;
		(ES = 0.41; Cohen's D = 0.49)
Males (N = 23)	165.70 (12.91)	

Selected Communication Channels			
Voice40			
Females (N = 38)	25.34	(3.02)	t = 0.17 (df: 59) p = 0.87; (ES = 0.04; Cohen's D = 0.04)
Males (N = 23)	25.17	(4.66)	
Body60			
Females (N = 38)	46.29	(3.25)	t=0.66 (df: 59) p=0.51 ES=0.17; Cohen's D=0.17
Males (N = 23)	45.74	(2.99)	
Face60			
Females (N = 38)	49.66	(3.27)	t = 0.46 (df: 59) p = 0.65; (ES = 0.10; Cohen's D = 0.12)
Males (N = 23)	49.17	(4.97)	

*two tailed test

The results, as summarized in *Tables 1.1.1 – 1.1.3* show no significant differences between male and female psychotherapists in Full PONS (ES=0.24) and selected nonverbal channels. For Methodist Theologians and Inservice Teachers (Malta), however, significant (p=0.04) or nearly significant (p = 0.07) differences in Nonverbal Sensitivity (Full PONS: ES=0.86; 1.03; ES=0.4), favoring female teachers, were obtained. In the latter studies Effect Sizes are comparable to those obtained in the USA (ES=0.42; Rosenthal et al. 1979, Knapp and Hall 2002). No significant differences were found in the selected nonverbal channels.

1.2 Results on gender differences of education students and student teachers participating in traditional seminars and lectures at the University of Tuebingen and Stuttgart (Germany) using the Profile of Nonverbal Sensitivity (PONS)

In eight field studies (N=865) conducted in seminars and lectures for student teachers and students of education at the University of Tuebingen and Stuttgart (Germany) gender differences were also assessed with the PONS test. In Table 1.2 the results are summarized (see Appendix 1).

Table 1.2: Differences between Female and Male University Students in Seven Field Studies Using the PONS-Test. Means (M), Standard Deviations (s), t-Tests, and Effect Sizes (ES)

	M	(s)	Femals vs. Males t; p; (ES)
Study 1.2.1 Traditional Seminar: "Nonverbal Aspects of Human Communication" (U. of Stuttgart): 03/04; Posttest.			
Females, total (f) (N = 37)	181.66	(6.66)	t = 0.53 (df=57); p = 0.60 ES = 0.12 (Cohen's D = 0.14)
Males, total (m) (N = 22)	180.64	(8.29)	
Student teachers, f (N=17)	179.35	(6.05)	t=0.99 (df=27); p=0.33; ES=0.32 (Cohen's D=0.37);
Student teachers, m (N=12)	182.00	(8.41)	
MA Students, f (N=20)	183.65	(6.65)	t=1.66 (df=28); p=0.11); ES=0.56 (Cohen's D=0.65).
MA Students, m (N=10)	179.00	(8.27)	
(no test repetitioners*)			
Study 1.2.2 Traditional Seminar: "Classroom Management" (U. of Tuebingen: 03/04, Posttest) (6 MA/Diploma Students, 38 Student Teachers).			
Females (N = 28)	176.14	(8.97)	t = 1.30 (df: 42); p = 0.20; ES = 0.40; Cohen's D = 0.41
Males (N = 16)	172.56	(8.46)	
(no test-repetitioners*)			
Study 1.2.3 Traditional Seminar: "Models of Teaching" (University of Tuebingen: 04)			
Females, (f), total (N=54)	174.52	(11.03)	t = 0.50 (df=79); p = 0.62 ; ES = 0.11 ; Cohen's D = 0.12
males, (m), total (N=27)	173.34	(7.93)	
Student teachers f (N = 47)	174.43	(11.62)	t = 0.43 (df=72); p = 0.67; ES = 0.09; Cohen's D = 0.10
Student teachers, m (N = 27)	173.34	(7.93)	
(Student teachers, f (N=47)	174.43	(11.62)	t=0.16 (df=52); p=0.87)) ES=0.06; Cohen's D=0.06)
(Students of Ed., f (N=7)	175.14	(6.26)	
Study 1.2.4 Traditional Lecture: "Nonverbal Aspects of Human Communication I" (University of Tuebingen: 03/04, Posttest)			
Students of Ed., f (N = 96)	179.49	(6.62)	t = 1.29 (df: 111); p = 0.199 ES = 0.27; Cohen's D = 0.34
Students of Ed., m (N = 17)	177.12	(8.79)	

Table 1.2: Differences between Female and Male University Students in Seven Field Studies Using the PONS-Test. Means (M), Standard Deviations (s), t-Tests, and Effect Sizes (ES)

	M	(s)	Femals vs. Males t; p; (ES)
Study 1.2.4 Traditional Lecture: "Nonverbal Aspects of Human Communication I" (University of Tuebingen: 03/04, Posttest)			
Students of Ed., f (N = 96)	179.49	(6.62)	t = 1.29 (df: 111); p = 0.199 ES = 0.27; Cohen's D = 0.34
Students of Ed., m (N = 17)	177.12	(8.79)	
Study 1.2.5 Lecture: "Nonverbal Aspects of Human Communication II" (U. of Tuebingen: 04, Pretest)**			
Females, f, total (N = 94)*	179.13	(8.06)	t = 1.03 (df: 116); p = 0.31; ES = -0.22; Cohen's D = -0.23:
Males, m, total (N = 24)	180.92	(5.49)	
Without repetitioners*: Student teachers (N=13) + Students of Ed. (N=48), f			
Student teachers (N=13) + Students of Ed. (N=15), m	178.41	(8.20)	t=1,53 (df=73); p=0.13; ES=-0.41; Cohen's D=-0.43.
Students of Ed. (N=48), f	178.42	(8.57)	
Students of Ed. (N=11), m	182.00	(8.37)	t=1.33 (df=57); p=0.19; ES=-0.42; Cohen's D=-0.46.
Student teachers (N=13), f	178.38	(6.93)	
Students teachers (N=4), m	181.00	(8.37)	t=-0.63 (df=15); p=0.54; ES=-0.31; Cohen's D = -0.36
Test Repetitioners*: (Students of Education only)			
Females (N=37)	187.68	(6.60)	t=0.92 (df=45); p= 0.36; ES=0.32; Cohen's D=0.33.
Males (N=10)	185.50	(6.88)	
Study 1.2.6 Traditional Lecture: "Methods and Approaches to Improve Social Competence" (U of Tuebingen, 04/05); Pretest			
Females, total (N=53)*	178.62	(9.19)	t=-0.27 (df=76); p=0.79; ES=-0.06; Cohen's D=0.07.
Males, total (N=25)	179.20	(7.58)	
Student teachers + students of Ed. without test-repetitioners: Females (N=39)			
Males (N=18)	176.61	(9.17)	t=0.098 (df=55); p=92 ES=0.03; Cohen's D=0.03
Student teachers (N=22), f	176.52	(6.52)	
Student teachers (N=13), m	174.64	(9.41)	t=-0.23 (df=33); p=0.82; ES=-0.07; Cohen's D=-0.08.
Students of Ed. (N=17), f	175.31	(5.60)	
Students of Ed. (N=5), m	179.71	(8.24)	t=-0.07 (df=20); p=0.94; ES=-0.04; Cohen's D=-0.04.
Test Repetitioners*: Females, total (N=14)	183.57	(7.49)	
Males, total (N=6)	186.34	(6.08)	t=0.94 (df=18); p=0.36 ; ES=-0.37 ; Cohen's D=-0.46.
Results for Students of Education + Student Teachers who took the PONS first time (Study 1.2.6)*:			
	Selected Communication Channels		Females vs. Males
	Voice40		
	M	(s)	t; p; (ES)
Females (N = 39)	25.56	(2.95)	t = 1.51 (df: 55) p = 0.14; ES = 0.41; Cohen's D = 0.43
Males (N = 18)	24.34	(2.63)	
	Body60		
Females (N = 39)	47.46	(3.09)	t=0.02 (df: 55) p=0.98 ES=0.003; Cohen's D=0.006
Males (N = 18)	47.45	(3.15)	
	Face60		
Females (N = 39)	51.95	(3.59)	t = 0.84 (df: 55) p = 0.41; ES = -0.21; Cohen's D = -0.24
Males (N = 18)	52.72	(2.27)	
Study 1.2.7. Seminar: "Nonverbal Aspects of Human Communication" (University of Tuebingen 04/05)			
Females, f, total (N=44)	178.20	(7.17)	t=0.08 (df: 53); p=0.94; ES=0.02; Cohen's D=0.03;
Males, m, total (N=11)	178.00	(11.20)	
Participants without PONS-test Repetitioners: Females, f, (N=40)			
Males, m, (N=10)	177.55	(6.82)	t=0.59 (df: 48); p=0.56; ES=0.16; Cohen's D=0.21;
Students of Education	176.00	(9.51)	
Females, f, (N=12)	174.34	(6.80)	t=0.77 (df: 13); p=0.45; ES=0.49; Cohen's D=0.50;
Males, m, (N=3)	171.00	(6.00)	
Student Teachers Females, f, (N=28)			
Males, m, (N=7)	178.93	(6.46)	t=0.25 (df: 33); p=0.80; ES=0.08; Cohen's D=0.11;
Test Repetitioners Females, f, (N=4)	178.14	(10.29)	
Males, m, (N=1)	184.75	(8.34)	198.00

Table 1.2: Differences between Female and Male University Students in Seven Field Studies Using the PONS-Test. Means (M), Standard Deviations (s), t-Tests, and Effect Sizes (ES)

	M	(s)	Females vs. Males t; p; (ES)
Study 1.2.8. Seminar: "Models of Teaching" (U. of Stuttgart, 05, Pretest)			
Females, f, total (N=71)	178.69	(6.50)	t=2.33 (df: 91); p=0.022; ES=0.46; Cohen's D=0.49 ;
Males, m, total (N=34)	175.44	(7.02)	
Student teachers, f (N=46)	178.87	(5.69)	t=2.77 (df=70); p=0.0072 ES=0.63 (Cohen's D=0.68) ;
Student teachers, m (N=26)	174.00	(6.47)	
MA Students, f (N=25)	178.36	(7.91)	t=0.26 (df=31); p= 0.80); ES=0.10 (Cohen's D=0.11).
MA Students, m (N=8)	179.00	(8.27)	
Test Repetitioners*: Females (N=5)	181.60	(5.94)	
Males (N=0)			
Results for Student Teachers who took the PONS first time (Study 1.2.8)*:			
	Selected Communication Channels		Females vs. Males
	M	(s)	t; p; (ES)
Voice40			
Females (N = 46)	25.50	(2.51)	t = 0.26 (df: 70) p = 0.80; (ES = 0.06; Cohen's D = 0.06)
Males (N = 26)	25.35	(2.26)	
Body60			
Females (N = 46)	48.37	(2.66)	t=3.15 (df: 70) p=0.002 ES=0.76; Cohen's D=0.77
Males (N = 39)	46.35	(2.54)	
Face60			
Females (N = 46)	52.41	(2.65)	t = 1.22 (df: 70) p = 0.22; (ES = 0.30; Cohen's D = 0.30)
Males (N = 26)	51.62	(2.67)	
Results for Students of Education who took the PONS first time (Study 1.2.8)*:			
	Selected Communication Channels		Females vs. Males
	M	(s)	t; p; (ES)
Voice40			
Females (N = 25)	25.72	(2.53)	t = 0.41 (df: 31) p = 0.68 (ES = -0.16; Cohen's D = -0.17)
Males (N = 8)	26.13	(1.96)	
Body60			
Females (N = 25)	48.12	(2.99)	t=-0.39 (df: 31) p=0.70 ES=-0.13; Cohen's D=-0.16
Males (N = 8)	48.63	(3.81)	
Face60			
Females (N = 25)	52.12	(3.75)	t = 1.22 (df: 31) p = 0.23; (ES = 0.46; Cohen's D = 0.50)
Males (N = 8)	50.38	(2.56)	
Study 1.2.9/1.2.10 Traditional Lecture: "Observation and Experiment in Educational Research" (U of Tuebingen, 05, Pretest) plus Traditional Seminar : "Effective Teaching Practices";(U of Tuebingen, 05); Pretest			
Females total (N = 138)	176.77	(9.08)	t = 1.35 (df: 189) p = 0.18; (ES = -0.22; Cohen's D = -0.22)
Males total (N = 53)	178.74	(8.96)	
Results for all participants who took the PONS first time*:			
	Full PONS		Females vs. Males
	M	(s)	t; p; (ES)
Females (N = 117)	175.50	(8.64)	t = 0.15 (df: 154) p = 0.88; (ES = 0.05; Cohen's D = 0.03)
Males (N = 39)	175.63	(7.23)	

	M	(s)	Females vs. Males
Selected Communication Channels (Study 1.2.9/10)			
Voice40			
Females (N = 116)	26.36	(6.64)	t = 0.54 (df: 153) p = 0.59; ES = 0.09; Cohen's D = 0.10
Males (N = 39)	25.77	(2.47)	
Body60			
Females (N = 116)	47.13	(3.33)	t=0.53 (df: 153) p=0.60 ES=0.09; Cohen's D=0.10
Males (N = 39)	47.44	(2.47)	
Face60			
Females (N = 116)	52.16	(4.34)	t = 0.87 (df: 153) p = 0.39; ES = 0.15; Cohen's D = 0.16
Males (N = 39)	51.51	(3.02)	
Results for participants who took the PONS second time (Test Repetitioners*) (Study Full PONS Females vs. Males			
	M	(s)	t; p; (ES)
Females (N = 21)	183.34	(8.87)	t = 1.76 (df: 33) p = 0.08; (ES = -0.54; Cohen's D = -0.60)
Males (N = 14)	188.14	(6.24)	
Selected Communication Channels (Study 1.2.9/10)			
Voice40			
Females (N = 21)	25.81	(2.52)	t = 1.06 (df: 31) p = 0.30; (ES = 0.32; Cohen's D = 0.39)
Males (N = 12)	26.92	(3.47)	
Body60			
Females (N = 21)	49.71	(3.85)	t=0.65 (df: 31) p=0.52 ES=0.22; Cohen's D=0.24
Males (N = 12)	50.67	(4.38)	
Face60			
Females (N = 21)	54.05	(2.18)	t = 0.96 (df: 31) p = 0.34; (ES = 0.33; Cohen's D = 0.35)
Males (N = 12)	54.84	(2.41)	
Study 1.2.9/1.2.10: Results on Students of Education who took the the PONS first time*			
Students of Education			
	M	(s)	Females vs. Males
			t; p; (ES)
Full PONS			
Females (N=50)	176.82	(9.67)	t = 0.34 (df: 11) p = 0.74; (ES = 0.31; Cohen's D = 0.31)
Males (N = 6)	173.84	(8.54)	
Voice40			
Females (N = 50)	25.48	(2.57)	t = 0.60 (df: 54) p = 0.55; (ES = -0.21; Cohen's D = -0.26)
Males (N = 6)	26.17	(3.31)	
Body60			
Females (N=50)	47.82	(3.27)	t=0.60 (df: 54) p=0.55 (ES=0.25; Cohen's D=0.26)
Males (N = 6)	47.00	(2.10)	
Face60			
Females (N = 50)	52.14	(3.05)	t = 0.72 (df: 54) p = 0.47; (ES = 0.27; Cohen's D = 0.31)
Males (N = 6)	51.17	(3.66)	

two tailed tests;

		Students of Education		Females vs. Males t; p; (ES)
	M	(s)		
Females (N=8)	185.88	(6.75)	Full PONS	t = 0.34 (df: 11) p = 0.74; (ES = -0.17; Cohen's D = -0.19)
Males (N = 5)	187.00	(3.81)		
Females (N=8)	26.25	(1.67)	Voice40	t = 0.62 (df: 10) p = 0.55; (ES = 0.29; Cohen's D = 0.38)
Males (N=4)	27.00	2.58)		
Females (N=8)	50.75	(4.03)	Body60	t=0.56 (df: 10) p=0.58 ES=0.30; Cohen's D=0.35
Males (N=4)	49.25	(4.99)		
Females (N=8)	54.00	(2.39)	Face60	t = 1.16 (df: 10) p = 0.27; ES = 0.67; Cohen's D = 0.71)
Males (N=4)	55.75	(2.63)		

two tailed tests;

1.2.10: Results on Students of Education who took the the PONS first time*				
		Student Teachers		Females vs. Males t, p, (ES)
	M	(s)		
Females (N=67)	174.67	(7.74)	Full PONS	t = 0.60 (df :98) p=0.55 (ES = -0.13; Cohen's D = -0.13)
Males (N=33)	175.64	(7.09)		
Females (N=66)	27.03	(8.49)	Voice40	t = 0.88 (df :97); p = 0.38 (ES = 0.16 ; Cohen's D = 0.19)
Males (N=33)	25.70	(2.34)		
Females (N=66)	46.61	(3.31)	Body60	t = 1.39 (df :97) p=0.17 (ES=-0.27; Cohen's D=-0.30)
Males (N=33)	47.52	(2.55)		
Females (N=66)	52.18	(5.13)	Face60	t=0.63 (df:97) p=0.53 (ES=0.12; Cohen's D=0.13)
Males (N=33)	51.58	(2.95)		
Females (N=13)	181.77	(9.88)		t = 1.80 (df :20) p=0.09 (ES = -0.71; Cohen's D = -0.78)
Males (N= 9)	188.78	(7.40)		
Females (N=13)	25.54	(2.96)	Voice40	t = 0.89 (df :19); p = 0.39 (ES = -0.34; Cohen's D = -0.40)
Males (N=8)	26.88	(3.94)		
Females (N=13)	49.08	(3.75)	Body60	t = 1.30 (df :19) p=0.21 (ES=-0.55; Cohen's D=-0.59)
Males (N=8)	51.38	(4.21)		
Females (N=13)	54.08	(2.14)	Face60	t=0.30 (df: 19) p=0.77 (ES=-0.13; Cohen's D=-0.13)
Males (N=8)	54.38	(2.33)		

two tailed tests;

No significant differences could be obtained between male and female University Students in Nonverbal Sensitivity, neither in the Full PONS nor in selected nonverbal communication channels in seven out of eight field studies. Only in the *Study 1.2.8* a significant difference occurred among student teachers in favour of females. The overall ES of these field studies was M ES=0.10 in favour of women which is considered as very small. Effect Sizes for Student Teachers as compared to Students of Education (MA, Diploma) revealed little differences (Student Teachers M ES=0.09; Students of Education: M ES=0.17). Also among PONS test repetitioners (participants who took the PONS-test twice) only small gender differences could be observed: M ES=-0.20.

**Gender Differences in Training Studies
Differences between Female and Male Participants
(Gender Effects) in the Assessment of Effects of a Training Program Aiming at Improvements in Decoding as well as in Encoding Skills.**

In three studies (Study E 1.3.1 - E 1.3.3) the effects of a training program (Klinzing and Gerada Aloisio 2004; Klinzing, Köhler, Laupp and Gerada 2004) aimed at the improvement of decoding abilities and encoding abilities (nonverbal expressiveness), were assessed in posttest-only control group designs (with random assignment of the participants to the experimental and control conditions). In two additional studies (Study E4, E5, Klinzing and Gerada Aloisio 2005) the relative effectiveness of focused and controlled laboratory practice (vs. no opportunity for laboratory practice) was investigated.

Table 1.3: Profile of Nonverbal Sensitivity (PONS-Test.): Differences between Female and Male Participants in a Training Study: Means (M), Standard Deviations (s), t-Tests, and Effect Sizes (ES)

Training Study E 1.3.1 (Febr.2003)				
	Experimental Group (N = 9f/10m)		Control Group (N = 11f/8m)	
	M	(s)	M	(s)
Female	179.34	(3.87)	177.73	(5.37)
Male	180.90	(5.17)	176.00	(4.31)
	t=0.75; ES= -0.30 p=0.47		t=0.78; ES= 0.32 p=0.47	
Training Study E 1.3.2 (Febr.2004)				
	Experimental Group (N = 14f/5m)		Control Group (N = 11f/4m)	
	M	(s)	M	(s)
Female	180.79	(5.28)	176.91	(7.75)
Male	183.00	(3.67)	177.75	(11.21)
	t=0.86; ES= -0.42 p=0.40		t=-0.17; ES= -0.07 p=0.87	
Training Study E 1.3.3 (Oct 2004)* (Data for participant who took the PONS-test the first time only)				
	Experimental Group (N = 17f/11m)		Control Group (N = 20f/6m)	
	M	(s)	M	(s)
Female	184.82	(5.09)	179.65	(7.04)
Male	183.36	(6.99)	179.67	(8.94)
	t=0.64; ES= 0.21; p=0.53		t=-0.005; ES= -0.002; p=0.99	

Training Study 1.3.4 (Febr. 2005)* (Preliminary results; the data are based on scores calculated by the participants and not yet examined by the author yet examined by the authors)				
	Experimental Group (N = 18f/6m)		Control Group (N = 15f/7m)	
	M	(s)	M	(s)
Female	181.06	(5.40)	177.87	(4.85)
Male	181.17	(5.38)	177.86	(5.43)
	t=-0.04; ES=-0.02		t=-0.004; ES= 0.002	
	p=0.97		p=0.99	
(5 PONS-test-repetitioners were not included into the analysis)				
Training Study E 1.3.5 (March 2005)* (Data for participant who took the PONS-test the first time only)				
	Experimental Group (N = 7f/6m)		Comparison Group (N = 6f/6m)	
	M	(s)	M	(s)
Female	179.86	(6.15)	177.84	(3.97)
Male	184.67	(8.19)	168.33	(3.13)
	t=1.21; ES= -0.59		t=-2.55; ES= 2.40	
	p=0.25		p=0.03	

*two tailed test;

*Since the project started with the collection of data using the PONS-test, in the winter term 2003/2004, there were students who took the PONS twice as they participated in lectures and seminars in the following semesters in which data were also collected with this test. Because the test effects of the PONS are strong the data of "test repetitioners" have been calculated separately or were not included in the analysis.

Among other instruments the PONS was used. In Table 1.3 the results for gender effects in decoding skill are summarized (see Appendix 1).

As summarized in Table 1.3, the results show - with one exception - no significant differences between male and female participants in their posttests neither in the experimental (ES=-0.29) nor in the control- or comparison groups (M ES=0.53). The significant gender difference occurred in the comparison group of Study 1.3.5 in favour of females. Results indicate that males and females achieved not much different scores before and also after training (ES=-0.20).

Gender differences of inservice teachers, students of education and student teachers participating in training courses using the Test for Decoding Emotions from Facial Expressions (TDFE)

In six studies the effects of the training on the accuracy of decoding emotions from facial expressions were assessed in a workshop for Inservice Teachers in Malta (Study 2.1) and in training studies at the University of Tuebingen which were conducted in posttest-only-control-group designs (with random assignment of the participants to the experimental and control conditions), using the TDFE as posttests alone (Study 2.2, 2.3, 2.4, 2.5) or in addition to the PONS (Study 2.6).

In Table 2.1, the findings for the Inservice Teachers, in Tables, 2.2 – 2.4 the results for University Students are summarized (see Appendix 2).

As Table 2.1 shows, no significant (p< 0.05) differences were obtained between male and female inservice teachers in Malta for *intuitive judgment*. For *analytic judgment*, however, the gender differences became statistically significant in favor of the female trainees (ES=0.53).

Table 2.1.: Findings for Male and Female Inservice Teachers of Italian in Malta for Intuitive Judgment and Analytic Judgment: Means, Standard Deviations and t-Tests.

Study 1.3: Inservice Teachers (MALTA)									
Intuitive Judgment					Analytic Judgment				
Female Participants		Male vs. female			Female Participants		Male vs. female		
(N=38)		(N=22)			(N=38)		(N=22)		
M	M	t	p	ES	M	M	t	p	ES
(s)	(s)				(s)	(s)			
42.68	42.05	0.37	0.72	0.08	44.70	42.77	2.27	0.03	0.53
(7.76)	(3.34)				(2.87)	(3.62)			

Two tailed test

In Tables 2.2 results for University Students are summarized (see Appendix 2).

The results, as summarized in Table 2.2 show no significant differences between female and male students of education and student teachers with and without training in the two studies. In Tables 2.3 and 2.4 the results for three additional studies with University Students are summarized (see Appendix 2).

Table 2.2: Findings for Male and Female University Students for Intuitive (A) and Analytic Rating (B): Means, Standard Deviations and t-Tests for Study 1.3 (TDFE).

Study 2.2: University Students																	
Control Group (Female (f): N=18; Male (m): N=11)							Experimental Group (Female (f): N=19; Male (m): N=11)										
A	B		A-B		A	B		A-B		A	B		A-B				
f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m		
M	M	p	M	M	p	M	M	p	M	M	p	M	M	p	M	M	p
(s)	(s)		(s)	(s)		(s)	(s)		(s)	(s)		(s)	(s)		(s)	(s)	
364	357	0.70	373	378	0.09	0.9	2.0	0.32	409	421	0.29	419	439	0.1	1.1	1.9	0.46
(4.9)	(3.3)		(5.6)	(4.8)		(3.3)	(2.2)		(2.9)	(2.9)		(3.3)	(2.5)		(2.6)	(2.6)	
ES=-0.14			ES=-0.09			ES=-0.34			ES=-0.41			ES=-0.61			ES=-0.31		
Study 2.3: University Students																	
Individual (Female (f): N=12; Male (m): N=4)							Work Jigsaw (Female (f): N=4; Male (m): N=11)										
A	B		A-B		A	B		A-B		A	B		A-B				
f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m		
M	M	p	M	M	p	M	M	p	M	M	p	M	M	p	M	M	p
(s)	(s)		(s)	(s)		(s)	(s)		(s)	(s)		(s)	(s)		(s)	(s)	
372	351	0.38	393	360	0.19	2.1	0.9	0.27	389	379	0.68	422	416	0.8	3.3	3.8	0.8
(4.2)	(1.7)		(4.6)	(2.4)		(2.0)	(1.3)		(4.2)	(4.2)		(4.2)	(0.9)		(2.9)	(3.9)	
ES=0.50			ES=-0.72			ES=-0.60			ES=-0.24			ES=-0.14			ES=-0.13		

(Two-tailed tests; A= intuitive rating (ca. 1 second); B= analytic rating (ca. 6 seconds).

Table 2.3: Findings for Male (m) and Female (f) University Students for Intuitive (A) and Analytic Rating (B): Means, Standard Deviations and t-Tests for Study 2.4 -2.5 (TDFE).

	Study 2.4				Study 2.5				
Variable	Comparison Group		Experimental Group		Comparison Group		Experimental Group		
	A	B	A	B	A	B	A	B	
	(f: N=4; m: N=4)		(f: N=4; m: N=3)		(f: N=9; m: N=5)		(f: N=9; m: N=7)		
	M	M	M	M	M	M	M	M	
Test scores, total	f	38.5	38.25	37.75	41.37	34.17	36.0	42.11	44.44
		(3.12)	(2.22)	(2.87)	(2.56)	(4.75)	(3.77)	(1.71)	(1.94)
	m	34.0	35.75	37.00	39.67	35.1	37.3	40.5	42.86
		(2.16)	(0.86)	(2.64)	(4.75)	(3.93)	(5.73)	(1.80)	(2.44)
		ES=1.44	ES=1.13	ES=0.26	ES=0.38	ES=-0.20	ES=-0.23	ES=0.89	ES=0.65
		p>0.05	p<0.05	p>0.05	p>0.05	p>0.05	p>0.05	p>0.05	p<0.05
Positive Changes/All changes	f (not calculated)				0.47	0.65			
					(0.19)	(0.19)			
					0.53	0.64			
					(0.16)	(0.17)			
					ES=0.32	ES=0.05			
					p>0.05	p>0.05			

*Two-tailed tests; ES: Effect Size; A= intuitive rating (immediate judgment of ca. one second.); B= analytic rating (repeated judgment after ca. six seconds)

The results as summarized in Tables 2.3 and 2.4 reveal in two cases a significant superiority of female trainees over their male colleagues in analytic judgement: in the comparison group of Study 2.4 and in the experimental group in Study 2.5. These results could not be repeated in Study 2.6 (Table 2.4.): no significant differences between female and male trainees could be obtained, neither in the control nor in the experimental group for all of the variables of the TDFE. The overall Effect Size shows only a small difference between genders over the five studies with university students (10 samples): ES = 0.41 which comes close to that obtained with inservice teachers in Malta.

Table 2.4: Differences between Female and Male Participants in a Training Study: Decoding Emotions from Facial Expressions. Means (M), Standard Deviations (s), t- Tests, and Effect Sizes (ES).

Study 2.6 (1.3.1)							
Experimental Group (EG) N=9f/10m		Control Group (CG) N=11f/8m		EG	CG	EG	CG
Intuitive Judgment M (s)	Analytic Judgment M (s)	Intuitive Judgment M (s)	Analytic Judgment M (s)	Improvements from intuitive to analytic M (s)	CG M (s)	Positive Changes/ All changes Judgment M (s)	CG M (s)
Female:							
45.00 (5.11)	49.00 (4.99)	41.95 (4.03)	42.23 (5.57)	4.00 (3.40)	0.27 (4.31)	0.79 (0.19)	0.46 (0.24)
Male:							
42.80 (2.89)	46.15 (2.17)	38.13 (5.42)	41.06 (2.61)	3.40 (1.81)	2.90 (3.37)	0.71 (0.14)	0.49 (0.15)
t=1.14 p=0.28 ES=0.43	t=1.58 p=0.15 ES=0.57	t=1.69 p=0.14 ES=0.70	t=0.61 p=0.55 ES=0.21	t=0.49 p=0.63 ES=0.18	t=1.42 p=0.17 ES=-0.61	t=1.05 p=0.30 ES=0.42	t=0.27 p=0.79 ES=-0.13

Results on gender differences of psychotherapists, theologians, students of education and student teachers participating in workshops, traditional seminars and lectures in self-ratings of nonverbal sensitivity

In eight field studies conducted in workshops, seminars and lectures for psychotherapists, students of Theology and Theologians, Maltese inservice teachers, Student Teachers and Students of Education at the University of Tuebingen and Stuttgart (Germany), gender differences on Self-Ratings of Nonverbal Sensitivity, (without PONS-test repetitions) were assessed before the administration of PONS. In Tables 3.1.1 - 3.1.3 the results for the Self-Ratings of decoding skills for Psychotherapists, Methodist Theologians, and Inservice teachers in Malta are summarized (see Appendix 3).

The results, as summarized in Table 3.1.1 – 3.1.3 show a significant higher self-rating of warmth among female inservice teachers in Malta. For the other self-ratings, the differences are small and not statistically significant. Effect Sizes show that the gender differences are small in general nonverbal sensitivity (self-rating of warmth, understanding other people and social situations) and in specific nonverbal channels (self ratings of understanding of tone of voice, body movements, and facial expressions).

As the results summarized in Table 3.2 show, female University Students rated themselves as more warm, more competent to understand other people and social situations, and they rated their ability to decode nonverbal signs and signals (tones of voice, body movements, and facial expressions) higher than their male colleagues (exceptions: understanding voice and body in Study 3.7 and 3.6). In four cases these results became statistically significant for warmth (Study 3.3, 3.5, 3.8, and 3.6). Effect Sizes show that the differences between male and female University Students are greater in self-ratings of general nonverbal sensitivity (M ES=0.36) than in self-ratings of specific nonverbal channels (voice, body, face: M ES=0.09).

Discussion

In contradiction to previous, relatively consistent findings from research done in the USA (M ES = 0.42, Rosenthal et al., 1979, Hall 1998), only small and inconsistent gender effects (Field Studies: M ES = 0.10; Training Studies M ES= 0.38) could be observed in nonverbal decoding skills as measured by the Profile of Nonverbal Sensitivity (PONS) among German students studying education (ES=0.17) and student teachers (ES=0.09) in 15 studies (20 samples) (N = 1079) and with 24 psychotherapists (ES=0.24).

In two samples, however, one small sample with theologians

Table 3.1.1: Differences between Female and Male Psychotherapists Using Self-Ratings of Nonverbal Decoding Ability. Means (M), Standard Deviations (s), t-Tests, and Effect Sizes (ES)

	Female Participants (N = 15)		Male Participants (N = 9)	
	M	(s)	M	(s)
1) "I Am Warm"	7.13	(0.92)	7.11	(0.78)
	t = 0.06; p = 0.95; ES = 0.02; Cohen's D = 0.03			
2) "I Understand People"	7.60	(0.91)	7.78	(0.44)
	t = 0.55; p = 0.55; ES = 0.20; Cohen's D = 0.23			
3) "I Understand Social Situations"	7.07	(1.03)	7.34	(0.87)
	t = 0.65; p = 0.52; ES = 0.26; Cohen's D = 0.27			
4) "I Understand Voice Tone"	7.27	(1.16)	6.89	(1.27)
	t = 0.75; p = 0.46; ES = 0.30; Cohen's D = 0.31			
5) "I Understand Body"	6.80	(1.42)	6.67	(1.00)
	t = 0.25; p = 0.81; ES=0.09; Cohen's D = 0.10			
6) "I Understand Face"	7.27	(0.96)	6.67	(1.12)
	t = 1.39; p = 0.18; ES=0.54; Cohen's D = 0.59			

Two-tailed test

Table 3.1.2: Differences between Female and Male Methodist Theologians Using Self-Ratings of Nonverbal Decoding Ability. Means (M), Standard Deviations (s), t-Tests, and Effect Sizes (ES).

	Total Sample: Students of Theology + 3 College Teachers (12 females; 7 males)		Students of Theology Only (10 females; 6 males)	
	M	(s)	M	(s)
1) "I Am Warm"				
Females	6.67	(1.15)	6.40	(1.07)
Males	7.14	(0.69)	7.17	(0.75)
	t = 0.99 (df=17) p = 0.34 ES = 0.41; Cohen's D = 0.47		t = 1.53 (df = 14) p = 0.15 ES = 0.72; Cohen's D = 0.79	
2) "I Understand People"				
Females	7.42	(0.67)	7.40	(0.70)
Males	7.14	(0.90)	7.20	(0.98)
	t = 0.76 (df = 17) p = 0.46 ES = 0.32; Cohen's D = 0.36		t = 0.56 (df = 14) p = 0.59 ES = 0.29; Cohen's D = 0.29	
3) "I Understand Social Situations"				
Females	7.17	(0.72)	7.20	(0.63)
Males	6.57	(0.98)	6.50	(1.05)
	t = 1.53 (df = 17) p = 0.14 ES = 0.61; Cohen's D = 0.73		t = 1.68 (df = 14) p = 0.12 ES = 0.67; Cohen's D = 0.87	
4) "I Understand Voice Tone"				
Females	6.83	(1.27)	6.80	(1.32)
Males	7.00	(0.82)	7.17	(0.75)
	t = 0.31 (df = 17) p = 0.76 ES = 0.13; Cohen's D = 0.15		t = 0.62 (df = 14) p = 0.55 ES = 0.24; Cohen's D = 0.32	
5) "I Understand Body"				
Females	6.42	(1.83)	6.20	(1.93)
Males	6.29	(1.11)	7.17	(0.75)
	t = 0.17 (df = 17) p = 0.87 ES=0.07; Cohen's D = 0.08		t = 1.16 (df = 14) p = 0.27 ES=0.50; Cohen's D = 0.60	
6) "I Understand Face"				
Females	6.00	(1.81)	5.60	(1.71)
Males	6.29	(0.95)	6.17	(1.17)
	t = 0.38 (df = 17) p = 0.71 ES=0.16; Cohen's D = 0.18		t = 0.71 (df = 14) p = 0.49 ES=0.34; Cohen's D = 0.37	

Two-tailed test

Table 3.1.3.: Differences between Female and Male Participants in a Workshop with Inservice Teachers of Italian in Malta (July, 2005) Using Self-Ratings of Nonverbal Decoding Ability. Means (M), Standard Deviations (s), t-Tests, and Effect Sizes (ES).

	Female Participants (N = 38)		Male Participants (N = 22)	
	M	(s)	M	(s)
1) "I Am Warm"	7.21	(1.21)	6.45	(1.63)
	t = 2.05; p = 0.045; ES = 0.47; Cohen's D = 0.55			
2) "I Understand People"	7.63	(1.15)	7.18	(1.54)
	t = 1.33; p = 0.19; ES = 0.29; Cohen's D = 0.36			
3) "I Understand Social Situations"	7.18	(1.35)	7.18	(1.59)
	t = 0.006; p = 0.99; ES = 0.00; Cohen's D = 0.002			
4) "I Understand Voice Tone"	7.61	(1.10)	7.41	(1.30)
	t = 0.62; p = 0.53; ES = 0.15; Cohen's D = 0.45			
5) "I Understand Body"	6.95	(1.25)	7.00	(0.93)
	t = 0.17; p = 0.86; ES = 0.04; Cohen's D = 0.86			
6) "I Understand Face"	7.39	(1.17)	7.41	(0.91)
	t = 0.05; p = 0.96; ES = 0.02; Cohen's D = 0.01			

Two-tailed test

(N=19) and one with inservice teachers of Italian in Malta (N=64), significant or nearly significant results (p=0.069) could be obtained in favor of women (M ES=0.43; 0.41). *Research Question 1* can be answered positively for Theologians and Inservice Teachers in Malta but not for University Students and Psychotherapists.

In a study with Inservice Teachers of Italian in Malta (Study 1.1.3, N=64) and in 10 samples of University Students (five studies) the TDEFE was used solely or in addition to the PONS. Females significantly outperformed their male colleagues in analytic judgment of portraits after discrimination training

Table 3.2.: Differences between Female and Male University Students in Their Self-rated Nonverbal Sensitivity. Means (M), Standard Deviations (s), t-Tests, and Effect Sizes (ES).

	Study 3.3 Women (N = 53)		Men (N = 26)		Study 3.5 Women (N = 81)		Men (N = 18)		Study 3.8 Women (N = 112)		Men (N = 33)	
	M	(s)	M	(s)	M	(s)	M	(s)	M	(s)	M	(s)
1.) "I Am Warm"	6.98	(1.34)	5.89	(1.45)	6.88	(1.20)	6.00	(1.46)	7.03	(1.16)	6.52	(1.15)
	t = 3.33; p = 0.0013; ES = 0.75; Cohen's D = 0.80;				t = 2.70; p = 0.008; ES = 0.60; Cohen's D = 0.70.				t = 2.23; p = 0.027; ES = 0.44; Cohen's D = 0.44.			
2.) "I Understand People"	7.26	(0.94)	6.96	(1.54)	8.43	(0.98)	7.06	(1.51)	7.46	(0.97)	7.36	(0.74)
	t = 1.08; p = 0.28; ES = 0.19; Cohen's D = 0.26				t = 0.65; p = 0.52; ES = 0.15; Cohen's D = 0.17.				t = 0.55; p = 0.58; ES = 0.10; Cohen's D = 0.11.			
3.) "I Understand Social Situations"	6.96	(1.14)	6.58	(1.53)	7.32	(1.06)	6.95	(1.35)	7.19	(1.11)	7.00	(1.25)
	t = 1.26; p = 0.21; ES = 0.25; Cohen's D = 0.30.				t = 1.30; p = 0.20; ES = 0.27; Cohen's D = 0.34.				t = 0.83; p = 0.41; ES = 0.15; Cohen's D = 0.16.			
4.) "I Understand Voice Tone"	7.28	(1.17)	6.77	(1.11)	6.93	(1.20)	6.84	(1.10)	6.66	(1.49)	6.82	(1.47)
	t = 1.87; p = 0.07; ES = 0.44; Cohen's D = 0.45.				t = 0.30; p = 0.77; ES = 0.08; Cohen's D = 0.08.				t = 0.64; p = 0.59; ES = 0.11; Cohen's D = 0.11.			
5.) "I Understand Body"	6.62	(1.30)	6.50	(1.03)	6.64	(1.27)	6.84	(1.04)	6.59	(1.12)	6.52	(1.68)
	t = 0.42; p = 0.68; ES = 0.09; Cohen's D = 0.10				t = 0.60; p = 0.55; ES = 0.16; Cohen's D = 0.16.				t = 0.30; p = 0.77; ES = 0.01; Cohen's D = 0.06.			
6.) "I Understand Face"	7.02	(1.31)	6.69	(1.35)	7.17	(1.03)	7.06	(1.00)	7.04	(1.05)	6.58	(1.73)
	t = 1.03; p = 0.31; ES = 0.25; Cohen's D = 0.25				t = 0.44; p = 0.66; ES = 0.11; Cohen's D = 0.11.				t = 1.88; p = 0.06; ES = 0.27; Cohen's D = 0.37.			

Two-tailed test

and familiarization with techniques for analyzing facial expressions of emotion (ES=0.53). However, inconsistent and small differences between female and male University Students occurred; in only two cases the results became statically significant in favor of women (Study 2.4 and 2.5: analytic decoding). The overall was **M ES = 0.41** for all samples. *Research Question 2* can be answered positively for *Inservice Teachers in Malta* but not for *University Students*.

Also in some samples, only small differences between women

	Study 3.6 Women (N = 39)		Men (N = 18)		Study 3.7 Women (N = 71)		Men (N = 34)	
	M	(s)	M	(s)	M	(s)	M	(s)
1.) "I Am Warm"	7.34	(0.96)	6.06	(1.06)	6.76	(1.27)	6.35	(1.39)
	t = 4.54; p = 0.0001; ES = 1.21; Cohen's D = 1.29;				t = 1.49; p = 0.14; ES = 0.29; Cohen's D = 0.31.			
2.) "I Understand People"	7.59	(0.85)	7.39	(1.04)	7.37	(0.91)	7.00	(1.10)
	t = 0.77; p = 0.44; ES = 0.19; Cohen's D = 0.22				t = 1.80; p = 0.08; ES = 0.34; Cohen's D = 0.37.			
3.) "I Understand Social Situations"	7.34	(1.17)	7.00	(1.28)	7.03	(1.17)	6.79	(1.23)
	t = 0.97; p = 0.34; ES = 0.27; Cohen's D = 0.28.				t = 0.94; p = 0.35; ES = 0.20; Cohen's D = 0.20.			
4.) "I Understand Voice Tone"	7.26	(0.94)	7.12	(1.13)	6.38	(1.52)	6.50	(1.48)
	t = 0.51; p = 0.61; ES = 0.12; Cohen's D = 0.15.				t = 0.38; p = 0.70; ES = 0.25; Cohen's D = -0.25.			
5.) "I Understand Body"	6.67	(1.13)	6.78	(1.26)	6.38	(1.52)	6.50	(1.48)
	t = 0.33; p = 0.74; ES = -0.09; Cohen's D = -0.09				t = 0.38; p = 0.70; ES = -0.08; Cohen's D = -0.08.			
6.) "I Understand Face"	7.10	(1.10)	6.95	(0.87)	6.65	(1.39)	6.62	(1.18)
	t = 0.54; p = 0.59; ES = 0.14; Cohen's D = 0.15				t = 0.11; p = 0.91; ES = 0.02; Cohen's D = 0.02.			

Two-tailed test

and men could be found for *training effects*. No significant differences between male and female subjects who took the PONS-test twice (ES=-0.20), or among subjects attending seminars and lectures on nonverbal aspects of communication (vs. seminars and lectures unrelated to nonverbal skill), and nonverbal behavioral training courses (vs. control groups) could be obtained. Also, no considerable differences between control/comparison and experimental groups in trainings for decoding emotions from facial expressions could be observed on the TDEFE (ES=0.45; 0.38), indicating that both men and women learned from the treatments with comparable effects. *Research question 3* can not be answered positively. The results confirm those obtained in studies by Klinzing, Kunkel, Schiefer, Steiger (1984); Schiefer, Kunkel, Steiger, Revenstorf, & Klinzing (1984).

The differences in findings between studies conducted in the USA and in Germany may be explained by cultural differences between the countries.

Research Question 4 dealt with the accuracy of Self-Ratings of Nonverbal Sensitivity.

Results revealed that female University Students rated themselves as more warm, as slightly more competent to understand other people and social situations, and they rated their ability to decode nonverbal signs and signals (tones of voice, body movements, and facial expressions) generally little higher than their male colleagues. In five cases these results became statistically significant for self-rated "warmth." Effect Sizes show that the differences between men and women are small, greater in self-ratings of *general nonverbal sensitivity* (Inservice Teachers: M ES=0.25; University Students: M ES=0.36) than in self-ratings of specific nonverbal channels (voice, body, face Inservice Teachers: M ES=0.21; University Students: M ES=0.09). *Research Question 4* also can not be answered positively except for the self rating of warmth.

As part of our project the studies will be continued in other European countries, namely the Netherlands, and in also Canada.

References

DiMatteo, M.R., Hays, R.D. and Prince, L.M. (1986), 'Relationship

of physicians' nonverbal communication skill to patient satisfaction, appointment noncompliance, and physician workload' in: *Health Psychology*, 5, 581–594.

DiMatteo, M.R., Taranta, A., Friedman, H.S. and Prince, L.M. (1980), 'Predicting patient satisfaction from physicians' nonverbal communication skills' in: *Medical Care*, 18, 376–387.

Ekman, P. and Friesen, W.V. (1975), *Unmasking the face*, Englewood Cliffs, NJ, Prentice-Hall.

Gerada Aloisio, B. and Klinzing, H.G. (2004), *Gender differences in the accuracy of decoding nonverbal signs and signals* (paper presented at the 29th Annual Conference of the Association for Teacher Education in Europe (ATEE), Agrigento, Italy, 23 -27 October 2004.

Hall, J.A. (1998), 'How big are nonverbal sex differences? The case of smiling and sensitivity to non-verbal cues' in: Canary, D.J. and Dindia, K. (eds), *Sex differences and similarities in communication: Critical essays and empirical investigations of sex and gender in interaction*, Mahwah, NJ: Erlbaum, 155-177.

Klinzing, H. G. (1998), 'Training der Beobachtungs- und Interpretationsfähigkeit nichtverbaler Zeichen und Signale in der Mimik [Training of decoding and interpreting nonverbal signs and signals in facial expressions]' in: Klinzing, H.G. (ed.), *Neue Lernverfahren. Zweite Festschrift für Walther Zifreund aus Anlaß seiner Emeritierung [New learning methods. Second commemorative volume for Walther Zifreund on the occasion of his retirement]*, Tübingen, FRG, DGVT-Verlag, 341-355.

Klinzing, H.G. (2003b), *Improving accuracy of decoding emotions from facial expressions by cooperative learning techniques. Two experimental studies* (paper presented at the annual meeting of the American Educational Research Association, Chicago).

Klinzing, H. G. and Gerada Aloisio, B. (2005), *Improving nonverbal receiving and sending skill by systematic training in laboratory settings* (paper presented at the annual meeting of the Invisible College for Research on Teaching and Teacher Education, Montreal).

Klinzing, H. G., Koehler, F., Laupp, H. and Gerada Aloisio, B. (2004), 'Systematic training in laboratory settings for improving nonverbal skill. Two experimental replication studies' in: Scurati, C. and Libotton, A. (eds.), *Teacher education between theory and practice. The end of theory... The future of practice?* Milan, 2005.

Klinzing, H.G., Kunkel, K., Schiefer, H. J. and Steiger, S. (1984), *The effects of nonverbal behavior training on teacher clarity, interest, assertiveness and persuasiveness during microteaching* (paper presented at the annual meeting of the American Educational Research Association. New Orleans, LA (ERIC ED 252 519).

Knapp, M.L. and Hall, J.A. (2002), *Nonverbal communication in human interaction*, 5th edition, Wadsworth, Thompson Learning, Inc.

Rosenthal, R., Hall, J. A., DiMatteo, M. R., Rogers, P. L. and Archer, D. (1979), *Sensitivity to nonverbal communication. The PONS-test*, Baltimore, MD, The John Hopkins University Press.

Schiefer, H.J., Kunkel, K., Steiger, S., Revenstorf, D. and Klinzing, H.G. (1984), Training nichtverbaler Expressivität und deren geschlechtsspezifische Bedeutung für die Überzeugungskraft [Training of nonverbal expressiveness and gender specific

relationship to persuasiveness)] in: *Unterrichtswissenschaft*, 12, 350–358.

