Social Blindness: Interpersonal Communication with Sighted vs. Nonsighted Persons

An Honors Thesis (HONRS 499)

by

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Abstract
The purpose of this experiment was to examine communication with blind versus sighted persons. To do this, 35 college students were asked to teach a second subject the respective meanings of a list of words. The second subject was actually an experimental confederate. Half of the subjects believed that they were talking to a blind person, while the other half talked to a sighted person. The task was tape recorded, and then analyzed by coders for speech rate, volume, and linguistic simplicity. Results indicated that some differences did exist between the subjects' conversations. Those talking to the blind confederate took longer to teach the task, and talked faster and louder. Also, they felt their respective learner would not do as well on a quiz. However, no significant differences were found with the complexity of language used or amount of speech disturbances. Practical implications of the results are discussed.
Social Blindness: Talking to Sighted vs. Nonsighted Persons

Being blind today is a very different experience than it was twenty years ago. Elevators are now equipped with Braille, computers can now be designed to speak to their blind users, seeing-eye dogs are trained at ever-advancing levels, and sports leagues for those without sight flourish. In addition, social advances have been made. As Coupland (1986) notes, there is an increased level of empathy exhibited publicly.

Indeed, in a preliminary survey of ten persons, those polled felt that they exhibited few conversation differences when talking to blind or nonblind individuals. While several admitted they would feel more awkward or intimidated when talking to a sightless person, 80% did not feel they would talk significantly faster, louder, or more simplistic.

However, have the fundamental assumptions that human beings make about the blind actually changed? In reality, these go much deeper than mere proper behavior. This paper attempts to get past this pretense. Will a person, when told to teach a sightless person a nonvisual task, alter his or her normal speech patterns?

Even some respected social institutions have fallen into the trap of slighting visually impaired persons. Unfortunately, science is one of those establishments. For example, Carroll (1961) has stated that the only difference in communication with blind persons is that body language is eliminated. This fails to take into account volume, rate of speech, and difficulty in communicating ideas (which are all dependent variables in this study). Bateman (1962) has also
blundered, stating that "To the extent that sighted persons' perceptions of the abilities of the blind are accurate, it is unrealistic to hope to change them" (p. 42).

Furnham and Pendred (1983) have been alert in noting this trend as well. They believe that many experiments do not take a level of care great enough to insure accurate measurement of attitudes towards handicapped individuals. They have found that many experiments do not take steps to avoid social desirability's affects on subjects' responses. They later note that the object being studied in many projects is so ambiguous (i.e., "handicapped person") that inferences may be too stereotyped, and therefore do not measure the actual attitude itself.

Some may question the relative importance of these societal shortfalls. As Kemp (1981) reveals, there is a very large void in empirical research about the blind as a whole, and about their interactions with society. Perhaps this oversight is due to the widely-held belief that some differences in communication are natural, and probably even beneficial to those without sight. For example, many feel that speaking louder and simpler only serve to help the blind understand better (Monbeck, 1973).

Unfortunately for those without sight, these well-intended conceptions actually do more harm than help. The blind person's problems can affect him or her in very fundamental ways. Nunnally (1961) has found that a fairly large number of people rate blind persons as weak, slow, delicate, passive, or sick. DePaulo and Coleman (1986) have concurred, reasoning that individuals alter their speech
to suit the perceived level of their listener's ability. They have proposed a competence hypothesis, which states that speech modifications are guided by the overall level of perceived cognitive and linguistic competence of the listener.

Altman (1981) makes a similar point, and sums up the various researchers in saying that attitudes toward disabled persons are important on three levels. First, if his or her peers provide acceptance and support, the handicapped person's adjustment will be substantially improved. Secondly, interactions with professionals who control services (i.e. doctors, social workers, and potential employers) affect in very real ways the handicapped persons' dependence on others. And finally, interactions with the general public become important contributors to the handicapped person's self-confidence and self-esteem.

Therefore, this problem deserves attention. It is not the isolated instances of the well-intended, but unenlightened few. Rather, differences are actually a too-common reality to those without sight.

There are two hypotheses of this study. The first is that a person's communication is different when talking to a blind person, as opposed to talking to someone with sight. Common conceptions of speech differences are measured in a way that eliminates the problems with prior research mentioned above. This particular experiment attempts to offer data to either support or refute the general public's views of their own interactions with sightless persons. The second hypothesis is that the person making these differences in
communication has no cognitive knowledge that he or she is doing so.

One way to study the first hypothesis is to isolate communication, making sure that visual references are absent. For this goal, a task was created wherein the subject was to teach another person a list of Indonesian words. This particular language was chosen because it is one that is seldom spoken in the United States.

From this task, seven separate dependent variables were examined. The first was total time needed to teach the specific task, followed by rate of speech. The third was the speaker’s volume. The fourth was to what extent the subject employed simple or complex words in teaching the task. The fifth was amount of speech disturbances (i.e., pauses, stutters) uttered by the teacher. The sixth was ease of teaching the task, while the final dependent variable was a judgment on how well the subject thought his or her learner would do a future quiz.

The independent variable was whether the subject spoke to a sighted person (those in the control group), or to a person they believed was blind (those in the experimental group). It is expected, based on past research, that a person talking to a visually impaired individual will 1) take longer to teach a specific nonvisual task, 2) speak at a slower rate, 3) speak louder, 4) employ more simplistic words, 5) have more speech disturbances, 6) have a more difficult time in teaching the words, and 7) presume the learner to do worse on a relevant quiz. These expectations are based on the work done by numerous researchers in the past (e.g., Altman, 1981; Bateman, 1962; Furnham and Pendred, 1983; Kleck, et al., 1966; and Nunnally, 1961).
To test the second hypothesis, each subject was asked to rate his or her own perceptions of the previous interaction. It is hypothesized, based on the results of the preliminary survey mentioned previously, that the responses of those in the experimental group will not be significantly different than those in the control group.

**Method**

**Subjects**

Thirty-five students (12 males, 23 females) enrolled in introductory psychology classes at a large Midwestern university participated in the study. Subjects took part in the investigation as part of a course requirement.

**Design**

Subjects were randomly assigned to either the control or experimental group. One male undergraduate served as instructor for the experiment. Four male undergraduates served as confederates in both the experimental and control groups. Each person who served as the non-blind confederate also played the part of the sightless person. This symmetry allowed the experimenter to determine fully the real subject’s behavior, which was free to vary as a function of the experimental manipulation.

**Materials**

The words were culled from *Indonesian-English Dictionary, 3rd Ed.* (Echols and Shedily, 1989). Each multi-syllable word was read audibly from the ten-word list, reprinted here:

1. *padah*: omen, warning.
2. *padat*: solid, compact.
3. *jelas*: clear, distinct.
4. *jelengar*: surprised, stunned into silence.
5. *jelti*: charming, ravishing, beautiful.
7. *liku*: curve, bend.
9. *lincah*: energetic, lively, active.

**Procedure**

Subjects were aware that their responses would be tape recorded, but would be kept completely anonymous. The subjects were randomly assigned beforehand to either the experimental or control group. In either case, they were read the instructions to be followed. They were told that the test was designed to look at foreign word acquisition. They were to do this by teaching one another a list of ten Indonesian words' respective English translations. Afterwards, the learner was to take a test over the words.

At this point, subjects were told that they were to be randomly placed as either the teacher or the learner. To do this, the two participants were asked to state their social security numbers. Whomever had the higher last digit was to be the learner, and whomever had the smaller last digit was to be the teacher. The subject was unaware that this procedure was fixed in order to insure his or her placement in the teacher position. The confederate had been trained previously to give a higher last number in all tests.

The actual task was then explained to both participants. The teacher was to explain to the learner what the ten Indonesian words mean. However, he or she was not to use the exact definition printed
on the paper. Two examples were given, the first one being the Indonesian word *org*. While this word literally means "person" the subject was instructed not to say this direct translation. Instead, they could give synonyms, use the word in a sentence or story, use its opposite, or whatever method they deemed appropriate to convey its meaning. The second example was the word *otek*, meaning "loose." Again, they could use any explanation that they chose to be appropriate to explain *otek*, as long as they refrained from actually saying the word "loose." This precaution was taken to insure a free-form conversation, instead of a simple reading of the translations.

The teachers were instructed to start at word #1, explain until he or she thought the learner should understand, and then go on to #2, until the ten words were completed. They were instructed to explain in as much detail as they needed in order for the learner to understand, then move on to the next word. They were not to go back and repeat any of the words or definitions, and were told that the learner would be given a quiz following the teaching session.

After making sure that the teachers understood their instructions, the two participants were separated by a wall, to eliminate the effects of body language. The confederate learner was instructed not to give any verbal feedback to the teachers.

After the subject had completed the task, he or she was given a brief questionnaire, reproduced in Appendix A. This asked the subject to rate himself or herself on Likert scales of 1 to 9 on the following items, as well as several fillers: how fast he or she talked (1=very slow to 9=very fast), how loud he or she talked (1=very loud to
9=very soft), to what extent he or she employed simple or complex words in teaching the task (1=very simple to 9=very complex), how many speech disturbances he or she had (1=very many to 9=very few), how easy the task was to complete (1=very difficult to 9=very simple), and how well he or she thought the learner would do on a quiz (1=very poorly to 9=very well). These questions paralleled six of the seven dependent variables being studied (with total time needed being the seventh). Care was made to reverse score approximately half of the items, in order to circumvent the subject's potential to fall into a pattern in their responses.

After the subject completed this questionnaire, they were given a blank piece of paper. On this, they were to write in their own words what they thought was being studied in this experiment. This was included to determine if any of the experimental-group subjects knew that the second participant was not blind at all, but a confederate.

After all tasks were completed, the tape recordings were played in random order to four coders, who were blind to the experimental condition. Each of the four coders worked independently to complete a questionnaire for each of the 35 subjects, reproduced in Appendix B. This asked them to rate the tape-recorded tasks on the following nine-point Likert scales, similar to the self-rating scales: speech rate, volume, word complexity, speech disturbances, ease of teaching, and quality of instructions. Again, approximately half of the items were reverse scored to circumvent the raters' potential to fall into a pattern in their responses.
Results

To measure the subjects' performance, two methods were used. The first dependent variable, total time to teach the task, was measured by stopwatch. The second method was used to measure the other six dependent variables. The alpha coefficients were acceptable for the the dependent measures (speech rate= 0.76, volume= 0.88, word simplicity= 0.25, speech disturbances= 0.72, ease of teaching= 0.60, and quality of instructions= 0.80), so the average of the four coder’s ratings were used as dependent variables.

Each dependent variable was analyzed with an analysis of variance, with experimental condition (blind versus sighted) as the independent variable. The results are summarized in Table 1, which presents the means of the two conditions in each of the seven variables.

| Insert Table 1 about here |

It was found that it took a marginally significantly longer time for the subjects to teach the confederate who appeared blind (m=221 seconds) than the sighted one (m=193 seconds). Also, subjects spoke significantly slower (m=4.72 on the raters' Likert scales vs. m=3.89) and louder (m=4.43 vs. m=6.39) to the blind confederate. Finally, the coders believed that the quality of instructions given to the blind confederate (m=5.15) would allow a learner to do significantly better on a quiz than those given to the sighted confederate (m=4.30). There were no significant differences between the coders'
perceptions of the teachers' word complexity, speech disturbances, or ease of teaching.

Each subject was also given a self-measure test. Analyses of variance were then performed on the data for each of the six dependent variables to determine if the results were significant. The results are summarized in Table 2, which presents the means of the two conditions in each of the six variables.

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It was found that subjects perceived themselves to have significantly more speech disturbances when talking to a sightless person (m=2.60) than a sighted one (m=3.84). There were no significant differences between speech rate, volume, word complexity, ease of teaching, or learner's expected performance on a quiz.

None of the subjects in the study expressed suspicion after the questionnaire. Most wrote down reiterations of the "foreign-word acquisition" explanation, with none mentioning suspicions about the other subject's blindness or possible confederacy. One male in the experimental group responded, "To me the purpose of the experiment was to see how well a person who knew nothing of the language could teach it to another person who knew nothing of the language," which is representative of the sample as a whole.
Discussion

There are two hypotheses of this paper. The first is that there are differences in communication when a sighted individual talks to another sighted person, as opposed to a blind person. This was measured by raters listening to audiotape recordings of subjects’ interactions. The results present in this experiment give some support to that hypothesis. The manipulation of the independent variable led to significant differences in four of the seven dependent variables -- total time to teach the task, speech rate, speech volume, and quality of instructions.

The second hypothesis is that these differences are not known by the person making them, which was measured by a self-report questionnaire. The results present give support to that hypothesis. The manipulation of the independent variable led to significant differences in only one of the six variables studied (with speech disturbances being the only perceived difference).

A special note should be made for one aspect of this study that some may view as a flaw. This is the fact that the audio tape recordings of each task were rated by coders, instead of being transcribed utterance for utterance and then analyzed. While the latter method may have some benefits, Wish, et al (1980) have found that rating scales can be a very effective way to measure interpersonal communication. In addition, they have found that ratings contain reliable extrasemantic information about what actually happens in interaction.
This being stated, it should be noted that there are three flaws which could be corrected in a replication of this experiment. First, the sample size was small. One could argue that a total of 35 subjects does not represent the population as a whole. A greater number of participants would likely ensure more accurate results.

Secondly, the demographics of the sample were fairly homogeneous. It could be argued that college students do not accurately represent the attitudes of mainstream America, as D.O. Sears (1986) does. For example, since Sears has found that college students typically hold more liberal beliefs than their mainstream counterparts, one could infer that they would treat blind persons more equally than that of society as a whole.

Finally, the setting for this experiment was just that: experimental. Subjects knew that they were being tape recorded and watched. This may have had some impact on their normal speech patterns. In a related point, subjects knew that their responses were being measured. Even though great care was taken to lend authenticity to the foreign language explanation, some subjects may have been wary. To correct both of these problems, a more naturalistic study may prove beneficial.

Despite these flaws, both real and apparent, the results do lead to some interesting conclusions. One reason for their significance may be that the infliction of blindness is such a salient, observable one. The use of dark glasses, canes, and guide dogs by the sightless only make their special conditions even more noticeable (Goffman, 1963). As Furnham and Pendred (1983) note, persons with an obvious
disability may be at a special disadvantage, because labeling is so much quicker. Kleck, et al. (1966) agree, contending that the social implications of a stigma are almost as much a factor as the physical implications.

Unfortunately, the fact that blindness is such a noticeable deviation also plays a large role in polarizing them from sighted individuals. Kleck, et al. (1966) note that the stigma has a tendency to spread to the blind's interpersonal connections, causing the non-handicapped to avoid long-term relationships so that the stigma does not somehow spread to them.

As Monbeck (1973) notes, knowledge is of primary importance in encouraging revision of stereotypes. He especially stresses knowledge derived from direct experience with blind people. Consequently, one way to lessen the polarization of sighted and nonsighted individuals is to increase their contact with each other.

As Bateman (1962) found, those subjects who had known children without sight were more positive in their appraisal of the blind person's abilities. Furthermore, within the group who had known blind individuals, the positiveness of appraisal increased with the total number of blind children known. This supports the contention that personal knowledge about blindness broadens one's outlook on the capabilities of nonsighted individuals. Another interesting finding in Bateman's study was that children who had no experience with the blind expressed a greater level of certainty and unanimity in their evaluation of the capabilities of the blind. Once again, it can be inferred that increased knowledge may in turn have
the direct result of decreasing the tendency to make decisions based on stereotypes.

These suggestions are not limited to children or the uneducated. As mentioned above, many of the college students polled felt that they would exhibit no differences, and the subjects' results seemed to confirm that this assumption is indeed erroneous. In addition, according to many reviewers, the area of empirical research is also lagging behind (e.g. Altman, 1981; Furnham and Pendred, 1983; and Kemp, 1981).

This being stated, there are many new directions where future research could prove beneficial if pursued. Applying the variables measured by DePaulo and Coleman (1986) to nonsighted communication is one promising area. Their study examined communication with children, foreigners, and retarded adults, but seems well-suited for a replication of this experiment. Their variables included total number of sentences, global repetitions (reiterations of the instructions), paraphrase repetitions (reiterations of the meaning of a preceding phrase), pause duration, sentence length, number of no-verb sentences, common vocabulary words used, use of listener's name, and type-token ratio (an index of diversity of vocabulary, found by dividing the total number of different words by the total number of words). These variables, if studied, are likely to lead to interesting results.

It is important to note that the studies cited earlier as being examples of cases where even science has slighted the blind are from the 1960's. Since then, advances have certainly been made socially.
Another progressing area is the continuing march of technology, which can only lead to new directions of research as well.

In fact, two studies -- also from the 1960's -- explain the then-new technologies being implemented. Kleck, et al (1966) recorded the psychogalvanic skin responses (a measure of skin resistances) of subjects who were involved in interactions. This technology could be applied to conversations between the blind and sighted as well. A second example comes from commercial devices that are able to increase word rates without altering the timbre or pitch of the speaker's voice (Foulke, et al, 1962). This technique, called speech compression, has direct relevance to speech rate studies. As humans develop greater technology to measure human behavior, an ever-increasing level of accuracy is attained. Given the importance of studies of visually-impaired individuals, the marriage of technology and the social sciences seems to hold great promise.

While the future certainly holds potential, the present is important as well. The benefit of this and similar studies is the attempt to get beyond proper behavior, beyond a surface acceptance of those who are not in the majority. Even those who are "just trying to help" by speaking louder and simpler are hurting those without sight, as mentioned above.

Perhaps the lessen to be learned from all this is that, while society has certainly progressed in its acceptance of deviance, there is still some way to go. The way those without sight are treated is integral to the way that they feel about themselves. Indeed, as American author and educator of the blind Hellen Keller (1920) wrote
in *Out of the Dark*, "My darkness has been filled with the light of intelligence, and behold, the outer day-light world was stumbling and groping in social blindness" (p.11).
References


Foulke, E. et al. (1962). Comprehension of rapid speech by the blind. Exceptional Children, 29, 134-141.


Subject's Self-Rating Scales

Foreign Word Acquisition

1. Age: ___
2. Male ___ Female ___
3. Do you speak any other languages?

Please answer the following questions regarding your perceptions of how you communicated with the other subject. Do this by circling the point on each scale that best reflects your judgment. Your responses are anonymous.

4. How interesting was this experiment?
   1 2 3 4 5 6 7 8 9
   +-----------+-----------+-----------+-----------+-----------+-----------+-----------+-----------+-----------+
   very uninteresting  very interesting

5. Please rate how fast you talked to the learner:
   1 2 3 4 5 6 7 8 9
   +-----------+-----------+-----------+-----------+-----------+-----------+-----------+-----------+-----------+
   very slow  very fast

6. Please rate how loud you talked to the learner:
   1 2 3 4 5 6 7 8 9
   +-----------+-----------+-----------+-----------+-----------+-----------+-----------+-----------+-----------+
   very soft  very loud

7. To what extent did you employ simple or complex words in teaching this task?
   1 2 3 4 5 6 7 8 9
   +-----------+-----------+-----------+-----------+-----------+-----------+-----------+-----------+-----------+
   very simple  very complex

8. How many pauses and stutters did you have?
   1 2 3 4 5 6 7 8 9
   +-----------+-----------+-----------+-----------+-----------+-----------+-----------+-----------+-----------+
   very few  very many

9. How easy was it to teach these words?
   1 2 3 4 5 6 7 8 9
   +-----------+-----------+-----------+-----------+-----------+-----------+-----------+-----------+-----------+
   very simple  very difficult

10. How well do you think the learner will do on his or her quiz?
    1 2 3 4 5 6 7 8 9
    +-----------+-----------+-----------+-----------+-----------+-----------+-----------+-----------+-----------+
    very poorly  very well
## Coder's Rating Scales

1. **rater's initials:** __
2. **subject number:** ____

Please answer the following questions regarding your perceptions of how the speaker communicated with the listener. Do this by circling the point on each scale that best reflects your judgment. Your responses are anonymous.

3. **Please rate how fast he or she talked to the learner:**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
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<tbody>
<tr>
<td>very slow</td>
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<td>very fast</td>
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</table>

4. **Please rate how loud he or she talked to the learner:**

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<th>1</th>
<th>2</th>
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<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
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<tbody>
<tr>
<td>very soft</td>
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<td>very loud</td>
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</table>

5. To what extent did he or she employ simple or complex words in teaching this task?

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<th>1</th>
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<th>3</th>
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<th>6</th>
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<tr>
<td>very simple</td>
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<td>very complex</td>
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</table>

6. **How many speech disturbances (e.g. pauses and stutters) did he or she have?**

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<th>1</th>
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<th>6</th>
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<th>9</th>
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<tr>
<td>very few</td>
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<td>very many</td>
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</table>

7. **How easy was it for him or her to teach these words?**

<table>
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<tr>
<th>1</th>
<th>2</th>
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<th>7</th>
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<tr>
<td>very simple</td>
<td></td>
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<td>very difficult</td>
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</tbody>
</table>

8. **How well do you think the learner would do on a quiz?**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
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<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>very poorly</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>very well</td>
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</tbody>
</table>
Author Notes

The author wishes to express his thanks to Andrew Lewellen, Clayton Kaupilla, Tom Beard, and Ryan Blair for their many hours of confederacy. Thanks are also due to Chad Roman, Kyle Grove, Andrew Beam, and David Grantz for their work as coders. Finally, this paper would not have been possible without the thoughtful help and guidance of Thomas Holtgraves, PhD.
Table 1

Mean Ratings of Subjects by Coders

<table>
<thead>
<tr>
<th>Measure</th>
<th>Blind Group</th>
<th>Control Group</th>
<th>$f$</th>
<th>sig of $f$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>220.67</td>
<td>193.16</td>
<td>3.56</td>
<td>.069</td>
</tr>
<tr>
<td>Speech Rate</td>
<td>4.72</td>
<td>3.89</td>
<td>4.28</td>
<td>.047</td>
</tr>
<tr>
<td>Speech Volume</td>
<td>4.43</td>
<td>6.39</td>
<td>22.92</td>
<td>.000</td>
</tr>
<tr>
<td>Word Complexity</td>
<td>4.53</td>
<td>4.62</td>
<td>.11</td>
<td>.747</td>
</tr>
<tr>
<td>Speech Disturbances</td>
<td>4.93</td>
<td>4.46</td>
<td>1.19</td>
<td>.285</td>
</tr>
<tr>
<td>Ease of Teaching</td>
<td>4.87</td>
<td>4.39</td>
<td>1.56</td>
<td>.221</td>
</tr>
<tr>
<td>Instructional Quality</td>
<td>5.15</td>
<td>4.30</td>
<td>4.49</td>
<td>.043</td>
</tr>
</tbody>
</table>

Social Blindness

24
### Mean Self-Ratings

<table>
<thead>
<tr>
<th>Measure</th>
<th>Blind Group</th>
<th>Control Group</th>
<th>$f$</th>
<th>sig of $f$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speech Rate</td>
<td>5.00</td>
<td>4.79</td>
<td>0.90</td>
<td>0.766</td>
</tr>
<tr>
<td>Speech Volume</td>
<td>3.93</td>
<td>4.68</td>
<td>1.93</td>
<td>0.175</td>
</tr>
<tr>
<td>Word Complexity</td>
<td>3.60</td>
<td>3.47</td>
<td>0.04</td>
<td>0.842</td>
</tr>
<tr>
<td>Speech Disturbances</td>
<td>2.60</td>
<td>3.84</td>
<td>6.43</td>
<td>0.017</td>
</tr>
<tr>
<td>Ease of Teaching</td>
<td>3.20</td>
<td>4.11</td>
<td>2.47</td>
<td>0.127</td>
</tr>
<tr>
<td>Instructional Quality</td>
<td>3.80</td>
<td>4.53</td>
<td>1.79</td>
<td>0.191</td>
</tr>
</tbody>
</table>