

THE EFFECTS OF TRANSLATION AND SEX ON HYPNOTIZABILITY TESTING

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Abstract

We compared hypnotizability between two samples from different universities in Sweden. One test was administered in Swedish (University of Skövde) using a translated Swedish version of the HGSHS:A (Bergman, Trenter and Kallio, 2003). At Lund University, the original English version of the HGSHS:A (Shor and Orne, 1962) was used and participants also completed the Inventory Scale of Hypnotic Depth (ISHD; Field, 1965). The results suggest that administering the HGSHS:A in English to Swedish University students may only slightly reduce hypnotizability scores. Because the HGSHS:A was designed to be used for the initial screening of hypnotic suggestibility, for most practical purposes the original version seems a valid choice among non-English groups fluent in English. The data also support some recent findings about females exhibiting higher objective and subjective hypnotizability scores than male volunteers. Copyright © 2007 British Society of Experimental & Clinical Hypnosis. Published by John Wiley & Sons, Ltd.

Key words: gender effect, hypnotizability, translation

As English has become the *lingua franca* in many Western countries, an important practical issue is the extent to which translations of hypnotic instruments are necessary in countries with essentially bilingual populations. Although citizens of some European countries (e.g. Romance language countries) are not so often fluent in English, in Scandinavian and other North-European countries English is taught from an early age and the majority of individuals with some years of formal education are fluent in it. Thus, it is pragmatic to ask whether all or even most hypnotizability assessment instruments should be translated into the native languages of the latter countries, and to what extent data obtained with original English versions of these instruments are comparable to those obtained with translations.

Another matter that warrants attention is whether sex has an effect on hypnotizability. Hilgard (1965) noted that it had been long supposed that women are more susceptible than men, probably because of the association between hypnosis and ‘hysteria’, and pointed out that many studies had reported slight but non-significant differences in this direction. Because other studies (e.g. Hilgard, Weitzenhoffer and Gough, 1958; Weitzenhoffer and Weitzenhoffer, 1958) failed to find any support for this hypothesis, he concluded that men and women are equally hypnotizable, although some subtle

differences may exist. Recent studies in Australia (e.g. McConkey, Barnier, Maccallum and Bishop, 1996), Germany (Bongartz, 1985), Spain (Lamas, del Valle-Inclán, Blanco and Díaz, 1989), Romania (David, Montgomery and Holdevici, 2003) and Finland (Kallio and Ihamuotila, 1999) did not find sex differences in hypnotizability. These publications did not include descriptive statistics for hypnotizability across sexes to evaluate any possible trends, but unpublished data from the Finnish study shows men scoring lower than women on the Harvard Group Scale of Hypnotic Susceptibility, Form A (HGSHS : A [Shor and Orne, 1962]; $M = 7.1$ [$SD = 2.9$] and $M = 7.6$ [$SD = 2.6$], respectively).

Various other studies have reported small but significant differences in favour of women's greater hypnotizability. Bowers (1971) found sex to be a moderator variable for susceptibility among Canadians, with women scoring higher than men especially in tasks dealing with perceptual distortions. Rudski, Marra and Graham (2004) conducted a study of US participants ($N = 1872$) tested with the HGSHS : A over a 28-year period. They reported a significant difference between males and females, with women scoring less than half a point higher than men. Page and Green (2007) found the female superiority effect to be slightly more than half a point in a large US sample ($N = 2660$) with a broad age range (17 years up to 41 years of age and above. During the last 15 years, the HGSHS : A has been translated into many European languages. Three normative papers have reported significant sex differences with females scoring higher than males in Danish (Zachariae, Sommerlund and Molay, 1996), Italian (De Pascalis, Russo and Marucci, 2000), and Swedish (Bergman et al., 2003) samples. A characteristic common to most if not all of the aforementioned studies is that, when there is actual information about it, the hypnotist has always been male. In a study with a small Spanish sample in which the hypnotist was a woman (Cardeña, Alarcón, Capafons and Bayot, 1998), females scored higher than males in both objective and subjective measures of suggestibility even with a medium sample size ($N = 60$).

In this study we examine the impact of measuring hypnotizability in participants' second language by contrasting the results of hypnotizability testing conducted in English with a Swedish student sample with data from testing conducted in Swedish with a different sample (Bergman et al., 2003). Sex differences are also evaluated.

Method

Design

We compared hypnotizability data obtained at Lund University in Sweden (sample 1), using the original English version of the HGSHS : A with data obtained from a previous project using a valid and reliable Swedish translation of the HGSHS : A at the University of Skövde in Sweden (sample 2; Bergman et al., 2003).

Participants

Through media and Internet announcements, members of Lund University and the surrounding communities were invited to participate, a similar form of recruitment to that used at Skövde. The research at Lund University was approved by the Swedish Federal Human Subjects Agency (Etikprövningsnämnden). For sample 1 (Lund), 186 unpaid participants completed the HGSHS : A, 123 (66.4%) of whom were female. The mean age of the participants was 29.16 (range = 18–66, $SD = 11.00$) and the sample came mostly from the university student population. For sample 2, the HGSHS : A was administered to 291 unpaid volunteers (68.4 % females), with an age range of 15–85 and a mean age of 35.37 ($SD = 13.57$). This sample was divided approximately equally between students

and employed professionals. There was a significant age difference ($U = 20,266$, $Z = 4.47$, $p < 0.001$) between the two samples, possibly reflecting the different sample compositions. Thus, age was used as a covariate in statistical analyses contrasting the two samples.

Procedure

At Lund, participants gave written informed consent and then were administered the HGSHS:A and the Inventory Scale of Hypnotic Depth (ISHD; Field, 1965). Hypnotizability assessment was conducted in English by an experienced male hypnotist with acting experience during five different screening sessions in both large and small groups. Items involving US measurement units (e.g. inches) were converted to the metric system. The testing conducted in Swedish at Skövde used a male actor's live or recorded reading of the instructions (see Bergman et al., 2003).

Instruments

The HGSHS:A is a widely used, valid and reliable group measure of hypnotizability, with a scoring range of 0–12. Scores for the post-hypnotic amnesia item were derived using the Kihlstrom and Register (1984) criterion of having three or less tasks remembered before cancellation of the amnesia suggestion *and* two or more tasks remembered after the cancellation.

The *Inventory Scale of Hypnotic Depth* (ISHD; Field, 1965) is a valid and reliable questionnaire composed of 38 dichotomously-scored items. The ISHD evaluates subjective experiences empirically associated with, but distinct from those measured by, the HGSHS:A. The items fall within three general categories: a) absorption and internal and external unawareness; b) feelings of automaticity and compulsion; and c) discontinuity from normal experience. The ISHD has been employed in research on the hypnotic confusion technique (Stanger, 1995); types of high hypnotizables (Barrett, 1990); the relationship between hypnotizability and mental boundaries (Cardena, 1993); and on hypnotic phenomenology (Cardena, 2005).

Analyses

Between-groups ANOVAs, t-tests and Pearson correlations were conducted with interval data with homogeneous variances, Mann-Whitney with heterogeneous variances; categorical data were analyzed using chi-squared tests. The significance level for all analyses was set at 0.05, two-tailed.

Results

Translation and hypnotizability

Descriptive statistics for the HGSHS:A and ISHD for sample 1 are presented in Table 1. As expected, the ISHD was strongly correlated with the HGSHS:A ($r = 0.83$, $p < 0.01$). Females scored significantly higher than males in the ISHD ($t[1, 178] = -2.15$, $p < 0.05$), but the two groups did not differ on the HGSHS:A ($t[1, 183] = -1.06$, $p = 0.29$).

Whereas age and HGSHS:A scores did not correlate in the Lund sample ($r[183] = -0.01$, $p > 0.1$), they were negatively correlated in the Skövde sample ($r[291] = -0.19$, $p < 0.001$). The difference between these correlation coefficients approached significance ($Z = 1.89$, $p = 0.059$). There was a main effect of sample, with the Skövde sample exhibiting higher scores on the HGSHS:A than the Lund sample ($F[1, 474] = 4.76$, $p < 0.05$, $\eta_p^2 = 0.01$). This effect remained significant after controlling for age ($F[1, 471] = 7.95$,

$p < 0.005$, $\eta_p^2 = 0.02$), with age exhibiting an independent significant effect ($F[1, 471] = 7.82$, $p < 0.005$, $\eta_p^2 = 0.02$). The frequency of successful responses to individual HGSHS:A items was next considered. The two samples were found to yield differential frequencies of successful responses to six suggestions (see Table 2 and Figure 1). A greater percentage of the Skövde sample passed the eye closure, arm immobilization, finger lock and communication inhibition items. In contrast, a greater percentage of the Lund sample passed the moving hands together and posthypnotic suggestion items.

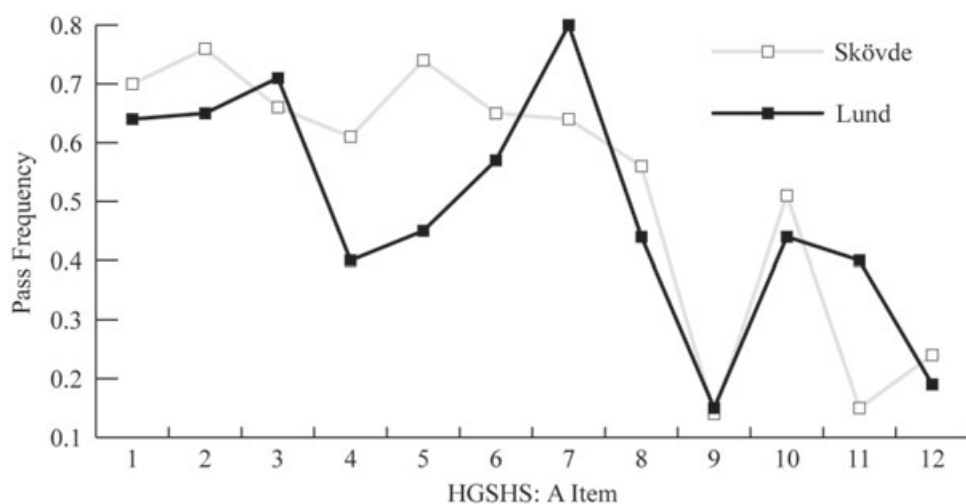
Next, the extent to which administering the HGSHS:A in English affected the frequency of different hypnotizability levels was examined. The two samples were divided into groups of low (0–3), medium (4–8), and high (9–12) hypnotizability. The Lund sample had a comparably larger amount of low hypnotizables and a smaller amount of high hypnotizables (Lund: low: 20%, medium: 62%, high: 18%; Skövde: low: 16%, medium: 63%, high: 22%), but this difference was not statistically significant ($\chi^2(2) = 1.47$, $p = 0.48$). These results suggest that administering the HGSHS:A in English to a Swedish sample may slightly reduce the hypnotizability level of a small percentage of

Table 1. Descriptive statistics for hypnotizability and hypnotic depth measures in the Lund sample as a function of sex

	Lund sample		
	Female <i>M (SD) [n]</i>	Male <i>M (SD) [n]</i>	Total <i>M (SD) [n]</i>
HGSHS:A	5.98 (2.64) [123]	5.53 (2.75) [62]	5.82 (2.68) [185]
ISHD	35.16 (9.14) [119]	31.92 (9.91) [61]	34.06 (9.69) [180]

Table 2. Frequency of successful responses to HGSHS:A items as a function of sample (Lund [$N = 185$], Skövde [$N = 291$])

Item	Sample			
	Lund %	Skövde %	χ^2	<i>P</i>
1 Head falling	64	70	1.84	0.18
2 Eye closure	65	76	6.39	0.011
3 Hand lowering	71	66	1.69	0.19
4 Arm immobilization	40	61	20.70	<0.001
5 Finger lock	45	74	40.32	<0.001
6 Arm rigidity	57	65	3.21	0.07
7 Moving hands together	80	64	12.99	<0.001
8 Communication inhibition	44	56	7.16	0.007
9 Fly hallucination	15	14	0.10	0.75
10 Eye catalepsy	44	51	2.14	0.14
11 Post-hypnotic suggestion	40	15	36.14	<0.001
12 Post-hypnotic amnesia	19	24	1.74	0.19



Graph 1. HGSHS: A item pass frequencies as a function of sample (Lund [$N = 185$], Skövde [$N = 291$]).

the sample, resulting in fewer highs (who likely become mediums) and more lows. Notably, the effect upon high hypnotizables only seems to be in the lower range of high hypnotizability (i.e. HGSHS:A = 9–10), as the percentage of hypnotic virtuosos (HGSHS:A = 11–12) in the Lund sample is actually higher than in the Skövde sample (4% and 2%, respectively).

Sex and hypnotizability

The main effect of translation on HGSHS: A scores remained when sex was included as a covariate ($F[1, 473] = 4.57, p = 0.033, \eta_p^2 = 0.01$), and sex was found to have an independent significant effect, ($F[1, 473] = 13.93, p < 0.001, \eta_p^2 = 0.03$). Bergman et al. (2003) reported that females scored significantly higher than males; while the relationship was in the same direction in the Lund sample, it didn't reach statistical significance ($t[183] = -1.06, p > 0.1$), although it should be borne in mind that the Lund sample was smaller and thus that analysis had less power.

An examination of the relationship between sex and hypnotizability level frequency in the Lund sample (females: 21 low, 79 medium, 23 high; males: 15 low, 36 medium, 11 high) did not yield a significant effect, ($\chi^2[2] = 1.35, p > 0.1$), but it was significant for the Skövde sample (females: 19 low, 131 medium, 49 high; males: 29 low, 51 medium, 12 high; $\chi^2[2] = 23.52, p < 0.001$) as well as for the combined samples ($\chi^2[2] = 19.54, p < 0.001$), showing differences especially in the distribution of highs and lows.

Discussion

The negative correlation between age and hypnotizability is consistent with a study finding a decrease in hypnotizability from 17 to 40 years of age (Page and Green, 2007). Scores using the standard English version of the HGSHS:A were slightly lower than those using a Swedish translation, but were actually higher than the original norms for this instrument (5.25; Shor and Orne, 1962). It is noteworthy that the effect size for the differences between the two samples in this study is very small, with language of

administration accounting for approximately one per cent of the variance in responses. Thus, it seems that using hypnosis measures in English with an educated Swedish cohort, and probably with other samples from bilingual countries, will have a negligible effect on hypnotizability for most practical purposes.

The data support a sex effect within the Swedish population similar to that found with samples in other Western countries. Females tend to score higher than males in objective and subjective measures. Rudski et al. (2004) suggested that a personality trait such as reactance may explain this difference. Although that may be the case, we are unlikely to arrive at a resolution of this issue until we systematically evaluate the effect of the sex of the hypnotist on hypnotizability testing. Considering the study by Cardeña et al. (1998) in which a sex effect was found with a female hypnotist even with a modest sample size, we hypothesize that the sex effect may interact with the sex of the hypnotist. Although the notion that hypnotizability is mostly produced by powerful hypnotists is false, it is likely to be equally false that demographic and other hypnotist characteristics have no bearing on hypnotic response (Barber, 1999). Hilgard (1965) did not consider the sex of the hypnotist as a possible interactive variable, but general psychological research suggests otherwise. We are unaware of studies that have systematically evaluated the effect of hypnotist sex on hypnotizability, but there is ample evidence that this variable can affect performance in psychological experiments (Silverman, 1974). This effect can be 'passive' (participants may react differently to experimenters' characteristics), 'active' (experimenters may react differently to participants), or both. In the case of group testing, probably most of the potential effect is 'passive', whereas in individual testings both active and passive effects could be at work. Further research is needed to examine the influence of participants' and hypnotists' sex upon hypnotizability.

Acknowledgement

This project was made possible by grant #150-04 from the Bial Foundation to the first author. We thankfully acknowledge the editorial assistance of Caroline Watt, PhD.

References

- Barber TX (1999) A comprehensive three-dimensional theory of hypnosis. In: I Kirsch, A Capafons, E Cardeña-Buelna, S Amigo (eds) *Clinical Hypnosis and Self-regulation: Cognitive-behavioral Perspectives*. Washington, DC: American Psychological Association, 21–48.
- Barrett D (1990) Deep trance subjects: a schema of two distinct subgroups. In: RG Kunzendorf (ed.) *Mental Imagery*. New York: Plenum Press, 101–12.
- Bergman M, Trenter E, Kallio S (2003) Swedish norms for the Harvard Group Scale of Hypnotic Susceptibility, Form A. *International Journal of Clinical and Experimental Hypnosis* 51: 348–56.
- Bongartz W (1985) German norms for the Harvard Group Scale of Hypnotic Susceptibility, Form A. *International Journal of Clinical and Experimental Hypnosis* 33: 131–40.
- Bowers KS (1971) Sex and susceptibility as moderator variables in the relationship of creativity and hypnotic susceptibility. *Journal of Abnormal Psychology* 78: 93–100.
- Cardeña E (1993) Hypnotizability and mental boundaries. A correlational study. *International Journal of Clinical and Experimental Hypnosis* 41: 331.
- Cardeña E (2005) The phenomenology of deep hypnosis: quiescent and physically active. *International Journal of Clinical and Experimental Hypnosis* 53: 37–59.
- Cardeña E, Alarcón A, Capafons A, Bayot A (1998) Effects on suggestibility of a new method of active-alert hypnosis. *International Journal of Clinical and Experimental Hypnosis* 46: 280–94.

- David D, Montgomery G, Holdevici I (2003) Romanian norms for the Harvard Group Scale of Hypnotic Susceptibility, Form A. *International Journal of Clinical and Experimental Hypnosis* 51: 66–76.
- De Pascalis V, Russo P, Marucci FS (2000) Italian norms for the Harvard Group Scale of Hypnotic Susceptibility, Form A. *International Journal of Clinical and Experimental Hypnosis* 48: 44–55.
- Field PB (1965) An inventory scale of hypnotic depth. *International Journal of Clinical and Experimental Hypnosis* 13: 238–49.
- Hilgard ER (1965) *Hypnotic Susceptibility*. New York: Harcourt, Brace and World.
- Hilgard ER, Weitzenhoffer AM, Gough P (1958) Individual differences in susceptibility to hypnosis. *Proceedings of the National Academy of Sciences* 44: 1255–9.
- Kallio S, Ihamuotila MJ (1999) Finnish norms for the Harvard Group Scale of Hypnotic Susceptibility, Form A. *International Journal of Clinical and Experimental Hypnosis* 47: 227–35.
- Kihlstrom JF, Register PA (1984) Optimal scoring of amnesia on the Harvard Group Scale of Hypnotic Susceptibility: Form A. *International Journal of Clinical and Experimental Hypnosis* 32: 51–7.
- Lamas JR, del Valle- Inclan F, Blanco MJ, Diaz AA (1989) Spanish norms for the Harvard Group Scale of Hypnotic Susceptibility, Form A. *International Journal of Clinical and Experimental Hypnosis* 37: 264–73.
- McConkey KM, Barnier AJ, Maccallum FL, Bishop K (1996) A normative and structural analysis of the HGSHS: A with a large Australian sample. *Australian Journal of Clinical and Experimental Hypnosis* 24: 1–11.
- Page RA, Green JP (2007) An update on age, hypnotic suggestibility, and gender: a brief report. *American Journal of Clinical Hypnosis* 49: 283–7.
- Rudski JM, Marra LC, Graham KR (2004) Sex differences on the HGSHS: A. *International Journal of Clinical and Experimental Hypnosis* 52: 39–46.
- Shor RE, Orne EC (1962) *Harvard Group Scale of Hypnotic Susceptibility, Form A*. Palo Alto, CA: Consulting Psychologists Press.
- Silverman I (1974) The experimenter: a (still) neglected stimulus object. *Canadian Psychologist* 15: 258–70.
- Stanger TM (1995) The impact of a confusion technique on hypnotic responsivity in low-susceptible subjects. *Dissertation Abstracts International: Section B: The Sciences and Engineering* 55(7-B): 3028.
- Weitzenhoffer AM, Weitzenhoffer GB (1958) Sex, transference and susceptibility to hypnosis. *American Journal of Clinical Hypnosis* 1: 15–24.
- Zachariae R, Sommerlund B, Molay F (1996) Danish norms for the Harvard Group Scale of Hypnotic Susceptibility, Form A. *International Journal of Clinical and Experimental Hypnosis* 44: 140–1.

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