Interactive effects of shoe style and verbal cues on perceptions of female physicians' personal attributes

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Structured Abstract

OBJECTIVE: To determine whether shoe style has any effect on perceptions of a female physician's personal characteristics when viewed alongside a transcript of a short outpatient consultation.
PARTICIPANTS: Thirty postgraduate students of management or computer science. Twenty-five questionnaires were actually completed.
DESIGN: Respondents were randomly assigned to one of three groups, balanced for gender. Each group saw one stimulus combination: consultation transcript only; transcript combined with photograph of 'physician' wearing "conservative" black boots; transcript combined with photograph of 'physician' wearing "trendy" multicoloured boots. All participants completed the same questionnaire.
MAIN OUTCOME MEASURES: Perceptions of the physician's approachability, professional image, ability to empathize with the patient, and amount of specialist experience, measured using five-point scales.
RESULTS: When viewed with the consultation transcript, perceptions of the physician wearing "trendy" multicoloured boots showed no significant difference from those of her wearing "conservative" black boots. There was a near-significant effect for approachability, with the physician in black boots being more approachable than the physician in multicoloured boots (p=0.0630). When viewed with the consultation transcript, perceptions of the physician wearing either "trendy" multicoloured boots or "conservative" black boots showed no significant difference from perceptions based on the the consultation transcript alone.
CONCLUSIONS: Shoe style does not appear to influence perceptions of female physicians when combined with verbal cues. However, the research requires replication with a larger sample. The incorporation of qualitative response and/or multimodal videotaped stimuli may improve study designs in this area.

Key Words (MEDLINE): Shoes; Clothing; Nonverbal Communication; Language; Social Perception; Physicians, Women

1. Introduction

Research on the effects of clothing on judgements of personal attributes has yielded rather conflicting evidence. A large number of studies conducted in the USA have suggested that the clothing worn by professionals such as therapists, educators, counsellors and businesspeople does influence client perceptions of their qualifications and personality (1, 2, 3, 4). However, other studies have shown negative or inconclusive results (5, 6).

One problem with studies in this area is that they have tended to involve rating several differently clothed models sequentially (7, 8, 9). Although this is difficult to avoid in certain kinds of comparative research, such a situation poorly mirrors actual life situations, where one normally forms an impression about a single individual with whom one comes into contact. Thus, in our study, we have attempted to control for this "comparison" effect by having the subjects rate only one stimulus each.

The interaction between clothing cues and verbal communication has not yet been sufficiently explored. Many studies on attire and person peception (e.g. Lennon & Miller's study (7)) require the respondents to rate a person on the basis of a drawing or photograph alone, without any accompanying verbal cues. Some studies have combined clothing with verbal material, but they have been in the minority. Sondermeyer (10) examined the interactive effects of clothing and powerful/powerless speech styles and found these to be significant; Patton (11) combined clothing with a text and other non-verbal cues in a study of perceived credibility; and Lennon (7) employed a recording of a marketing meeting as a stimulus in her study of the perception of businesswomen. A number of further studies (e.g. Barrett's study (4)) have also combined clothing and verbal interaction, but, as their verbal elements have not been pre-scripted, they have not been able to control fully for the content or style of the language used during the interaction. In our study, we have followed the examples of Sondermeyer, Patton and Lennon by employing a single transcript of a prior medical consultation.

Our study has been carried out in the context of a larger ongoing project focussing especially on the role of footwear in apparel-based non-verbal communication. In most clothing studies, the effect of shoe styles on the perception of people has not been systematically assessed, although Lennon & Miller (8) found that "experimental" shoe style and boots were among seven significant physical appearance cues in impression formation. In our study, we have explicitly manipulated shoe style as the independent variable.

In the medical context, the vast majority of research publications have been concerned with physicians wearing formal/informal attire rather than with their footwear. Those studies that did take into account physicians' shoes discovered that dress shoes as part of formal attire were largely preferred by patients to sandals, clogs and, in some studies, sports shoes (12, 13, 14, 15, 16, 17, 18). Gonzalez Del Rey & Paul (15), for instance, found in their survey that the majority of parents/guardians of pediatric patients in the emergency department of an American hospital would choose physicians dressed most formally in a white laboratory coat, dress shoes, and a tie, while physicians wearing no white laboratory coat, no tie, and tennis shoes were least preferred with 84% of the subjects actually disliking physicians in tennis shoes. Interestingly, formal attire was associated with "professional appearance" in 64% of the responses in Gonzalez Del Rey & Paul's study.

However, some other studies were not as negative, and even positive, about physicians' wearing sports/tennis shoes. For example, Dunn et al (13) revealed that only 27% of their subjects, composed of patients on the general medical services of teaching hospitals in Boston and San Francisco, believed that physicians should not wear tennis shoes. In an Israeli study, family physicians wearing sports shoes, both male and female, were ranked highly by the patients (19). Interestingly, two of these studies (15, 19) reported that physicians' attire had no influence on the patients' perception of physicians' competence and did not really matter to most patients.

Our small-scale study aims to establish the extent to which shoe style, when combined with a verbal transcript of a consultation, affects people's judgements of a female physician's personal attributes.

2. Hypotheses

The following two null hypotheses (H$_0$) were set up:

2.1   *When combined with verbal cues, perceptions of a female physician wearing "trendy" multicoloured boots and one wearing "conservative" black boots will show no significant difference.*

2.2   *When combined with verbal cues, perceptions of a female physician wearing "trendy" multicoloured boots or "conservative" black boots will show no significant difference from perceptions based on the verbal cues alone.*

3. Materials and Method

3.1 Subjects

By circulating currently registered postgraduate students in the Management School and Department of Computing at Lancaster University, we recruited an initial volunteer pool of thirty-eight respondents. Fifteen respondents were female and twenty-three were male. The respondents were divided into male and female subsamples, and fifteen respondents from each gender were randomly selected for inclusion in gender-balanced quota samples for each of three experimental stimulus combinations. For each stimulus combination, ten subjects (five male and five female) were selected. Twenty-five of the thirty selected respondents actually returned questionnaires.

3.2 Stimuli

All respondents saw a transcript of a short medical consultation. This was on the subject of a mole which is suspected of possible malignant development. The consultation text formed a distinct part of a longer, real-life consultation contained in the British National Corpus, a one-hundred-million-word collection of samples of spoken and written British English, dating mostly from the early 1990s (20). Small amendments were made to make it easier for non-linguist respondents to read: overlapping speech was turned into neater, drama-like turns; untranscribable speech was omitted or replaced; and anonymization markers were replaced by fictitious names. To give the impression of a discrete consultation, brief opening and closing gambits were also added. To enable us to ask about "amount of specialist experience" as a variable, we transferred the setting from a family practice surgery to a specialist outpatient clinic. The original and revised versions of the consultation text are reproduced at Appendix A.

We also arranged for a model in her mid-thirties to pose for two photographs. In the study, the model was identified as the physician who conducted the consultation. In both photographs, the model was conservatively dressed in a dark blue top and knee-length skirt. She sat cross-legged with the raised foot pointing towards the camera, and an upwards camera angle from floor level was used so that her footwear was strongly foregrounded. One group saw the model wearing a pair of black calf-length stretch boots with square toes and a medium block heel, whilst the other group saw her wearing a very unusual pair of knee-length boots with a stiletto heel and a pointed toe that were made in a patchwork effect of beige, medium- and dark-brown leather. We considered the black boots to represent a relatively "conservative" shoe style and the multicoloured boots an experimental, "trendy" style. The model's pose and the camera angle were kept as similar as possible for both pictures.[1]

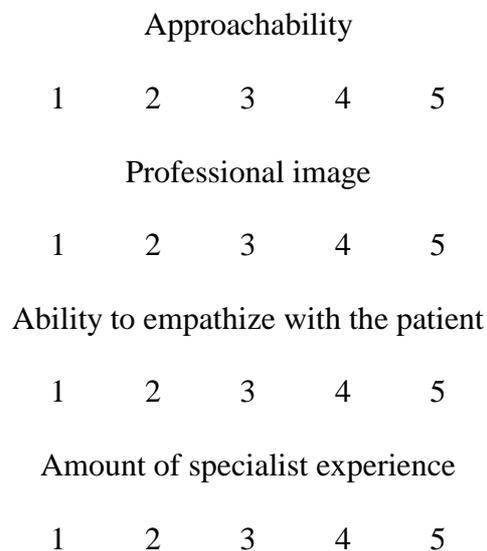[1] We agreed with the model not to publish the photographs of her.

3.3 Design and procedure

As noted in 3.1, thirty respondents from our initial pool were assigned randomly to three groups of ten (one for each stimulus combination), with each group balanced equally for gender. Each respondent saw only one stimulus combination. One group saw only the transcript of the consultation, with no supplementary photograph. The second group saw the transcript along with the photograph of the model wearing the black stretch boots. The third group saw the transcript along with the photograph of the model wearing the multicoloured brown boots. When viewing a transcript-photograph combination, attention was explicitly drawn to the photograph as well as the text (see Appendix B). Each respondent was sent, by e-mail, the URL of the relevant stimulus combination and completed the accompanying set of rating scales online using a web browser. The data were collected anonymously by means of a CGI script.

3.4 Rating scales

After viewing the transcript (and photograph, where relevant), respondents were asked to rate the physician on four five-point scales: "approachability", "professional image", "ability to empathize with the patient", and "amount of specialist experience" (Fig. 1). Three of these dimensions were adapted from previous research on attire and person perception in the medical context: the scales for "professional image" and "ability to empathize" were based on the variables of "professionalism" and "caring" in Waddington's report (21), whilst the scale for "amount of specialist experience" was based on the variable "length of training" in Hennessy, Harrison & Aitkenhead's study (16). The dimension of "approachability" was selected as a general social variable. In each case, 1 was the highest rating (e.g. "very approachable") and 5 was the lowest rating (e.g. "very unapproachable").

Figure 1: Rating scales

Approachability

1   2   3   4   5

Professional image

1   2   3   4   5

Ability to empathize with the patient

1   2   3   4   5

Amount of specialist experience

1   2   3   4   5

4. Results

Twenty-five of the thirty respondents actually completed the questionnaire. These responses broke down as follows: nine respondents saw the transcript and the photograph of the model wearing the multicoloured boots, nine respondents saw the transcript only, and seven respondents saw the transcript and the photograph of the model wearing the black boots.

Hypothesis 2.1: *When combined with verbal cues, perceptions of a female physician wearing "trendy" multicoloured boots and one wearing "conservative" black boots will show no significant difference.*

With α set at 0.05, a series of two-tailed Mann-Whitney U-tests (Table 1) showed no significant differences on any perceptual dimension between the model wearing the multicoloured boots and the model wearing the black boots. We were thus unable to reject the H_0 that, when combined with verbal cues, the choice of "trendy" multicoloured boots versus "conservative" black boots does not lead to different perceptions of a female physician's personal attributes. However, the comparison on approachability came very close to significance, with the physician in the black boots being rated more approachable than the physician in the multicoloured boots.

Table 1: Mann-Whitney U-tests: comparison between model wearing multicoloured boots and model wearing black boots

Dimensions	Z	p (2-tailed)
Approachability	-1.8593	0.0630
Professional image	-0.5054	0.6133
Ability to empathize with the patient	-0.4914	0.6232
Amount of specialist experience	-0.3858	0.6996

Hypothesis 2.2: *When combined with verbal cues, perceptions of a female physician wearing "trendy" multicoloured boots or "conservative" black boots will show no significant difference from perceptions based on the verbal cues alone.*

A Kruskal-Wallis non-parametric one-way analysis of variance (with α set at 0.05) showed no significant between-groups differences for any of the four rating scales (Table 2). We were thus unable to reject the H_0 that there is no interactive effect of shoe style with verbal communication on people's perceptions of a female physician.

Table 2: Kruskal-Wallis non-parametric one-way ANOVA test results: Comparison of groups viewing transcript only, transcript plus photograph of model in black boots, and transcript plus photograph of model in multicoloured boots

Dimensions	χ^2_{K-W}	p
Approachability	4.1778	0.1238
Professional image	0.3321	0.8470
Ability to empathize with the patient	0.3061	0.8581
Amount of specialist experience	0.4178	0.8115

5. Discussion

Although previous research (4, 18) has demonstrated that the clothes worn by a therapist can influence client perceptions of the therapist's credibility and even affect treatment outcome, our experiment does not seem to support this view, at least in relation to footwear. In regard to the interactive effects of shoe style and verbal communication, our experiment did not produce any significant results, despite earlier findings by Sondermeyer (10), who analysed the interactive effects of clothing and powerful/powerless speech styles and discovered significant main effects of

speech style and attire and an interaction between speaker sex, gender of subject, and perception of speech style and attire.

Only one comparison came remotely close to statistical significance, and that was the comparison between the mulitcoloured and black boots on the dimension of approachability. It seems that the respondents found the model dressed in the more conservative black boots somewhat more approachable than the model dressed in the trendier, more unusual multicoloured boots. However, we cannot say, on the basis of these data, which element(s) of the boots (e.g. colour, leg length, heel height, etc.) led to this result.

As well as enlarging our small sample size, there are two aspects of the experimental design which further research may wish to address.

Firstly, the respondents were placed in the rather unnatural situation of looking at a text alongside a still photograph of a person, when, in reality, interaction is a multimodal activity. This has also been the case in other studies, such as Sondermeyer's dissertation (10). Even when the text has been presented as audio, as in Lennon's experiment (7), the model has tended to remain a still figure. A better solution might be to show respondents video recordings of consultations with the model wearing different clothes. However, this would require very good acting abilities on the part of the model, in order to ensure realism and that other cues – both linguistic (e.g. intonation) and non-verbal (e.g. body posture) – are kept as similar as possible across different recordings.

Secondly, it might be valuable to make use of open-ended response data in any replication study. Although we are strong supporters of the content analysis of open-ended responses (22), we chose not to employ it in this pilot study owing to the need of quantifying effects with a rather small number of respondents. However, it may be that respondents *do* have different perceptions of the "physician"'s characteristics under the different stimulus conditions, but that these simply did not correspond to the dimensions which we, as researchers, selected. Content analysis of open responses would be able to identify the respondents' own perceptions of the physician, but it would probably require a fairly large sample in order to show any systematic difference between stimulus combinations. A compromise might be found in a two-stage study, with the dimensions extracted from an initial qualitative stage (e.g. interview or focus group) and then operationalized as scales for a quantitative analysis.

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Appendix A – Consultation transcript

Original BNC version:

Mrs <gap reason=anonymization desc="last or full name">.
Alison 75 I wonder if I could show you a mole?
PS212 <laugh>
Alison 76 I've got, I feel as if it's getting <unclear> and I don't know if it's erm to be <-|-> <unclear> <-|->
PS212 <-|-> <unclear> <-|->
Alison 77 I've had it for years and never bothered
PS212 78 Aye, I know but <unclear> they change.
79 Let's look.
80 <pause> Yeah.
81 It's starting to get black at one side alright <-|-> <unclear> <-|->
Alison 82 <-|-> You see I <-|-> cannot not see it <-|-> <unclear> <-|->

PS212 83 <-|-> No. <-|->
Alison 84 but I just felt it
PS212 85 Right.
Alison 86 something's up.
 87 I'm not scratching it because I can't scratch it <-|-> but <-|->
PS212 88 <-|-> No. <-|->
Alison 89 I'm worried about it.
PS212 90 Yeah.
 91 Well I think you better get this seen to.
 92 It's, there's a tiny wee corner at the top there where the colour's changing.
Alison 93 Is it?
PS212 94 And there's another wee bit there.
 95 Aye.
 96 Get it off.
Alison 97 Right.
PS212 98 Get it off. <voice quality: whispering> <unclear> <end of voice quality> <pause>
Alison 99 <cough> <pause> I've been going to come up about it and g--
PS212 100 Aye.
 101 It's, och aye, it's one of these things.
Alison 102 Do you think it <-|-> <unclear> <-|->
PS212 <-|-> <unclear> <-|->
Alison 103 I've had it for all this time, I hope.
PS212 104 Yeah.
 105 <-|-> Well it wouldn't make <-|->
Alison <-|-> <unclear> <-|->
PS212 106 any difference.
 107 Now, all I need for you to go and see the skin specialist and <whistling> get it in the bucket and <-|-> then there's <-|->
Alison 108 <-|-> Right. <-|->
PS212 109 no worry about it.
Alison 110 <-|-> Okay then. <-|->

Edited study version:

Doctor: Hello Mrs Brown. Sorry to have kept you waiting a wee while. We're running a little bit behind today.
Patient: Not at all, no worries.
Doctor: Now then, let's see. Your GP's sent you to us to have a look at a mole that's been worrying you. That's right, isn't it?
Patient: Yes. I feel as if it's getting itchy and I don't know if it's meant to be. I've had it for years and never bothered.
Doctor: Aye, I know, but they do change. Let's have a quick look. Yeah. It's starting to get black at one side alright.
Patient: You see, I cannot see it. I just felt it and thought: "something's up". I'm not scratching it because I can't scratch it, but I'm worried about it.
Doctor: Yeah. Well, I think we'd better see to this. There's a tiny wee corner at the top there where the colour's changing.
Patient: Is it?
Doctor: Yeah, and there's another wee bit there. Aye. Get it off.
Patient: Right. I've had it for all this time, I hope.

Doctor: Yeah, well it wouldn't make any difference. Now, all I need for you to do is to come through with me to the treatment room and we'll get it in the bucket and then there's no worry about it.
Patient: Right. Okay then.
Doctor: Okay. Would you like to come through then?

Appendix B – Instructions to participants

For the transcript-only group:

INSTRUCTIONS: The text below is an extract from a dermatology out-patient consultation (skin clinic) between Dr Alison Westbrook and Mrs Muriel Brown. (Names have been changed.) Please read the text and answer the questions which follow.

For the transcript-photograph combination groups:

INSTRUCTIONS: The text below is an extract from a dermatology out-patient consultation (skin clinic) between Dr Alison Westbrook and Mrs Muriel Brown. (Names have been changed.) We took the accompanying photograph of Dr Westbrook in the doctors' rest room just after she had finished the clinic. Please read the text, look at the photograph, and answer the questions which follow.