

Do First Impressions Count? Perceived Nonverbal Behaviors Associated with Social Acceptance in University Students

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Abstract

This study aims to analyze the relationship between non-verbal behavior of social interaction and acceptance and rejection in college, making sure that there are differences from beginning to end of the half as the acceptance and social rejection to study and do well as nonverbal behaviors evaluated at the beginning of the semester remains similar to the final acceptance and rejection in these assessments. They studied 175 college students of business schools (56.5%) and logistics of a large university in São Paulo, with 41% women. All of these students responded to the tests at the beginning and the end of June after signing the consent form. About 35% of the subjects were in the second year of their courses and students participated in the research first to seventh year of their courses. It developed a protocol in which it asks the student indicate a person who would like to study in the group and justify your choice from your perception of that person in nonverbal behaviors, namely, the look, voice content, voice quality, gestures hands, smile, body posture, tone of voice. In general, analyzing the behavior alone, they did not show differences in the perception of the beginning to the end of semester. However, how these were listed as reasons for the acceptance and social rejection to study and come out changed the beginning to the end of term, indicating that the coexistence of a semester enables a change in accepted motives and social rejection in the group.

Keywords

First Impressions, Nonverbal Behavior, Educational Psychology, College

1. Introduction

Latha (2014) believes communication to be the transference of information to

one person to another; as such, people spend 75% of their time in interpersonal communication, a significant part of which is nonverbal (body movements, eye contact, facial expressions). In fact, nonverbal communication refers to the transference of meanings through body language, space, time and paralinguistic elements, other than written or spoken language. Nonverbal communication is essentially less structured than verbal, non-linear, spontaneous and complementary to speech (Kouros & Cummings, 2011).

Personal appearance, including the way people dress, is one of the basis for first impressions, even before we introduce ourselves. Body posture, defined as the body position of the other, is different from gestures (the actual movements) and refers to how we place and keep our body, as well as the body fitness, related to feelings, personality traits such as trust, openness, or submission, and must correspond to context or situation's normal expectancy (Latha, 2014). Body gestures are movement performed with a member, especially the hands, to express, confirm, emphasize, or follow an attitude or intention. Gestures are signs of body language and are emblematic as the signs of good-bye, or the victory "V", for example. Facial expressions are also important nonverbal communication channels as they constantly change and are constantly monitored during communication. Eye movements involved in facial expressions are important aspects of nonverbal elements and the frequency of visual contact may suggest interest or boredom, or even suggest treason or deceit (Aviezer, Trope, & Todorov, 2012; Kouros & Cummings, 2011; Latha, 2014). About 93% of communications are nonverbal, being 38% attributed to nonverbal signs such as voice volume, pitch, speed, and 55% to visual contact (Gallo, 2007; Neuliep, 2003).

Part of those behaviors' processing is not conscious. While talking to someone, conscious thinking is alert to words and verbal communication to respond, as nonverbal elements are subconsciously processed. That is the way mirror neurons adapt in order to send information and to alert whether there is something wrong with the communication, as mirror neurons are involved in survival strategies, helping humans sharing knowledge, learning art, fights or compassion based in others' body language (Reiman, 2008).

Every time a person meets another one, a first impression is created, consisting in initial judgements based on nonverbal communication signs. Bierman & Wargo (1995) explain that Todorov and Willis' studies pioneered in revealing that an impression from a strange face takes a tenth of a second to be formed and prolonged exposure will not significantly alter those impressions (Mcaleer, Todorov, & Belin, 2014; North, Todorov, & Osherson, 2012; Stewart, Ajina, Getov, Bahrami, Todorov, & Rees, 2012). Based on that, the social preferences, confidence and wish to keep interactiong with people are defined. Actually, people make relatively precise assessment in less than one-minute observations and as such, people must prove themselves decent, genuine, and trustful via one tenth of a second nonverbal communication, otherwise the interaction might not persist (Kouros & Cummings, 2011).

Previously to verbal communication, human beings make judgements to as-

sure survival; in fact, accurate first impressions might be done to allow survival. Kouros and Cummings (2011) indicate a series of questions that must be answered to understand first impressions, such as why do we use first impressions and how do we do it; are they precise; are there people who perform better than others in first impressions do?

Many cognitive aspects are involved to facilitate specific ways of adjustment to social behaviors (Bartholomeu & Montiel, 2013). As social interactions evolved, new benefits and threatens appeared and early cognitive detection alert against possible damages. Cummings (2011) suggests that first impressions tend to be more negative, as primarily the basic psychological mechanisms might be related with danger detection, that are neutralized when potentially hazardous intentions are inferred. Therefore, negative impressions persist even with contradictory information, and positive impressions require more evidence and can even be reverted to negative with additional information (Bartholomeu, Carvalho, Silva, Miguel, & Machado, 2011). The tendency to form simple and quick first impressions is instinctive and consequently, individual differences are difficult to establish (Ambady & Skowronski, 2008). People who are more precise in developing first impressions are less prone to depressive symptoms, less social anxiety, and shyness; they also are more socially competent, opened to experiences, confident, more expressive, and communicative. Another feature is empathy, as they are more capable to establish precise peers' body language, as well as considered sources of advice and safety, warm, compassionate, less hostile and less rebellious (Ambady & Skowronski, 2008; Blake, Kim & Lease, 2011; Funder & Harris, 1986; Kudesia & Elfenbein, 2013). It is interesting to observe that the ability of forming first impressions is not correlated to inteligence, but with nonverbal communication knowledge, related to social intelligence (Borod, Pick, Hall, Sliwinski, Madigan, Obler, Welkowitz, Canino, Erhan, Goral, Morrison, & Tabert, 2000; Davitz, 1964; Davis & Kraus, 1997).

Kraus, Oveis, Allison, Young, Tauer and Keltner (2014) examined group hierarchy and suggested that subjects acquire respect and admiration when involved in behaviors that affect others' judgements related to group values. Tetlock (1983) observed that people's attribution is affected by pressures in justifying impressions and decrease the primary effects of subjects' first perception, affecting the way people decode and process information. Dockrell and McShane (2000) analyzed the effects of nonverbal cues and first impressions in interviews, and results showed a significant interaction between the kind of interview and nonverbal cues, especially in non-structured interviews.

Studies focusing on impressions and nonverbal behaviors are more frequent in business and marketing (Kudesia & Elfenbein, 2013), but more restrict in Education (Ames, 2008; Greenfield & Quiroz, 2013; Titkova, Ivaniushina, & Alexandrov, 2013; Wentzel, 2009). No studies relating nonverbal behaviors to sociometry (social acceptance and rejection in school) were identified, as well as studies investigating the consistence of first impressions in school contexts, and university students.

Following the assumptions previously described, this study aimed to verify the relations between acceptance and rejection in university students based on non-verbal behavior, since they have a strong impact on the formation of first impressions in social relations. Thus, we tried to compare the impressions formed at the beginning and end of the semester regarding acceptance and rejection to study and leave university students.

2. Method

2.1. Participants

The sample consisted of 175 students, female (41%) and male (59%) enrolled in business administration (56.5%) and logistic courses at a São Paulo (Brazil) Metropolitan area University, assessed at the beginning and the end of term. Participants came from first to 7^{th} periods of their courses.

The choice of these classes was due to the fact that they attended a common core discipline taught at the university, in which students of different grades participated and they did not attend the same rooms before entering this discipline. This course was taught in two classes containing 80 and 95 students, respectively.

2.2. Instruments

Checklist of Nonverbal Behaviors

This measure seeks to capture the acceptance or rejection of a student by his or her peers. For this, it was first requested that each participant nominate a colleague who would choose to study. The participant should justify his/her response from the perception of the person chosen in non-verbal behaviors, such as the look, voice content, voice quality, hand gestures, smile, body posture, tone of voice (Caballo, 2000). Each behavior was rated on a scale of 1 to 5, with "1" being a perception of that behavior as being inappropriate and "5" adequate. This procedure was applied to the positive choices, that is, acceptance to estuar and leaving and negative, namely, rejection in these same situations.

2.3. Procedures

Students responded to the "Checklist of Nonverbal Behaviors" at the beginning of the semester, when they did not know each other yet. After 6 months, the procedure was repeated with the same participants. Each application lasted an average of 20 minutes.

3. Results and Discussion

Firstly, results from the protocols at the beginning of the term and its end in terms of acceptance and rejection to "study with" and "hang out with" were compared. The analyzes were carried out in the software Statistical Package for Social Sciences (SPSS), version 20. **Table 1** shows descriptive statistics for the acceptance situation of "study with".

Coefficients ^a									
Ŋ	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics		
		В	Std. Error	Beta		0	Tolerance	VIF	
	(Constant)	0780	0336		2.324	0021			
	Posture	0258	0087	0262	2.974	0003	0591	1.692	
22	Gesture	-0204	0096	-0199	-2.118	0035	0519	1.926	
22	Speed	0182	0078	0194	2.345	0020	0669	1.495	
	Content	0181	0094	0181	1.934	0055	0527	1.898	
	Personal Attention	-0147	0081	-0173	-1.810	0072	0502	1.994	
		^a Deper	ndent Varia	ble: acceptance	-studying	with			

Table 1. Nonverbal behaviors predictive of acceptance to "study with" (beginning of term).

Source: Prepared by the authors.

There were no significant differences in the responses' means of each indicator pretest and posttest, except rejection to "study with", showing more rejection after 6 months. Hence, the answer to "*Do first impressions count?*" seem to be "yes", as every behavior considered by the participants at the beginning of the term were stable after some months of contact. Results are in accordance to literature, as other studies also showed initial perceptions to be stable in time (Bierman & Wargo, 1995; Mcaleer, Todorov, & Belin, 2014; North, Todorov, & Osherson, 2012; Stewart et al., 2012). In addition, rejection being more observed agrees to literature, as evolutionary psychological mechanisms are involved with alert and danger detection (Bartholomeu & Montiel, 2013). The increase of rejection after six months may be explained by the fact that negative impressions are more persistent, even when receiving contradictory information, and positive impressions can be easily transformed in negative ones, when new information appear (Kouros & Cummings, 2011).

However, measure dispersion was high, and correlations between pretest and posttest variables were low, leading to the possibility that many people were not classified in the same way as their classmates, as well as that not all participants who were accepted in pretest had the same assessment in posttest, despite similar means. Thus, a model was created, including measures of nonverbal behavior and acceptance and rejection in the beginning and end of term, to investigate whether the same behaviors would be associated to acceptance and rejection to "study with" and "hang out with" in the beginning (when people did not know each other) and after a period of contact. Analysis employed nonverbal behaviors classified in each period (term beginning and end) as independent variables and acceptance and rejection to "study with" and "hang out with" as dependent variables, using the backward method to insert variables into the model.

Concerning acceptance to "study with" in the beginning of the term, the final statistic significant model included variables posture, gestures, speech speed and content. The observed tendency suggests that a better posture, as well as speech speed and adequate content are associated to acceptance to study with; too many gestures were negatively associated to that variable (F(5, 192) = 4.89; p = 0.000). Acceptance to study with at the end of term was not significantly associated to any nonverbal behavior (F(5, 192) = 2.059; p = 0.093). Therefore, acceptance to study with tended to be associated to a first impression of posture, defined by Latha (2014) as position and maintenance of the body in front of the other, as well as its physical structure, related to personality traits such as trustfulness, openness, or submission. Speech speed and adequate content were also paralinguistic elements related to acceptance in first impression (Greenfield & Quiroz, 2013; Latha, 2014; Titkova, Ivaniushina, & Alexandrov, 2013).

Concerning rejection to "study with" in the beginning of the term, significant variables were speech volume, duration and content; the more adequate the volume and content, the less rejection to "study with" and the higher the speech duration, more rejection was observed (F(5, 192) = 4.72; p = 0.003). At the end of the term, orientation, personal appearance, intonation, speech time and fluent were significant (F(5, 192) = 5.52; p = 0.000).

It seems that, as people meet, paralinguistic elements tended to associate to rejection to "study with" and as interpersonal contact increases, other paralinguistic elements are observed as relevant, such as speech duration, as well as other behavioral features such as orientation and appearance were likely to reduce rejection (Table 2). Apparently, the amount of information gathered with

Beginning of Term									
	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics		
		B Std. Error		Beta		- 0	Tolerance	VIF	
	(Constant)	4.244	0500		8.493	0000			
24	Speech Volume	361	0172	-0160	-2.094	0038	0800	1.251	
24	Speech Duration	.407	0234	0175	1.743	0083	0466	2.147	
	Content	632	0237	-0260	-2.670	0008	0494	2.022	
End of Term									
	Model	Unstandardized Coefficients		Standardized Coefficients	t Sig.		Collinearity Statistics		
		В	Std. Error	Beta	8		Tolerance	VIF	
	(Constant)	4.826	0.572		8.436	0000			
	Gaze	-0430	0231	-0241	-1.863	0066	0492	2.034	
	Orientation	-0598	0240	-0323	-2.496	0014	0492	2.032	
21	Gestures	0857	0225	0489	3.810	0000	0501	1.998	
	Intonation	0628	0279	0383	2.251	0027	0285	3.509	
	Fluence	-0585	0263	-0345	-2.223	0029	0342	2.924	
	Speech duration	-0625	0269	-0362	-2.320	0023	0340	2.945	

Table 2. Nonverbal behaviors predictive to rejection to study with at the beginning of the term and at its end.

contact and more detailed observation of nonverbal behaviors tended to include new elements as justifications for social rejection to "study with" (Kouros & Cummings, 2011).

Acceptance to "hang out with" was significantly related to smile and speech content in the beginning of the (F(5, 192) = 6.20; p = 0.000), as more interesting content minimized the acceptance to hang out with, and smiles tended to increase that acceptance. At the end of the term, significant behaviors were distance, physical proximity, speech volume (F(5, 192) = 3.40; p = 0.003). Paralinguistic elements tended to reduce acceptance to "hang out with", despite being observed as adequate (Table 3). While initially smile tended to be associated to acceptance to "hang out with", after some months, physical proximity was more significant. Perhaps paralinguistic elements are picked and used in building first negative impressions, when compared to visual elements (Kouros & Cummings, 2011).

Concerning rejection to "hang out with" in the beginning of the term, the only significant variable was smiles (F(5, 192) = 11.41; p = 0.001), meaning that the

	Beginning of Term								
Model		Unstaı Coel	ndardized ficients	Standardized Coefficients	Т	Sig.	Collinearity Statistics		
		B Std. Error		Beta	-	8	Tolerance	VIF	
	(Constant)	1.250	0.352		3.549	0000			
	Smiles	0191	0075	0187	2.543	0012	0866	1.155	
24	Personal Appearance	0134	0075	0133	1.785	0076	0834	1.198	
	Content	-0230	0068	-0248	-3.407	0001	0878	1.139	
End of Term									
Model		Unstandardized Coefficients		Standardized Coefficients	Т	Sig.	Collinearity	Statistics	
		В	Std. Error	Beta			Tolerance	VIF	
	(Constant)	2.026	0.354		5.719	0.000			
	Gaze	0169	0096	0220	1.764	0.081	0581	1.722	
	Distance/ Physical Contact	0232	0091	0346	2.554	0.012	0491	2.035	
20	Distance/ Physical Contact post	-0152	0084	-0224	-1.809	0.074	0588	1.699	
	Voice Volume post	-0224	0098	-0296	-2.291	0.024	0541	1.850	
	Clarity post	-0232	0124	-0326	-1.867	0.065	0296	3.383	
	Clarity post	0238	0116	0333	2.045	0.044	0341	2.931	
	Content post	-0218	0120	-0274	-1.821	0.072	0399	2.506	

Table 3. Nonverbal behaviors predictive to acceptance to "hang out with" in the beginning of the term and at its end.

perception of adequate smiles tend to reduce rejection to "hang out with". At the end of the term, facial expression, gaze and personal attraction were significantly associated with rejection to "hang out with" (F(5, 192) = 9.34; p = 0.001).

It may be observed that variables that explained acceptance and rejection in the beginning of the term, did not sustain at the end of the term. Thus, although the means of the same assessments being constant for the same subjects, the covariation of those variables (nonverbal behavior and social acceptance and rejection) is not the same in the beginning of the term and at its end. Those results indicate that other aspects such as personality, human values, or other group variables may be involved (Kraus, Oveis, Allison, Young, Tauer, & Keltner, 2014; Blake, Kim, & Lease, 2011; Kudesia & Elfenbein, 2013; Funder & Harris, 1986; Ambady & Skowronski, 2008). There is a possibility that the first imppression keeps constant at the end of the term, but only resignified based in new perceptions of nonverbal behaviors due to more contac and interaction (Kouros & Cummings, 2011).

Another analysis was conducted to identify nonverbal behaviors observed in the beginning of the term that could explain acceptance and rejection at the end of the term, and allow for some predictive power of those behaviors in the beginning, to minimize social rejection and maximize acceptance (**Table 4**). Concerning rejection to "hang out with" at the end of the term, facial expression, personal attention and response to questions in the beginning were significantly associated (F(5, 192) = 4.96; p = 0.004). Results indicate that more agreeable facial expressions and more adequate answers to questions in the beginning of the term, when people did not know each one very well, tended to reduce rejection to "hang out with" after six months of contact. Personal attention, although ade-

Beginning of Term										
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics			
		В	Std. Error	Beta		- 0	Tolerance	VIF		
26	(Constant)	3.095	0.317		9.762	0000				
26	Smiles	-0398	0118	-0239	-3.379	0001	1.000	1.000		
End of Term										
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics			
		В	Std. Error	Beta		- 0	Tolerance	VIF		
	(Constant)	3.406	0.361		9.434	0000				
24	Facial Expression	-0581	0204	-0474	-2.841	0006	0329	3.035		
	Gaze	0393	0191	0319	2.060	0043	0382	2.619		
	Personal Attention	-0390	0142	-0306	-2.753	0007	0741	1.350		

Table 4. Nonverbal behaviors predictive of rejection to "hang out with" in the beginning of the term and at its end.

quately detected, was associated to rejection to "hang out with" at the end of the term. In fact, perception and building of impressions based in facial expressions tend to be sustained for a longer period, according to other studies (Mcaleer, Todorov, & Belin, 2014; North, Todorov, & Osherson, 2012; Stewart et al., 2012).

Regarding "hang out with" after six months of daily contact, behaviors in the beginning of the term were facial expression, smile, posture, intonation, clarity and speech duration (F(6, 84) = 4.49; p = 0.001). Acceptance to "hang out with" at the end of the term was reduced by facial expression, clarity and speech duration, considered adequate in the beginning of the term, and increased with perception of smiles, posture and intonation (Table 5).

Rejection to "study with" at the end of the term was explained by orientation, speech volume and clarity in the beginning of the term (F(5, 71) = 5.44; p = 0.000). Orientation and volume were negatively related to rejection to "study with", minimizing it after six months of contact and speech clarity tended to increase rejection. Finally, acceptance to "study with" at the end of term, was explained by pitch and speed (F(2, 87) = 4.37; p = 0.017); pitch reduced acceptance and speed increased it, after six months of contact.

Final Considerations

There were no differences in behaviors in the beginning of the term and at its end, when independently analyzed. However, the way they were ranked as explanations to social acceptance and rejection to "study with" and to "hang out with" changed from the beginning of the term to its end, indicating that contact during term allows for a change in the motives to social acceptance and rejection within the group. There is also the possibility that difference be mediated by individual or group values, which are incorporating in daily contact and affect the ways people justify their choices, despite their perceptions still being the same.

A more detailed analysis of the outliers of the regression can be performed to also identify people whose perceptions have been changed from the beginning to the end of the semester, namely that were accepted at the beginning and they were not the end of the semester or rejected at the beginning and not the end of the semester, since the identification of the characteristics of these people can provide a better insight into the aspects that mediated the change in perception of first impressions.

This work addresses the topic from how accepted and rejected people are perceived by their peers and further research could compare methods to see which one best explains the variability of acceptance and social rejection in the group, whether they are nonverbal behaviors assessed by the perception of pairs or social skills and emotional characteristics assessed by self report.

Among other limitations in this study, we can mention the loss that occurred pre and post test, since not all subjects were in the room at the second time of collection. At the same time, the research took place in a common core of discipline and would be worth taking rooms separately per course to examine the profile of these subjects per course, since the culture of each of these groups

Rejection to "Hang Out With"									
Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics		
		В	Std. Error	Beta	– t	Sig.	Tolerance	VIF	
24	(Constant)	3.082	0.429		7.180	0000			
	Facial Expression	-0386	0152	-0404	-2.532	0014	0491	2.038	
	Personal Atention	0572	0229	0481	2.495	0015	0337	2.966	
	Answers to Questions	-0497	0209	-0402	-2.372	0021	0437	2.289	

Table 5. Nonverbal behaviors in the beginning of the term predictive of social acceptance and rejection to "study with" and "hang out with" at the end of the term.

Acceptance to "Hang Out With"

Model		Unstandardized		Standardized			Collinearity Statistics	
		Coefficients		Coefficients		C:~		
		В	Std. Error	Beta	- t	31g.	Tolerance	VIF
	(Constant)	1.349	0.247		5.452	0000		
21	Facial Expression	-0184	0079	-0332	-2.321	0023	0466	2.145
	Smiles	0238	0093	0403	2.555	0013	0383	2.609
	Posture	0167	0082	0291	2.025	0046	0463	2.161
	Intonation	-0195	0092	-0359	-2.116	0037	0331	3.020
	Clarity	-0228	0090	-0438	-2.548	0013	0323	3.098
	Speech Duration	0227	0091	0444	2.502	0014	0302	3.310

Rejection to "Study With" Unstandardized Standardized **Collinearity Statistics** Coefficients Coefficients Model t Sig. Std. В VIF Beta Tolerance Error (Constant) 3.716 0.612 6.070 0000 Posture 0239 0284 0072 0446 2.244 0438 1.830 Orientation -0993 0272 -0615 0001 0379 2.641 -3.654 22 Personal 0427 0250 0231 0092 0587 1.703 1.707Appearance Speech -07440268 -0482 -2.7700007 0354 2.822 Volume Clarity 0464 0204 0332 2.278 0026 0506 1.978 Acceptance to "Study With"

	Madal	Unstand Coeffi	lardized cients	Standardized Coefficients		£:~	Collinearit	y Statistics
	Model	В	Std. Error	Beta	- l	31g.	Tolerance	VIF
25	(Constant)	1.741	0.350		4.976	0000		
	Pitch	-0378	0139	-0430	-2.723	0008	0428	2.338
	Speed	0404	0144	0444	2.814	0006	0428	2.338

would be different and could tell more about what circumstances the selection of certain nonverbal behaviors as predictors of acceptance and rejection occur.

It should be emphasized that no significant differences were found in the perception of nonverbal behaviors between the female and male participants. Although some authors (Bartholomeu, Montiel, & Pessotto, 2011; Montiel, Pessotto, & Bartholomeu, 2014) observed differences between the sexes, the result of the present research may be related to the fact of the differences between selfreported behaviors and based on nonverbal behaviors. However, an in-depth discussion of these data is beyond the scope of this study.

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