Iranian Journal of Applied Language Studies
University of Sistan and Baluchestan
Print ISSN: 2008-5494 Online ISSN: 2322-3650
Homepage: https://ijals.usb.ac.ir
Uppsala University

Exploring Iranian EFL Learners' (In)sincerity in Compliments through Prosodic Features

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Abstract

Prosody is a fundamental aspect of speech communication through which (un)truthfulness and (in)sincerity of speech can be identified. The focus of the study is on the prosodic features of (in)sincere compliments among EFL learners. Twenty male and female EFL learners were selected through Oxford Quick Placement Test. The participants did role-plays based on situations on compliment topics and their voices were recorded in a recording studio. The produced compliments were transferred to Praat software for acoustic analysis. Also, two native speakers (one male and one female) were requested to read the produced compliments both in a sincere and insincere manner. Their voices were transferred to Praat software for acoustic analysis to establish the baseline of the study. The prosodic features of the participants' voices were compared with those of native speakers to determine the (in)sincerity of the compliments on a 5-point scale. Results showed that sincere compliments are produced with a higher pitch. Concerning the gender of the participants, males were sincerer than females. Regarding the proficiency level of the participants, there was no significant prosodic feature in determining the sincerity of their compliments. Both intermediate and advanced groups were similar to native speakers in giving sincere compliments. The results of the study open up new horizons for the importance of vocal cues in evaluating sincerity in speech acts.

Keywords: compliment, pragmatics, prosody, sincerity, speech act

Received: July 22, 2021 Revised: October 18, 2021 Accepted: January 22, 2022
Article type: Research Article DOI: 10.22111/ijals.2022.7242
Publisher: University of Sistan and Baluchestan

How to cite: Allami, H., & Javidizadeh, M. (2021). Exploring Iranian EFL learners' (in)sincerity in compliments through prosodic features. *Iranian Journal of Applied Language Studies*, *14*(1), 145-162. https://doi.org/10.22111/ijals.2022.7242

1. Introduction

Among different speech act behaviors, compliments and compliment responses are one of the most studied areas in pragmatics. The compliment exchange is made up of a compliment and a response. The response type which can be an acceptance, a rejection, or an avoidance largely depends on the hearer's interpretation of the speaker's utterance. There are several factors that influence the way people respond to compliments such as social status, social distance, gender, and even tone of voice and facial expressions of the complimenter and the complimentee. Studying "compliments", one can find out about the way of offering them to others, working out any hidden social or cultural meanings, and responding back in the proper way (Gajaseni, 1994, as cited in Salameh, 2001, p. 6).

Despite abundant work on the speech act of compliment, there is still a research gap on the relationship between the pragmatic meaning and the role of prosody in spoken discourse. Little attention has been given to prosody in discourse studies. Prosody is definitely central to discourse analysis because when we talk, we do more than producing words. Features like pitch, energy, pause, rhythm, formant, and intensity, as prosodic features, are independent of words and cannot be inferred from lexical channels. Different languages and varieties of languages use prosody in different combinations to convey information, attitude, and conversational involvement. Any language needs prosodic structures to be understood, and each spoken utterance has its own unique prosodic structure (Cutler, 2012).

Prosody has drawn less research attention than its more important linguistic counterparts, but its inseparable role in spoken language should not be underestimated. Only a few studies (notably Fish et al., 2017 & Rigoulot et al., 2014) have discursively reported on the effects of prosodic features on the intended sincerity of compliments.

Despite the fact that a great number of studies have been conducted on compliment behavior in different languages and from a variety of different perspectives, only a few have focused on the link between the pragmatic meaning and the prosodic features in real interaction. This study intends to bridge this gap by probing into the role of prosody in the pragmatic analysis of compliments.

2. Literature Review

Communication is the process of transmitting information between two or more people. However, it is not a simple and straightforward process. Speech communication plays a multifaceted role in human social interaction. We naturally communicate in a way that we suppose is most appropriate for the person we are talking to. When we communicate with each other, we mostly do it intentionally. Much information is communicated by the words we say. However, there is some other information when a message is transmitted by what we commonly call 'tone of voice'. Therefore, speech can be divided into two components: what is said that refers to

the words (the lexical contents of speech) and how it is said that refers to prosody. Prosody carries all the production qualities of speech that are involved in saying a word so it includes things like pitch, loudness, speaking rate and rhythm, and voice quality effects like breathiness or harshness.

Through the use of prosody, we communicate information about who we are, what our attitudes or opinions, beliefs or our emotional state are, and how information should be interpreted while we are speaking. According to Hutchby and Wooffitt (1999), speaker and listener not only convey messages or exchange information but collaborate with each other in order to arrive at orderly and meaningful communication. Unsuccessful communication frequently involves misunderstandings caused by erroneous or simply different modes of interpretation, evaluation and perception (Adler, 1991).

Prosody is an essential aspect of all natural languages. Couper-Kuhlen and Selting (1996) state that prosody "is understood to comprise the musical attributes of speech auditory effects, such as melody, dynamics, rhythm, tempo, and pause" (p. 11). Szczepek (2006) states that in most phonological traditions, "prosody is understood to encompass the suprasegmental elements of speech pitch, which is realized in the form of intonation and pitch register; loudness, which is realized in the form of stress on single syllables and loudness over longer stretches of talk; time, which is realized in the form of duration, tempo, speech rate, rhythm and pause" (p.3).

Prosody can be examined via measuring some auditory factors such as pitch, the loudness or amplitude, and duration. The interaction of pitch, timing, and loudness is an important part of speech in all natural languages; no language is exclusively spoken in a monotone. Thus, the understanding of prosody is rooted in the language competence of speakers and listeners of any language. Most language users recognize that the way in which an utterance is said can be just as important and meaningful (if not more so) as the words that are used.

Every speaker's communicative style is influenced by the prosodic features from the first language, so where speakers bring different communicative styles to the interaction, miscommunications and misjudgments may occur. Different languages have different intonation systems and prosodic structure. It has been suggested that teaching the pragmatic role of prosody in English could enhance the oral communication of non-native speakers. It appears that acquiring native-like prosodic contours is important for L2 learners not only because it reduces their degree of foreign accent, but also because their non-native prosody can make it difficult to understand them.

Depaulo et al. (1996) stated that during interpersonal interactions, the sound and rhythm patterns can assist in finding the genuineness of feelings, as an example, determining the true intentions when giving and receiving admiration. These patterns of sound and rhythm that come with the production of dishonest admirations can easily reveal many things even if the speakers try to hide their true intentions and lie. Insincere opinions in the form of prosocial lies, which are about feelings, opinions, attitudes and preferences and are planned to seek psychological rewards such as intimacy, trust or respect (See Depaulo et al., 1996; Depaulo et al., 2003), have been considered as

a form of communicative competence or "social lubricant" (Byrant, 2008, Saxe, 1991, as cited in Fish et al., 2017, p. 148). Prosocial deception is common in adult relationships (Tyler & Feldman, 2004). They are of great importance for relationship management and of high interest because of their prevalence in social communication. According to Levine and Schweitzer (2015), prosocial lying can also increase behavioral and attitudinal measures of interpersonal trust.

Abundant research has already been conducted on deception and the perception of deceptive and truthful speech; however, little work has been done on the analysis of prosodic features specifically in comprehending the (in)sincerity of compliments. In connection with (in)sincerity, some research has been conducted for sarcasm detection and how humans recognize and understand sarcastic speech (Cheang & Pell, 2008).

In a study by Levitan et al., (2018) the acoustic-prosodic characteristics of deceptive and truthful speech in interview dialogues were analyzed. They also studied the deceptive detection, determining prosodic characteristics of speech that was considered truthful or deceptive by interviewers. Additionally, they identified variations in deceptive speech across gender and native language. Their findings revealed that pitch maximum was significantly higher in deceptive speech for male speakers and for native Chinese speakers. Intensity maximum also increased across groups other than native speakers of Chinese. Moreover, there was an increase in speaking rate in the truthful speech for all groups except native English speakers. The intensity maximum increased in deceptive speech, for all interviewer groups except females. Pitch maximum increased by native English speakers in disbelieved speech. Also, pitch mean was higher in deceptive speech only by male interviewers. Finally, based on classifiers built in this study, truthful speech was distinguished from deceptive speech using prosodic features. The best classifier gained an F1-score of 72.77.

Spence et al. (2012) conducted a study on Italian native speakers to examine two linguistic markers of deception namely pitch and speech rate. In the interviews, they found no difference between the sincere and insincere opinions in terms of pitch. But, regarding the rate of speech, they realized that during deception and fraud the speech rate is lower than that of telling the truth.

Matsuoka (2003) studied gender differences in explicitness in proffering compliments. Thirty male and thirty female Japanese university students participated in the study. Based on the Complimentary Mode Questionnaire administered to the participants of the study, three variables were examined: the content of the compliments, the status of the partners, and the mode, the specific manner in which admiration was expressed. The mode was from the most indirect to "compliment frankly and enthusiastically", which was the most direct. The results revealed that the averaged mode score for males was 5.14 and the female score was 4.97. This showed that male participants were more explicit in giving compliments.

Chowdhury et al. (2021) examined gender differences in lying behavior when the situation to tell lies is planned versus the situation as a surprise. The results indicated that when the opportunity to tell lies comes as a surprise, males tell lies more than females. In the planned situation, females tell more lies. When males could not plan but had the opportunity to tell a lie before, or could plan

but did not have to tell a lie before, males tell lies more than females. The results could be analyzed with respect to the gender differences in consistent and compensatory moral behavior.

Rockwell et al. (1997) also explored the deceptive vocal cues in interactive situations. The vocal features of deceptive speech were analyzed in detail through data from an earlier study. Vocal samples were explored both perceptually and acoustically. Their results revealed that the time variable could best discriminate between truthful and deceptive speakers. Deceivers showed longer response latencies, shorter message length, slower tempo, and less fluency than truth-tellers. Deceivers also showed increased pitch variance, increased intensity range and less pleasant vocal quality than truth-tellers.

Cheang and Pell (2008) identified possible cues of sarcasm based on simple produced utterances by English native speakers in four different attitudes including sarcasm, sincerity, humor and neutrality through exploring the acoustic features of F0 standard deviation, mean fundamental frequency(F0), F0 range, amplitude range, mean amplitude, speech rate, harmonics-to-noise ratio and one-third octave spectral values. Their study showed that in sarcastic production, one feature was noticeable and that was the reduction in mean basic frequency or F0 compared to other target opinions. In addition, sarcasm had a more reduction in NHR and basic frequency standard deviation compared to sincere utterances. Also, sarcasm was different from sincerity and humor in terms of reduction in loudness and deepness in both basic frequency and speech rate. Their study also revealed that auditory differences could easily be noticed between sarcasm and sincerity rather than humor. It was also found that measures of basic frequency standard deviation, mean basic frequency, and NHR differentiated these attitudes without respect to linguistic context. Honest admiration and compliment were greater in basic frequency standard deviation, were higher in mean basic frequency, and had less noise in signal.

In another study dealing with sarcasm, Tepperman et al. (2006) examined sarcasm through prosodic, spectral and contextual cues for the expression" yeah right" because of its common usage in American English conversations. The results showed that contextual and spectral features can be used to identify sarcasm. It was observed that energy (or, the speaker's volume) is the only sarcasm-dependent prosodic feature.

Booth et al. (2016) examined six different apologetic utterances produced by different English speakers in different prosodic manners, and their sincerity was measured. They tried to analyze the auditory and nonverbal signs and focused on the tone of voice. They used different audio files including 655 training and 256 test from 32 different speakers, each including one utterance from the six pre-prepared apologetic categories. 10 out of 32 speakers were chosen as test data and the task was to predict sincerity scores on a normal scale. All the speakers were supposed to produce each utterance in fast, slow, with the same pitch, and with different pitch styles. Some sincerity labels called the gold were averaged to a group of interpreters to lessen their bias and Spearman correlation formula was used. Because Gabor features were the largest improvement, it was concluded that Gabor features were the most powerful discriminators to evaluate honesty.

Rigoulot et al. (2014) studied brain processes in order to know which process assist listeners to distinguish between honest and dishonest compliment and admiration. They chose 29 participants and asked them to listen to Question-Response pairs in which the responses were either honest or dishonest, and then they were asked again to decide if the responses are honest or not. The results revealed that sound and rhythm patterns could assist in determining the (in)sincerity of the compliments. By the analysis of spatial and temporal features of event-related potentials, it was shown that the most significant effect of rhythm patterns was at the p600 voice intensity. They were greater in response to honest admirations.

The most recent study on compliments conducted by Fish et al. (2017) who investigated the role of speech prosody in interpreting the sincerity of compliments. Acoustic analysis of the data revealed that sincere compliments had a higher mean pitch and were produced significantly faster than insincere ones. At the same time, insincere compliments were significantly higher in mean amplitude than insincere ones in the main body of the utterances.

The study of compliments is somehow imperfect without the accurate analysis of the acoustic elements. Previous work on compliments and compliment responses had focused on complimenting and how recipients respond to compliments with respect to the factors such as gender, language, compliment topics and culture (Holmes, 1995; Yu, 2005; Wang & Tsai, 2000; Farghal, 2006; Shabani et al., 2019; Malmir & Taji, 2021). Yet, much of this work has largely ignored the major role of prosody in comprehending the sincerity in compliments. Therefore, it would be of interest to see how vocal cues are used to communicate (in)sincerity in speech. Rigoulot et al. (2014) mentioned that honest and dishonest admiration can be detected via nonlinguistic signs such as the patterns of sound and rhythm. Recent studies show that honest admirations differed from dishonest ones in terms of intensity and pitch.

To our best knowledge, not much research has yet examined the potential unique role of prosodic features in comprehending the (in)sincerity of compliments. To this end, this study focuses on possible relations between prosodic features like pitch, intensity and duration with sincere speech characteristics. As male and female voices have distinctive features, so gender differences in giving sincere compliments have been examined with regard to the prosodic features of pitch, intensity and duration. Moreover, in previous studies on investigating sincerity in compliments through prosodic features, the proficiency level of the participants has not been examined. Therefore, in this research the proficiency level of the participants was under study to evaluate how much the prosodic features of their (in)sincere compliments will be similar to native speakers. Thus, this research aims to address the following research questions:

1. How do prosodic features affect the comprehension of (in)sincerity in compliments?
2. Is there any difference between male and female participants in giving (in)sincere compliments with regard to the prosodic features?
3. Does proficiency level of the participants have any effect on giving (in)sincere compliments with regard to the prosodic features?

3. Method

In search of more reliable methods for data collection, many researchers look today for more naturalistic data collection methods. Role plays are more conversational, and they have the capacity to reflect more accurately what actually happens in conversation. Naturally occurring data may be good in that they represent spontaneous natural speech. Therefore, in the current research role-play method was used for collecting the data. Since the aim of this descriptive/analytic study was to determine the (in)sincerity of compliments with regard to the prosodic features, to this end, these variables were taken into account: the prosodic features (intensity, pitch and duration), gender (male and female) and proficiency level (intermediate and advanced) of the participants. Additionally, the prosodic features of compliments uttered sincerely and insincerely by the two native speakers and also gender of the native speakers were considered to be the baseline of the study and to be compared with those of participants in acoustic and statistical analysis.

3.1. Participants

The participants of this research were 20 students studying at the Department of English Language and Literature at Ferdowsi University in Mashhad, Iran. The students were 10 undergraduates and 10 postgraduates (6 Master and 4 Ph.D. candidates). Using convenient random sampling, the participants were selected from among 60 students who were either B.A., M.A or Ph.D. students. Participants, except those who had obtained IELTS 6 or above, were selected by a test of English language proficiency (Quick Oxford Placement Test). The participants were divided into two groups based on their gender. Each group was further divided evenly into intermediate and advanced. The English language proficiency of the students ranged from intermediate to upper intermediate and advanced. Those students who obtained scores from 30 to 48 were regarded as intermediate to upper intermediate group and those whose scores were 48 to 60 on the Oxford test as advanced group.

3.2. Instruments

As stated earlier, the purpose of this research is to determine the (in)sincerity of the compliments with regard to prosodic features among Iranian EFL learners. To this end, a number of instruments which enabled the researchers to collect the required data were used. The instruments included: Quick Oxford Placement Test, role play, Praat speech analysis software, and a researchers-made Discourse Role Play Task. A pilot test was conducted to investigate the reliability of the researchers-made Discourse Role Play Task. The alpha coefficient for the 4 items was .826, suggesting that the items had relatively high internal consistency. The validity of the researchers-made Discourse Role Play Task was checked by an expert. Face validity and content validity were verified.

3.3. Procedures

At the outset, Quick Oxford Placement Test was administered to the participants to homogenize them in terms of their level of proficiency. After selecting 20 EFL learners, the participants were informed of their participation process in the research, and their consent to participate in the study was obtained. The participants were assured of the confidentiality and the anonymity of the data material they would provide.

The data for the present research were made from two data sets. One data set included compliments elicited from Iranian EFL learners, whereas the second data set as the baseline data included the compliments uttered both sincerely and insincerely by the two English native speakers. The research methodology technique employed for the data collection was role-play.

The data collection took approximately four weeks. The data were collected in a recording studio using Neuman tlm 107 microphone connected to Preamp avalon v5 which was connected to sound card in PC.

Participants were requested to attend the studio in pairs. Since participants should not have directly instructed to compliment, at first two audio recordings based on compliments and compliment responses were played to give them a subtle hint on the research. As mentioned in the instrument section, there were fourteen cards prepared by the researchers. On each card there was a written scenario briefly describing a situation based upon everyday real-life activities. Then participants were requested to read the specified situation given to them and imagine themselves in the described situations. They were given sufficient thinking time to prepare themselves for role playing. They were allowed to take notes if needed. In total, 32 compliments were produced out of 28 role-plays as in some role-plays two compliments were provided. After recording role plays, the dialogues were transferred to Praat for speech analysis.

The next data set in this study included the same elicited compliments to be uttered both sincerely and insincerely by two English native speakers, one female and one male. The native speakers selected the sarcastic tone of voice as insincere. That is the reason why in previous studies related to sincerity or deception, the prosodic features of sarcasm were compared to those of sincerity or deception. Sarcasm can be defined as speech that has a semantic interpretation that is exactly opposite to its literal meaning (Tepperman et al., 2006). Gibbs (2000) stated that such sarcastic or ironic utterances are expressed in a jocular, mocking or teasing manner rather than as a form of criticism. Specifically, difference in average pitch was reported in several studies as the clearest marker of sarcastic utterances. However, in some of these studies it was found that pitch increased during such utterances (Haiman, 1997; Rockwell, 2007) while in others it decreased (Cheang & Pell, 2008; Rockwell, 2000). Others have found no difference in intensity between sarcastic and non-sarcastic utterances (Cheang & Pell, 2008; Rockwell, 2007). In studies of sarcasm in English, mean pitch was the most important acoustic marker of sarcasm. Therefore, in this study

pitch is considered as the most crucial factor in determining the sincerity of the compliments and in the next place intensity and duration.

It should be noted that two native speakers (one female and one male) were required to utter the elicited compliments by participants since in Praat software the default option for pitch value should be changed for the acoustic analysis of female and male voices. For female voices, it should be set into 100 to 500 Hz and for male voices 75 to 300 Hz.

The prosodic features (intensity, pitch and duration) considered in this research were computed at the utterance level. Each elicited compliment was analyzed in Praat software and its intensity, pitch and duration were obtained. Afterwards, the uttered compliments by native speakers were analyzed one by one and their prosodic features (intensity, pitch and duration) were obtained through Praat software as well. Then, the prosodic features of the elicited compliments were compared to those of native speakers to determine the (in)sincerity of the compliments.

3.4. Data Analysis

Prosodic-feature parameters used in this work were pitch, duration and intensity. For pitch, female pitch voice ranges from 150-300, for male pitch ranges from 50-200 and for child pitch voice ranges from 200-400. The vibration rate of the vocal folds is the fundamental frequency of the phonation F0 or pitch frequency. The pitch value is Hertz.

Duration represents the length of time at the utterance level. The time value in spectrogram is second but it is changed to millisecond in acoustical and statistical analysis. The intensity of speech, or energy flow, is also an important characteristic of the speech. Its value is decibel (dB).

3.4.1. Sincerity Rating Task

To determine the sincerity of the elicited compliments, the researchers prepared a 5-point scale ranging from -2 (insincere) to +2 (sincere). Based on fourteen situations given to the learners, 32 compliments were produced. Then, these 32 compliments were transferred to a 5-point scale and rated. These ratings were used to identify those utterances strongly perceived as conveying sincere versus insincere attitudes to guide detailed acoustic analyses. As noted before, because pitch is the clearest marker of sarcastic tone of voice in English and is considered revealing an insincere attitude, it was the most determining factor in rating the sincerity of the compliments. 81% compliments were rated as sincere (i.e., score of +1 or +2) and 18.5% as insincere (i.e., -1 or -2). In total, 26 compliments were sincere, whereas 6 compliments were insincere. These ratings along with intensity, pitch and duration of the compliments from both data sets were transferred to SPSS software (version 22) for statistical analysis.

3.4.2. Acoustic Analysis

All the data obtained from role plays and the two native speakers were analyzed through Praat software. First, compliments were selected and segmented manually by Praat software. Then by considering the gender of the interlocutor for each utterance, the default option for pitch was changed. For the pitch analysis of a female voice, it is required to set the pitch into 100 to 500 Hz and for a male voice into 75 to 300 Hz. Afterwards, the pitch, intensity and duration were achieved through Praat software. Going through the process to access pitch, intensity and duration for both sets of data, we compared the prosodic features of the elicited compliments with those of uttered by native speakers.

4. Results

The first research question was devised to investigate whether the prosodic features (pitch, intensity and duration) affect the comprehension of the (in)sincerity of the compliment. Table 1 shows the mean scores of the EFL learners were compared to those of native speakers in terms of the intensity, pitch and duration of the utterances. The mean score of the learners' group in terms of the intensity was 59.37 dB (SD=5.57), while the mean score of the native speakers' group was 64.94 dB (SD=6.78) with a mean difference of 5.57 dB. The mean score of the learners' group in terms of the pitch was 201.11 Hz (SD=60.04), while the mean score of the native speakers' group was 175.30 Hz (SD=50.07) with a mean difference of 25.80. The mean score of the learners' group in terms of the duration was 3543.25 ms (SD=1330.03), while the mean score of the native speakers' group was 3238.00 ms (SD=1306) with a mean difference of 305.25 ms.

Table 1

The Mean Scores of Intensity, Pitch and Duration of the Produced Compliments

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Intensity	59.37	32	5.57	.98
	Intensity_NS	64.94	32	6.78	1.19
Pair 2	Pitch	201.11	32	60.04	10.61
	Pitch_NS	175.30	32	50.07	8.85
Pair 3	Duration	3543.25	32	1330.03	235.11
	Duration_NS	3238.00	32	1306.14	230.89

A paired samples test was performed to compare the mean scores of intensity, pitch and duration of the produced utterances by learners with those of native speakers. The results indicated that intensity was statistically significant (M=59.37, SD=5.57) t (31) =3.17, p=.003(two-tailed). The eta squared indicated a large effect size (eta squared=.24).

In terms of pitch, the results showed that pitch was statistically significant (M=201.11 Hz, SD= 60.04) t(31) =4.51, p<.001(two-tailed). The eta squared indicated a large effect size (.39). In terms of duration, the results showed that duration was not statistically significant (M=3543, 25,

SD=1330.03). t (31)=1.91, p=.064(two-tailed). The eta squared indicated a moderate effect size (eta squared=.10) (Table 2).

Table 2

Pair Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	T	Df	Sig. (2-tailed)
Pair 1	Intensity - Intensity_NS	-5.57	9.93	1.75	-9.15	-1.98	-3.17	31	.003
Pair 2	Pitch - Pitch_NS	25.80	32.31	5.71	14.15	37.45	4.51	3	.000
Pair 3	Duration - Duration_NS	305.25	900.07	159.11	-19.26	629.76	1.91	31	.064

In this study, one of the objectives was to find the difference between male and female EFL learners in giving (in)sincere compliments while role-playing. Table 3 shows the mean score of the two groups (male and female) in terms of the intensity, pitch and duration of the utterances. The mean score of the male group in terms of the intensity was 60.90 dB (SD=5.78), whereas the mean score of the female group was 57.83 dB (SD=5.06) with a mean difference of 3.07 dB. The mean score of the male group in terms of the pitch was 150.51 Hz (SD=35.32), while the mean score of the female group was 251.71 Hz (SD=27.20) with a mean difference of 101.20. In terms of the duration, the mean score of the male group was 3078 ms (SD=1260.26), whereas the mean score of the female group was 4007.93 ms (SD=1267.67) with a mean difference of 929.37 ms.

Table 3

The Mean Scores of Intensity, Pitch and Duration of the Produced Compliments Based on Gender

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Intensity	Male	16	60.90	5.78	1.44
	Female	16	57.8	5.06	1.26
Pitch	Male	16	150.51	35.32	8.83
	Female	16	251.71	27.20	6.80
Duration	Male	16	3078.56	1260.26	315.06
	Female	16	4007.93	1267.67	316.91

An independent-samples t-test was carried out to find out if male and female EFL learners differed on their performance in terms of the intensity, pitch and duration. An analysis of the data showed that there was no violation of the normality assumption. In terms of intensity, the Levene's test for equality of variances further indicated the homogeneity of the variance (p=.77) was met. The results revealed that there was not a statistically significant difference in the mean performance between male (M=60.90, SD=5.78) and female (M=57.83, SD=5.06) [t (30)=1.60, p=.12, df=29.48]. The eta squared value was .07 suggesting a moderate effect size.

In terms of pitch, the Levene's test for equality of variances revealed the homogeneity of the variance (p=.37) was met. The results showed that there was a statistically significant difference in the mean scores of the two groups [t(30)=9.08, p<.001, df=28.16]. The magnitude of the difference in the mean was large (eta squared=.73).

In terms of duration, the Levene's test for equality of variances showed the homogeneity of the variance (p=.81) was met. The results showed that there was a statistically significant difference in the mean scores of the two groups [t(30)=2.08, p=.04, df=29.99]. The magnitude of the difference in the mean was moderate (eta squared=.12) (table 4).

Table 4

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Intensity	Equal variances Assumed	.08	.77	1.6	30	.12	3.07	1.92	-.85	6.99
	Equal variances not Assumed			1.6	29.48	.12	3.07	1.92	-.85	7.00
Pitch	Equal variances Assumed	.82	.37	-9.08	30	.00	-101.20	11.14	-123.96	-78.44
	Equal variances not Assumed			-9.08	28.16	.00	-101.20	11.14	-124.03	-78.38
Duration	Equal variances Assumed	.05	.81	-2.08	30	.04	-929.37	446.88	-1842.02	-16.72
	Equal variances not Assumed			-2.08	29.99	.04	-929.37	446.88	-1842.02	-16.72

Another objective of the study was to determine if the participants' proficiency level could affect the (in)sincerity of the compliments they produced while role-playing. Table 5 shows the mean score of the two groups (intermediate and advanced) in terms of the intensity, pitch and duration of the utterances. The mean score of the intermediate group in terms of the intensity was 59.74 dB (SD=6.12), and the mean score of the advanced group was 59.04 dB (SD=5.20) with a mean difference of .70 dB. The mean score of the intermediate group in terms of the pitch was 221.64 Hz (SD=49.11), whereas the mean score of the advanced group was 183.00 Hz (SD= 64.26) with a mean difference of 38.63. The mean score of the intermediate group in terms of the duration was 3891.46 ms (SD=1334.34), whereas the mean score of the advanced group was 3236.00 ms (SD=1286.66) with a mean difference of 665.46 ms.

Table 5

Group Statistics

	Proficiency	N	Mean	Std. Deviation	Std. Error Mean
Intensity	Intermediate	15	59.74	6.12	1.58
	Advanced	17	59.04	5.20	1.26
Pitch	Intermediate	15	221.64	49.11	12.68
	Advanced	17	183.00	64.26	15.58
Duration	Intermediate	15	3891.46	1334.34	344.52
	Advanced	17	3236.00	1286.66	312.06

An independent-samples t-test was run to see if intermediate and advanced EFL learners' performances differed in terms of the intensity, pitch and duration they had produced. An analysis of the data revealed that there was no violation of the normality assumption. In terms of intensity, the Levene's test for equality of variances further indicated the homogeneity of the variance (p=.081) was met. The results revealed that there was not a statistically significant difference in the mean performance between intermediate (M=59.74, SD=6.12) and advanced (M=59.04, SD=5.20) [t (30) =.35, p=.72, df=27.68]. The eta squared value was .004 suggesting a small effect size.

In terms of pitch, the Levene's test for equality of variances showed the homogeneity of the variance (p=.03) was not met. Therefore, the data at the second row, i.e. "Equal variances not assumed" is considered. The results showed that there was not a statistically significant difference in the mean scores of the two groups [t (30) =1.92, p=.06, df=29.44]. The magnitude of the difference in the mean was moderate (eta squared=.10).

Table 6

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Intensity	Equal variances Assumed	3.26	.88	.35	30	.72	.70	2.00	-3.38	4.78
	Equal variances not Assumed			.346	27.68	.73	.70	2.02	-3.44	7.00
Pitch	Equal variances Assumed	4.64	.03	1.89	30	.06	-101.20	38.63	-3.10	-80.37
	Equal variances not Assumed			1.92	29.44	.06	-101.20	20.09	-2.43	-79.70
Duration	Equal variances Assumed	.04	.82	1.41	30	.16	655.46	446.88	-291.64	1602.58
	Equal variances not Assumed			1.41	29.19	.16	464.84	446.88	-294.96	1605.90

In terms of duration, the Levene's test for equality of variances indicated the homogeneity of the variance (p=.82) was met. The results showed that there was not a statistically significant difference in the mean scores of the two groups [t (30) =1.41, p=.16, df =29.19]. The magnitude of the difference in the mean was moderate (eta squared=.06) (Table 6).

5. Discussion

In recent years, more attention has been given to the role of prosody in speech communication. This current study appears to throw light on Iranian complimenting behaviours with respect to prosodic features in speech to reveal the (in)sincerity of their compliments. The findings of the study showed that in determining the (in)sincerity of compliments, pitch and intensity are significant factors. However, duration cannot be a determining factor in comparison

with pitch and intensity. These results are in contrary to the findings of the study done by Rockwell et al. (1997) that reveals time (duration) is the most prominent feature in discriminating between truthful and deceptive speech. According to Rockwell et al. (1997), shorter message duration, increased pitch and increased intensity are the most indicative features of deception. Also the findings of the present study are in contradiction with the findings of the study by Tepperman et al. (2006) that rising pitch and increased intensity indicate insincerity (sarcasm) in speech. Contrary to the results of the study, the findings of the study by Spence et al. (2012) found no significant difference between the average pitch of true and false speech. However, speech rate was significantly lower in deceptive speech. Our findings are also in contrast with those obtained by Booth et al. (2016) in that they indicated pitch and intensity are important for sincerity estimation but inadequate in determining features in understanding the sincerity of speech. Also, the results of the study are somewhat in contrast with the findings of Cheang and Pell (2008) that suggests that reductions in mean F0 (pitch) feature appears particularly robust in sarcastic (insincere) utterances.

The results of this study are partly in agreement with the findings proposed in Rigoulot et al. (2014). The agreement concerns greater mean amplitude that was found in both, Rigoulot et al.'s and our study, to be accepted as a crucial factor in sincerity assessment. The only study that is of certain relevance for comparison with the results of study is the study by Fish et al. (2017) on difference between sincere compliments and insincere ones based mostly on vocal speech cues. Our findings are approximately in congruent with Fish et al.'s study in that a higher mean pitch is indicative of sincere compliments. However, higher mean amplitude and shorter duration are the apparent features of insincere compliments in Fish et al.'s study.

The next objective of the study was to distinguish the difference between male and female EFL learners in giving (in)sincere compliments with regard to the prosodic features. The results of the study indicated that pitch and duration are discriminating factors between males and females in sincerity assessment. However, intensity was not a significant factor. The effect size of intensity was moderate (eta squared=.07). So the obtained results showed that males and females were similar to each other in the production of compliments in terms of intensity. On the other hand, pitch and duration produced by females were significantly higher than those of males. Because pitch is differently analyzed in Pratt software due to the difference in pitch of female and male voices, pitch cannot be a determining factor in sincerity assessment as duration. As a consequence, duration is considered of great importance in the comprehension of sincerity in compliments between males and females. The findings of the research are in agreement with the results of the study by Matsuoka (2003) that males are more explicit in giving compliments. Moreover, the study results are in agreement with the study by Chowdhury et al. (2021) that females tell lies more than males in the planned situations. However, in the mentioned study males tell more lies in the situations as a surprise. Another study in relation to the sincerity in speech concerning gender was conducted by Levitan et al. (2018). The results of their study revealed that pitch was increased significantly in disbelieved (insincere) speech by only male speakers, not by female speakers. In addition, intensity

maximum was increased in speech that was not truthful by male speakers, not by female speakers. Speaking rate was also increased in trusted speech both for male and female speakers. Needless to say, there are a large number of studies done investigating the relationship between gender and complimenting behavior; however, more research is required in this area to explore any relationship between the two mentioned variables concerning the sincerity of compliments in respect to prosody.

The last objective of the study dealt with the investigation of the difference between intermediate and advanced EFL learners' performance of compliments in terms of the intensity, pitch and duration. The results of the study revealed that there was a lack of difference in the production of compliments in terms of intensity, pitch and duration according to proficiency level. The effect size for independent-samples t-test was calculated showing a small effect size for intensity, but a moderate effect size for pitch and duration (eta squared=.004, .10, and .06 respectively). So the obtained results showed that intermediate EFL learners were similar to advanced EFL learners in the production of sincere compliments in respect to intensity, pitch and duration.

From another perspective, it is also possible to compare the intermediate and advanced groups with the native speakers. It can be mentioned that intermediate and advanced groups were similar to native speakers in the production of compliments in terms of the mean scores of intensity. In terms of the mean scores of pitch, advanced group were similar to native speakers in the production of compliments; however, intermediate group did not produce the compliments as native speakers did. The mean score of pitch in the produced compliments by intermediate group (M=221.64) was slightly lower than native speakers (M=336.78). In terms of mean scores of duration, both groups were similar to native speakers. Contrarily, the mean score of duration in the produced compliments by intermediate group (M=3891.47) was higher than native speakers (M=3166.27). It should be noted that there are not any studies done on the relationship between the comprehension of sincerity in compliments and proficiency level, so it seems that our results are not so much decisive. Further exploration is needed in this area

In previous research on sincerity and deception, shorter duration was found to be the significant feature of sincere speech. Because the duration of the produced compliments by males was shorter than that of females, it can be mentioned that males were sincerer than females. Both groups were somewhat similar in the production of compliments in terms of intensity. Concerning the proficiency level of the learners in the production of compliments in respect to the prosodic features, there was no difference in the intensity, pitch and duration of compliments produced by intermediate and advanced EFL learners. Both intermediate and advanced groups were similar to English native speakers in producing sincere compliments.

6. Conclusion

This study has given prominence to an issue which has been underresearched, and indeed, largely overlooked in the research of speech acts especially complimenting. This study has attempted to demonstrate the role of prosody in the comprehension of (in)sincerity in compliments among Iranian EFL learners. In addition, the study has tried to examine the difference between males and females in the production of compliments in respect to prosodic features. Moreover, the produced compliments have been analyzed from the proficiency level perspective as well. It has been found that among the prosodic features (intensity, pitch and duration) in this research, compliments perceived sincere demonstrated a higher pitch and intensity in overall than compliments considered insincere. In previous researches on sincerity and deception, shorter duration is the significant feature of sincere speech. Since duration of the produced compliments by males was shorter than that of females; consequently, it can be mentioned that males were sincerer than females. Both groups were somewhat similar in the production of compliments in terms of intensity. Concerning the proficiency level of the learners in the production of compliments in respect to the prosodic features, there was no difference in the intensity, pitch and duration of compliments produced by intermediate and advanced EFL learners. Both intermediate and advanced groups were similar to native speakers in producing sincere compliments.

Prosody is a valuable component of language since it provides information that can disambiguate the semantics and syntax of a given utterance. Students learning English need to focus more on promoting pragmatic competence rather than only grammatical competence. Prosodic cues can be considered as learning tools to help language learners seek scaffolding, practice various speech genres, and examine different participation roles in a learning task. L2 learners, especially late learners, may benefit from explicit instructions on the use of English prosody. The goal is not for nonnative speakers to sound more native-like, but to increase intelligibility and comprehensibility in their communications in English with other native or non-native speakers

As people also convey sincerity or other attitudes through other channels such as body movements, facial expressions, eye contact, etc., further work is needed to understand how to integrate cues from other modalities, when these other modes of input are available.

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