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Model of lie cues detection in cross-cultural communication: insights from linguistic and cultural intersections

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ABSTRACT

This study explores lie detection within cross-cultural communication by examining linguistic and cultural cues that indicate deception. Employing a qualitative approach with an explanatory comparative method, the research involved six participants from diverse ethnic backgrounds in Southeast Sulawesi, Indonesia. Data were collected through observation and interviews using audio-visual scenarios designed to elicit both honest and deceptive responses. The findings reveal that linguistic cues to deception include uncertainty in speech, changes in intonation, unsynchronized eye contact and body language, and the use of ambiguous or vague expressions. Cultural cues also play a critical role, with norms, values, and traditions shaping how individuals express and interpret lying behaviors. For example, avoiding eye contact may signal dishonesty in one culture but signify respect in another. The research highlights that lie detection strategies grounded in single-cultural paradigms are insufficient for multicultural contexts. As a solution, the study proposes a new model that integrates linguistic and cultural parameters, offering a holistic framework for more accurate lie detection in intercultural settings. This integrated model contributes to both theoretical and practical domains, including law enforcement, diplomacy, and international business, where cultural sensitivity is essential. By advancing understanding of how language and culture interact in deceptive communication, the study addresses a critical

gap in the literature and promotes more equitable and effective approaches to detecting deception in global interactions.

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INTRODUCTION

As communication between individuals from different cultural backgrounds increases, understanding and interpreting lying cues becomes increasingly important. However, several current issues complicate this process, such as cultural variability in lying cues, where different cultures have distinct norms and expressions associated with deception (Dando et al., 2023). The next issue is about bias and stereotypes, where people often rely on cultural stereotypes to interpret lying cues, which can lead to misunderstandings (Taylor et al., 2014). Another issue is the contextual complexity in which communication occurs (e.g., business negotiations, legal settings, social interactions) may influence how deception cues are perceived and interpreted (Markowitz et al., 2023). The last issue, as shown by Lancaster University (2017) is about globalization and hybrid cultures where cultures mix and evolve so that traditional lying cues may become less reliable, and because a person's language tends to change when he lies, depending on his cultural background. Besides, lie detection is often misunderstood (Levine, 2023), and people have difficulty detecting lies (Bond & DePaulo, 2006; Hartwig & Bond, 2011; Pascual-Ezama et al., 2021). Lie detection, once limited to traditional methods such as linguistic analysis or isolated visual observation, now faces new challenges in accommodating complex cultural variations. Conventional methods used to detect lies are often inadequate because they do not consider this cultural variability. Lies, which can manifest through both verbal and non-verbal cues, frequently pose great challenges in detection, especially when they occur between individuals from different cultural backgrounds. Cross-cultural studies in communication have shown that culture influences how people communicate, including conveying and recognizing lies. However, practical approaches to detecting lies in cross-cultural contexts have not received sufficient attention in the scientific literature, which is the main motivation for this research.

Lie detection in cross-cultural communication presents unique and challenging complexities. The challenge in detecting deception stems from differences in communication styles, norms, and cultural expectations. For example, in the context of formal tourism communication in Indonesia, a hotel

employee may overpromise or provide an overly optimistic answer to a tourist's request (e.g., "Yes, we can arrange it quickly") just to avoid disappointing them, even though they know it is unlikely to happen. A tourist from a culture that values candor may perceive this as dishonesty, rather than an attempt to provide good service and maintain harmony. Cultural differences can influence how individuals convey lies and recognize deception through body language, facial expressions, or linguistic patterns (Taylor et al., 2017; Griffin & Bender, 2019). Current lie detection methods, which are generally based on research in single cultural contexts, are often unable to capture these nuances, reducing their accuracy and effectiveness when applied in cross-cultural contexts. Poor ability to detect lies explains why people are usually reluctant to accuse others of lying (Levine, 2014; Levine et al., 1999). This challenge is compounded by linguistic and cultural parameters varying widely across cultures, creating an urgent need for a more comprehensive and integrated approach. Until now, methods for detecting lie practices have been dominated by three parameters: psychology, physiology, and neurology. Polygraph Method (Clifton, 1991) or Psychophysiological Measurement (Farwell, 2013), MMPI-2 - Minnesota Multiphasic Personality Inventory-2 (Lewak & Hogan, 2001), Egalvanometer Test, Reaction-time Test, and Benussi's Breathing Test (Marston, 1921) are predominantly used in psychological and physiological parameters. Neuroimaging-Based Lie Detection methods such as fMRI - functional Magnetic Resonance Imaging and EEG – Electroencephalographic (Feng et al., 2022), as well as SG - Signaling Games (Jenkins et al., 2016) are used for neurological parameters. Therefore, the current research aims to address this issue by developing a lie detection model that combines linguistic and cultural parameters, providing a stronger and more accurate basis for detecting lies across cultural contexts.

The existing literature on lie detection has produced a variety of important findings, but most of these studies focus on single cultural contexts and do not consider cross-cultural differences (Nishimura, 2018; Castillo, 2015). Previous research suggests that lie detection methods based on non-verbal cues, such as body language, facial expressions, and verbal cues, such as linguistic patterns, have limitations when applied universally (Talaat, 2024; Zimmerman, 2016). These studies often ignore significant cultural variability in how people convey and recognize lies. Especially in the Southeast Sulawesi region, which is inhabited by four indigenous tribes and at least three transmigration tribes. Regarding ethical and practical challenges, Granhag et al. (2015) highlighted the ethical issues of applying Western lie detection methods in non-Western contexts, such as reinforcing stereotypes or violating cultural norms. Ten Brinke et al.'s (2016) study also emphasized the need for a culturally adaptive approach to lie detection to avoid misjudgments and promote fairness. However, the ethical implications of lie detection in a

multicultural region such as Southeast Sulawesi remain underexplored, particularly in contexts such as legal proceedings, business negotiations, or community disputes. This gap highlights the urgent need for a more comprehensive and contextual approach to cross-cultural lie detection. This study aims to discover linguistic and cultural patterns related to lie cues and integrate both parameters into a new lie detection model. Thus, this study contributes to enriching the existing literature and offers a more accurate and reliable approach to detecting lies in cross-cultural communication.

This study addresses the urgent need for culturally sensitive lie detection in an increasingly interconnected world. Focusing on Southeast Sulawesi, it offers a novel approach by combining linguistic and cultural parameters, moving beyond single-culture methodologies. Through advanced data analysis, the research identifies cross-cultural deception patterns, contributing to theory and practice in security, business, and diplomacy.

METHODOLOGY

Approach and Types of Research

This study employs a qualitative paradigm using an explanatory comparative method. It aims to identify and analyze linguistic and cultural patterns linked to lying and honesty. Additionally, it explores how cultural values, beliefs, and communication styles shape the use and interpretation of lying and honesty cues. The study also investigates culturally specific norms or behaviors in lie detection, examining their impact on the effectiveness of honesty cues in cross-cultural contexts.

Participants

The involvement of research participants (hereinafter referred to as video material observers) was carried out using a purposive selection technique with the characteristic that participants from each cultural group were considered to have diverse linguistic and socio-cultural backgrounds and knowledge. The cultural groups in question were taken from three (3) different tribes, namely the Muna, Bugis, and Bugis-Soppeng tribes. On the other hand, participants involved in audio-visual or video materials (hereinafter referred to as subjects) came from the Tolaki, Moronene, and Bugis-Makassar ethnic backgrounds. All participants provided significant access throughout this research. This means that all ~~individuals~~ six participants, consisted of 3 observers (1 person from Munaese, 1 from Buginese, and 1 from Buginese-Soppeng), and 3 subjects (1 person from Tolakinese, 1 from Buginese, and 1 from Moronenese), involved in the study actively cooperated and contributed to the research process, enabling the researchers to gather the necessary data and insights.

Instruments and Data Collection Techniques

The instruments used to collect data were observation sheets and interview guides. The observation sheets contain several linguistic and cultural markers such as word choice (vocabulary), grammar, word order (syntax), tone of voice (intonation), nonverbal behavior, language and communication style, symbols and icons, customs and traditions, values and beliefs, social norms, art, music, and literature, cultural artifacts, and specific cultural practices. The interview guide contains several questions that are associated with linguistic and cultural cues. The process and techniques of data collection and the types of data collected certainly depend heavily on temporary findings in the field and data needs.

Data were collected through scenario techniques based on the audio-visual materials provided. The materials in question were in the form of specially made videos (audio-visual) containing question-and-answer activities between researchers and subjects. The questions asked by the researchers in making the videos were designed in a natural form to obtain natural responses, both in the form of honest responses and lies. In the scenario process, observation techniques were carried out on chat materials by asking participants/observers to listen to the video material, researchers observed the process and responses of participants/observers while listening to the video material. This observation process allowed researchers to capture spontaneous language use and identify linguistic and cultural cues related to lying and honesty in real-world contexts. Observers can recognize indications of lies and honesty based on their respective knowledge and culture. Researchers do not intervene in any way with their knowledge and culture regarding indications of lies and honesty. This process was carried out offline by conducting direct observations while participants were watching the video material provided.

In the observation process, the video material with the Tolaki ethnic background was observed/listened to by the Bugis ethnic observer, while the video material with the Moronene ethnic background was observed/listened to by the Muna ethnic observer. This was intended to mediate cross-cultural understanding. The remaining video with the Bugis-Makassar ethnic background was observed/listened to by the Bugis ethnic observer. This scenario was intended to understand the ability to detect signals of lies or honesty compared to scenarios of different ethnicities or cross-cultures. In addition, interview techniques were also carried out to obtain information related to the participant/observer's personal experience in lying, explaining their strategies for detecting lies in others, or identifying certain linguistic and cultural cues that they believe are related to lying.

Data Analysis Techniques

Data were analyzed using thematic analysis and content analysis techniques. Thematic analysis was used to identify and report patterns or themes in interview transcript data. Content analysis techniques were used to identify patterns or themes and biases by coding and categorizing observational data.

FINDINGS

Linguistic Patterns

On a linguistic scale, the findings show four patterns that can indicate signs of lying and honesty. The four patterns in question are Uncertainty and Ambiguity of Speech, Changes in Intonation and Voice Tone, Unsynchronized Eye Contact and Body Movement, and Use of Ambiguous Words and Uncertain Phrases. Here are the explanations and data support.

Uncertainty and Ambiguity of Speech

Respondents who lie tend to use complex sentences that are less structured and long-winded. They often use metaphors or complicated linguistic conversions and use a lot of conjunctions such as 'but', 'however', or 'because'. In addition, there are unnatural pauses or too much thinking before answering, avoiding direct or specific answers, and providing possibilities without a clear basis. Here are some examples of interview data quotes.

DATA	DATA CODE
"Kalimat kompleks yang kurang beraturan" *[Complex sentences that are not organized]* *"Biasanya bertele-tele"* *[Usually long-winded]* *"Menggunakan metafora atau konversi linguistik yang kompleks"* *[Using metaphors or complex linguistic conversions]* *"Pilihan kata yang tidak terstruktur"* *[Unstructured word choices]* *"Kalau kita bohong itu terkadang ada jeda ya yang agak lama ketika kita akan mengeluarkan kata atau diksi atau kalimat yang terkait dengan apa yang kita mau sampaikan"* *[When we lie, sometimes there is a rather long pause before we are about to say a word or diction or sentence that is related to what we want to convey]* *"Menggunakan kata-kata yang lebih kompleks atau kalimat yang lebih panjang untuk menjelaskan sesuatu"* *[Using more complex words or longer sentences to explain something]* *"Menggunakan banyak kata penghubung seperti 'tapi', 'namun', atau 'karena'"* *[Using many connecting words such as 'but', 'however', or 'because']* *"Mengulang-ulang pernyataan yang sama untuk menegaskan kebohongan mereka"* *[Repeating the same statement to emphasize their lie]* *"Jeda yang tidak wajar atau terlalu banyak berpikir sebelum menjawab juga bisa menjadi indikasi"* *[nnatural pauses or thinking too much before answering can also be an indication]*	PL-Tema1

"Menghindari jawaban langsung atau spesifik hanya memberikan kemungkinan-kemungkinan tanpa dasar yang jelas" *[Avoiding direct or specific answers only providing possibilities without a clear basis]*

The observation data also shows several important things related to uncertainty and ambiguity speech, as in the following data excerpt.

DATA	DATA CODE
Word choices	
Hesitation in using certain words.	*[01.41-01-45-SRM]*
Excessive detail or irrelevant information.	*[00.30-00.52-TDR]*
Grammar	
Confused use of tenses.	*[03.20-04.00-SRM]*
Inconsistent sentence structure and unclear tenses.	*[05.19-05.51-TDR]*
Word order	
Unusual word order, often trying to evade or provide irrelevant information.	*[03.43-04.00 vs 08.58-09.32-SAE]*

Changes in Intonation and Voice Tone

Lies are often accompanied by inconsistent changes in intonation and tone of voice. Respondents show nervousness, with trembling intonation or sudden rises and falls in voice. Here is an example of data excerpts from interviews.

DATA	DATA CODE
"naik-turun volumenya kadang tegas kadang-kadang merendah" *[volume goes up and down sometimes firm sometimes low]* *"intonasinya bergetar atau gugup"* *[intonation is shaking or nervous]* *"Kalau bicara intonasi tentunya apa tadi ada kegugupan getar-getar ya ketika dia berbicara intonasinya apa dia bergetar suaranya atau gugup itu kan juga menandakan bahwa ini orang berbohong."* *[If we talk about intonation, of course, was there nervousness, shaking when he spoke, his intonation, did his voice shake or was he nervous, that also indicates that this person is lying]* *"tidak semua nada naik berarti ketegasan"* *[not all rising tones mean assertiveness]* *"intonasi yang tidak konsisten sering menjadi petunjuk."* *[inconsistent intonation is often a clue]* *"jika seseorang tiba-tiba mengubah nada bicaranya menjadi lebih tinggi atau lebih rendah saat menjawab" .* *[if someone suddenly changes their tone to be higher or lower when answering]*	PL-Tema2

Observation data also shows that there are signs of lying related to tone of voice, as in the following data excerpt.

DATA	DATA CODE
Voice pitch	
Varying intonation, unstable or exaggerated voice pitch.	*[07.29-07.30; 07.54-09.40-SAE]*

Decreasing voice pitch.	*[01.10-01.13-SRM]*
Suddenly speaking with a high voice pitch.	*[07.07-07.33-SRM]*

Unsynchronized Eye Contact and Body Movement

Avoiding eye contact and body language that is out of sync with speech are common indications of lying. Respondents lying may display anxious facial expressions, frequently touch their face or mouth, and have a defensive or anxious body posture. Here are some examples of interview data excerpts:

DATA	**DATA CODE**
"Tatapan mata tidak fokus" *[Unfocused eye contact]* *"Menunduk"* *[Looking down]* *"Menggaruk atau menyentuh bagian lain"* *[Scratching or touching other parts]* *"Memasukkan tangan di saku"* *[Putting hands in pockets]* *"Ekspresi berubah menjadi malu"* *[Expression changes to shy]* *"Tatapan mata tunduk"* *[Looking down]* *"... gerakan tubuh ... tangan misalnya dia kadang-kadang menggaruk atau menyentuh bagian yang lain"* *[... body movements ... hands for example sometimes they scratch or touch other parts]* *"... kontak mata kita tidak bisa memandang mata lawan bicara kita secara pasti"* *[... eye contact we can't look the other person in the eye exactly]* *"Ya terkadang tunduk kalau berbicara ... kalau kita menatap mata atau menatap langsung ..."* *[Yes sometimes looking down when talking ... if we make eye contact or look directly ...]* *"Menghindari kontak mata terlihat gelisah dan mungkin sering menyentuh wajah atau mulut mereka"* *[Avoiding eye contact looks anxious and may often touch their face or mouth]* *"Mengalihkan pandangan atau mengubah posisi tubuhnya secara tidak wajar"* *[Looking away or changing body position unnaturally]*	PL-Tema3

Observation data also shows signs of lying in nonverbal behaviour, as in the following data excerpts.

DATA	**DATA CODE**
Nonverbal behavior	
Avoidance of eye contact.	*[03.19-03.25; 03.48; 08.02-08.09-SAE]* *[06.50-07.06-SAE]*
Body language that is out of sync with speech. *Defensive or anxious body posture.*	*[00.59-01.01-SRM; 22.38-23.03-TDR; 25.52-26.00-TDR]*

Use of Ambiguous Words and Uncertain Phrases

Lying is often characterized by the use of ambiguous words and uncertain phrases. Common examples include words such as 'maybe', 'it seems', or 'I'm not sure', the avoidance of self-reference, and the increased use of pronouns. Here are some examples of excerpts from the interview data.

DATA	DATA CODE
"saya bilang 'iya' karena saya sudah memprediksi kemungkinan pak Nas ini akan meminta tolong" *[I said 'yes' because I had predicted that Mr. Nas would ask for help]* *"kalau bagian fisik yang lain agak sulit kayaknya pak"* *[if it's a bit difficult for other physical parts, sir]* *"kalau dengan orang baru... agak susah agak sukar untuk ini"* *[if it's with new people... it's a bit difficult for this]* *"saya rasa kurang terlalu relevan dengan sesuatu untuk mengklaim bahwa seseorang itu bohong atau tidak"* *[don't think it's very relevant to something to claim that someone is lying or not]* *"kalau dalam ajaran agama misalnya itu seseorang dibolehkan berbohong demi kebaikan"* *[if in religious teachings, for example, someone is allowed to lie for the sake of goodness]* *"sistem 'magollai' begitu. Saya kurang paham apakah itu kebohongan atau tidak"* *[the 'magollai' system is like that. I don't really understand whether it's a lie or not]* *"mungkin faktor kehidupan ibu kota yang membentuk karakter mereka"* *[maybe it's the capital city life factor that shapes their character]* *"kalau orang yang berkata jujur biasanya kalimatnya teratur sederhana"* *[if someone is telling the truth, their sentences are usually simple and orderly]*	PL-Tema4

Observation data also shows signs of lying, which are apparent from the use of ambiguous words and uncertain phrases, as in the following data excerpts.

DATA	DATA CODE
Word choices	
Excessive detail or irrelevant information.	*[00.30-00.52-TDR]*
Choice of the word 'maybe' to evade and lack spontaneity.	*[05.42-05.50; 06.51-07.00-SRM]*
Grammar	
Sentences that are inconsistent in structure or meaning.	*[03.20-04.00-SRM]*
Mismatch between the subject and predicate.	*[03.20-04.00-SRM].*
Word order	
Unnatural word order, seemingly modified.	*[05.58-06.17-SRM]*

Cultural Patterns

The results of the analysis show that there are contextual variations in meaning in cultural expressions related to lying. The cultural patterns found are as follows:

Nonverbal cues

Respondents who lie tend to show nonverbal cues such as closed gestures, avoiding eye contact, trembling voices, and tense or pale facial expressions. They often look down and do not focus on eye contact. Here are examples of the data quotes in question.

DATA	**DATA CODE**
"Kalau saya pribadi itu eee... untuk menilai seseorang itu lebih banyak kepada nonverbal daripada verbal..." *[For me, eee... to judge someone, it's more about nonverbal than verbal...]* *"Ekspresi wajah tegang pucat"* *[Pale, tense facial expression]* *"...dalam budaya kami pak orang yang jujur akan selalu menjaga kontak mata yang baik dan tidak memalingkan matanya ketika berbicara."* *[...in our culture, sir, an honest person will always maintain good eye contact and not look away when speaking.]* *"...orang yang berbohong itu cenderung memiliki postur yang tertutup seperti menyilangkan tangan atau menghindari kontak fisik."* *[...people who lie tend to have a closed posture, such as crossing their arms or avoiding physical contact.]*	*PB-Tema1*

DATA	**DATA CODE**
Observers assessed that the subject showed certain nonverbal cues such as suddenly folding his legs while laughing, laughing while covering his mouth with his hand, and shifting his sitting position. These nonverbal cues were more interpreted as behaviours of shame and anxiety if what others said about him would happen	*[17.21-17.22; 17.24-17.25; 17.32-17.35-SAE]*
Observers understand that the subject tried to deny his cultural context by giving conceptual-ideal explanations and with gestures such as avoiding eye contact, trying to fix the position of his clothes on his shoulders, and giving unclear details	*[03.14-04.04-SRM]*
The subject also showed a shy smile gesture as an implication of agreement with what the interviewer said in the next session even though this was not the case in the initial session.	*[24.09-24.14-TDR]*

Verbal cues

Lies are often accompanied by unstructured word choices, high or low tone of voice, and inconsistent communication styles. Respondents who lie tend to use complex and ambiguous sentences. Here are some examples of data quotes.

DATA	**DATA**

	CODE
"Pilihan kata yang tidak terstruktur" *[Unstructured word choice]* *"Nada suara tinggi atau rendah"* *[High or low tone of voice]* *"Gaya komunikasi yang plinplan tidak konsisten"* *[Inconsistent and inconsistent communication style]* *"...kejujuran biasanya akan terlihat dari konsistensi jawaban mereka pak."* *[...honesty will usually be seen from the consistency of their answers, sir.]*	*PB-Tema2*

DATA	DATA CODE
Language and Communication Style	
The observer believes that the subject has violated the code of ethics or norms but the subject continues to try to hide it with a principled concept for a traditional figure like Tolea by always saying "for now"	*[36.38-37.05; 18.58-19.39-TDR]*
The observer sees that the Tolaki cultural values in the subject are being pushed aside because of the linguistic signs of lies.	*LP-TDR*

Psychological cues

Respondents who lie often show signs of nervousness, such as not being able to look the other person in the eye with certainty, and using phrases that indicate uncertainty, such as 'I think', 'as I recall', or 'maybe'. Here are some excerpts from the data.

DATA	DATA CODE
"Ketika kita akan menyampaikan sesuatu dari kebohongan kita ya yang pertama adalah pasti kita gugup." *[When we are going to convey something from our lies, the first thing is that we are nervous.]* *"Tidak bisa memandang mata lawan bicara kita secara... secara apa... secara pasti."* *[Can't look into the eyes of the person we are talking to in a... in a... certain way.]* *"Saya rasa, saya pikir"* *[I feel, I think]* *"Seingat saya"* *[As I know]* *"Mungkin bisa jadi"* *[Maybe it could be]* *"Saya tidak yakin tapi"* *[I'm not sure but...]* *"Bisa jadi namun saya kurang tahu pasti"* *[It could be but I'm not sure for sure]*	*PB-Tema3*
DATA	*DATA CODE*
The subject also showed a shy smile gesture as an implication of agreement with what the interviewer stated in the next session, even though this was not the case in the initial session.	*[24.09-24.14-TDR]*

There was a sign of lying when the subject tried to justify himself because of the context of the relationship status between the interviewer and the subject, namely between a lecturer and a student.	*LP-TDR*

Normative cues

In some cultures, lying may be more acceptable in certain situations, such as maintaining honor or avoiding embarrassment. In Bugis culture, lying can be used to maintain 'siri' or family honour. The following are examples of data excerpts.

DATA	**DATA CODE**
"...orang cenderung berbohong untuk menjaga siri' mereka atau untuk melindungi keluarga mereka dari rasa malu." *[...people tend to lie to maintain their siri' or to protect their family from shame.]* *"...dalam budaya Bugis kebohongan umumnya dianggap tidak dapat diterima dan bisa merusak kehormatan seseorang."* *[...in Bugis culture lying is generally considered unacceptable and can damage one's honor.]* *"Ketika orang tidak memiliki pemahaman agama yang baik maka seseorang itu akan berpikir untuk melakukan kebohongan yang dapat merugikan orang lain..."* *[When people do not have a good understanding of religion then that person will think of telling lies that can harm others...]*	*PB-Tema4*

DATA	**DATA CODE**
Observers see that the subject is not responsible for his cultural values and beliefs related to the moral conditions in his area.	*[10.50-11.14-SRM]*
There is a sign of lying when the subject tries to justify himself because of the context of the relationship status between the interviewer and the subject, namely between lecturer and student.	*LP-TDR*
Overall, the observer sees that the subject does show a pattern of politeness as a cultural marker but the sign of lying is very prominent linguistically.	*LP-TDR*
The observer sees that the subject does not give respect to other community groups in his area by showing a gesture of waving palms from the inside out to give meaning not to equate the community in question with his community	*[10.34-1037-SRM]*

DISCUSSION

The research findings show that there are consistent linguistic characteristics in individuals who lie, such as uncertainty and vagueness in speech, changes in intonation and tone of voice, unfocused eye contact and unusual body movements, and the use of ambiguous words and uncertain phrases. Respondents who lie tend to use complex sentences that are less structured

and long-winded due to uncertainty and vagueness in speech. They also avoid direct answers, provide possibilities without any clear basis, and show unnatural pauses before answering. Uncertainty and vagueness of speech are among the linguistic features often associated with lying. DePaulo et al. (2003) found that "Liars often use vague and vague words or phrases to avoid providing specific details and prefer general or ambiguous answers to avoid contradiction and further questions". In addition, Ekman (2009) explains that "Ambiguity and uncertainty in verbal speech are often accompanied by incongruent non-verbal cues, such as a tense smile, fidgeting, or lack of eye contact". This misalignment can be caused by internal conflict within a person lying due to high cognitive load, limited conscious control, or emotional incompatibility.

In addition, ambiguity and uncertainty in speaking occur because someone tries to avoid a direct answer, so a pause occurs. In this moment, the speaker provides possibilities not supported by clear facts. An unnatural pause before answering a question indicates that the speaker takes time to construct a lie that can later sound convincing. Linguistic research shows that uncertainty in speech can include using ambiguous words and phrases that indicate doubt, such as 'maybe', 'it seems', or 'I'm not sure' (Vrij et al., 2015). The use of these words indicates the speaker's attempt to remain flexible and avoid committing to specific statements that could easily be questioned or proven wrong. Thus, these linguistic patterns not only reflect an attempt to conceal the truth but also indicate the additional cognitive load experienced by individuals who lie to maintain consistency and credibility in their communications.

The following pattern is the change in intonation and tone of voice. Respondents show nervousness, with a trembling intonation or a sudden rise and fall in voice. Changes in intonation and tone of voice are often considered important cues in detecting lies. Scientific research shows that when someone lies, physiological changes in their body can affect speech patterns. For example, increased stress often accompanies lying, which can cause changes in speech rate, pitch, and voice modulation. Studies by Ekman (2009) and Vrij (2008) suggest that the emotional and cognitive stress experienced by liars can affect their intonation and pitch. Ekman, in his research on facial expressions and non-verbal communication, found that vocal changes, including increased pitch and inconsistent speech rate often accompany lies. Vrij also found that liars tend to show more significant variation in their speech pitch and rate than truth-tellers.

Furthermore, research using voice analysis technology shows that there are certain patterns of change that can be indicators of lying. Benus et al. (2006) used spectral analysis and found that changes in the fundamental frequency and amplitude of the voice can be strong indicators of lying. This

analysis helps identify inconsistencies between what and how it is said. However, it is important to remember that intonation and tone of voice changes are not absolute indicators of lying. Other factors, such as the context of the conversation, emotional state, and individual characteristics, must also be considered. Therefore, lie detection through vocal changes should be used in conjunction with other indicators, such as facial expressions and body language, to obtain more accurate results.

Next is a pattern of unfocused eye contact and unusual body movements. This pattern is often considered a sign of lying in the context of non-verbal communication. Research shows that people who lie tend to avoid eye contact or maintain it too long as a compensatory effort. This is because lying requires greater cognitive effort, so attention can be diverted from maintaining natural eye contact. Research conducted by Vrij et al. (2010) found that lying is often associated with increased stress, which can manifest itself in the form of inconsistent eye contact and restless body movements, such as touching the face, crossing the arms, or moving the feet unusually. Additionally, unusual body movements, such as sudden changes in posture, are often identified as indications of lying.

Research conducted by Ekman (1992) stated that "micro-changes in facial expressions and small body movements are often not noticed by individuals who are lying but can be recognized by trained observers". For example, a person who is lying may frequently scratch their nose or ears, which may be due to increased blood flow produced by stress or anxiety. However, it is important to remember that these indicators are not always definitive and can vary across individuals and situational contexts. Some people may show similar signs when anxious or uncomfortable, not because they are lying. Therefore, judgment of lying should be based on non-verbal cues, context, and other relevant information.

The following pattern is the use of ambiguous words and uncertain phrases. This pattern is often associated with signs of lying in verbal communication. Research in psychology and linguistics shows that individuals who lie tend to use more vague language as a way to avoid the detection of lies. Phrases such as "maybe," "could be," or "I feel" are examples of linguistic uncertainty that often appear in the speech of dishonest people. A study by Vrij et al. (2010) found that using ambiguous words can reduce the cognitive pressure felt by liars because it gives them room to avoid further questions or corrections that could expose their lies.

In addition, research by Hancock et al. (2007) also indicated that liars tend to use more qualifying words and modal adverbs, such as 'probably' and 'most likely', which reflect hesitation and uncertainty. This contrasts with honest communication, where individuals are more likely to provide direct and definite answers. Another study by Pennebaker et al. (2003) showed that

lying is often accompanied by a decrease in the use of first-person pronouns, which can be seen as an attempt to create psychological distance from the lie being told. Linguistic analysis becomes an important tool in detecting lies, where ambiguous word usage patterns and uncertain phrases can indicate dishonest behaviour.

Luke (2019) emphasizes that "not everyone shows the same signs when lying, and some individuals may be skilled at hiding these clues". Walters (2000) also asserts that "no single behavior, verbal or nonverbal, can prove that someone is honest or lying". Therefore, Luke emphasizes that these signs should be considered in the broader context of communication and interaction, and should not be taken as the sole indicator of lying. It is important to avoid false positives and false negatives, as stated by Cheng and Broadhurst (2005).

The research results found that cultural patterns influence how lies are expressed, including nonverbal cues, verbal cues, psychological and emotional cues, and cultural and social norms that shape the perception and acceptance of lies in specific contexts. Regarding nonverbal cues, respondents who lie tend to show specific nonverbal cues such as closed gestures, avoiding eye contact, trembling voices, and tense or pale facial expressions. They often look down and do not focus on eye contact. These cues are commonly seen in individuals who are lying. However, these conditions can be interpreted differently due to cultural influences.

Nonverbal cues in detecting lies are heavily influenced by cultural context. Research shows that facial expressions, body movements, and speech patterns considered indicators of lying can vary significantly from culture to culture (Bond & Atoum, 2000; Gelfand et al., 2011). For example, in Western cultures, avoiding eye contact is often seen as a sign of dishonesty, whereas in some Asian cultures, avoiding eye contact is a sign of respect and humility. Similarly, a hand gesture or change in tone of voice that might be seen as suspicious in one culture may have a very different meaning in another.

A cross-cultural study conducted by Matsumoto and Hwang (2013) found that understanding nonverbal cues is often influenced by underlying social norms and cultural values. They observed that people from collectivist cultures, such as Japan or Korea, may be more likely to display nonverbal cues to maintain social harmony, even if it means covering up the truth. In contrast, individualistic cultures such as the United States or Germany place greater emphasis on honesty and openness, which can lead to different interpretations of the same nonverbal cues. The Bugis-Makassar, Tolaki, and Moronene societies also have strong collectivist values. In many collectivist cultures, avoiding eye contact when speaking to someone older or of higher status is a sign of respect. However, in the context of lying, excessive

avoidance of eye contact can be seen as suspicious, although this must be seen in the context of local social norms.

Another study by Ekman and Friesen (1974) on microexpressions indicated that although some universal facial expressions can indicate certain emotions, the interpretation and response to these expressions are highly dependent on the cultural context. For example, a smile may be interpreted as a sign of friendliness in one culture but may be interpreted as a sign of discomfort or deceit in another culture. The tendency to interpret nonverbal cues based on cultural background shows the importance of cultural sensitivity in lie detection. Without a deep understanding of cultural norms, attempts to detect lies through nonverbal cues can be biased and inaccurate.

The next pattern is verbal cues that are often used as indicators of lying, but cultural influences play an important role in how these cues are interpreted. Studies show that verbal cues such as pauses in speech, changes in intonation, and the use of certain words can have different meanings in different cultural contexts. Vrij et al. (2008) found that in high-context cultures, non-verbal cues may be more significant than verbal cues in detecting lies. The Tolaki, Bugis-Makassar, and Moronene communities also have high-context cultures and often use unspoken social codes. In high-context cultures, communication relies more on the situation, interpersonal relationships, and nonverbal cues than on explicitly spoken words.

Next are psychological and emotional cues, a complex and interesting topic, especially when examined in the context of cultural influences. In this study, respondents lying often showed signs of nervousness, such as being unable to look the other person in the eye with certainty, and using phrases that indicated uncertainty, such as 'I think', 'as I know', or 'maybe'. However, research has shown that indicators of lying can differ significantly across cultures, including psychological and emotional issues that are commonly seen in expressions. Pandey et al. (2023) have shown that "cross-cultural variability indicates differences in the psychology of language". In a study of facial expressions and lying, Ekman and Friesen (1969) found that very rapid and uncontrollable micro-expressions can be fairly universal indicators of lying. However, cultural context also plays an important role in how these signs are interpreted and manifested.

The complexity of human psychology shows how difficult it is for someone to detect lies through these cues. A study by Vrij et al. (2010) indicated that lie detection methods commonly used in Western cultures, such as the polygraph or verbal behaviour analysis, may not always be effective when applied to individuals from other cultures. This is because there are cultural differences in how to express emotions and respond to questions asked in the test. Understanding psychological and emotional cues related to lying in cultural influences requires a holistic approach sensitive to cultural

context. Further research is needed to develop more universal lie detection methods, or at least, more adaptive to cultural variations.

Next is the pattern of cultural and social norms. In some cultures, lying may be more acceptable in certain situations, for example, to maintain honor or avoid embarrassment. In Bugis-Makassar culture, lying can be used to maintain 'siri' or family honour. Likewise, in Tolaki and Moronene cultures, lies may be used in certain situations to protect the family's good name and maintain its reputation. Cultural and social norms play a significant role in influencing how individuals recognize and interpret deception cues. Deception cues, such as facial expressions, body movements, and tone of voice, can vary significantly across cultures.

Cultural and social norms have a significant impact on detecting cues of deception and constructing perceptions. Masip et al. (2010) showed that cultural context influences the perception and detection of lies. Furthermore, Tong et al. (2023) also showed that each culture influences how a person makes moral evaluations and decisions regarding lies and supports the idea that a person's moral standards and behaviour are interrelated. Thus, an understanding of cultural and social norms is essential in the context of interpreting deception cues. Misinterpretation can occur if one applies the standards for deception cues from one culture to another without considering these cultural differences. This emphasizes the need for a more contextual and culturally sensitive approach to the study and practice of lie detection. However, it is true that culture cannot stand alone as the primary determinant in detecting lie cues. Cultural issues must still involve linguistic issues in detecting lie cues.

Combining linguistic and cultural patterns provides a more comprehensive and in-depth concept for detecting deception cues. Effective lie detection not only considers verbal and nonverbal aspects but also considers the cultural and social contexts surrounding it. Linguistic patterns such as uncertainty in speech, changes in intonation, unfocused eye contact, and unusual body movements are indicators that can be directly observed. However, interpreting these cues must be done with cultural sensitivity because cultural differences can change the meaning and implications of these signs. For example, in some cultures, avoiding eye contact can be interpreted as a sign of respect rather than a sign of lying. In addition, cultural and social norms also influence how lies are expressed and recognized.

In some communities, lying may be more acceptable in certain situations, such as to preserve honour or avoid embarrassment, which differs from the standards of honesty in other cultures. Therefore, combining linguistic analysis with a deep understanding of cultural context, a holistic approach is key to accurately detecting lies. This approach not only helps to identify lies more accurately but also reduces the possibility of bias and

misunderstanding that can arise from applying one culture's standards to another without considering the existing differences. In this way, lie detection can be conducted more fairly and effectively, respecting the uniqueness of each culture while maintaining the integrity of the analysis process.

Proposed model

By combining the power of linguistic analysis, which produces linguistic patterns (parameters), and cultural analysis, which produces cultural patterns (parameters), the detection of lie signals in a cross-cultural context can be more comprehensive and in-depth. The synchronization between linguistic and cultural parameters is the primary basis for the power of lie signal detection.

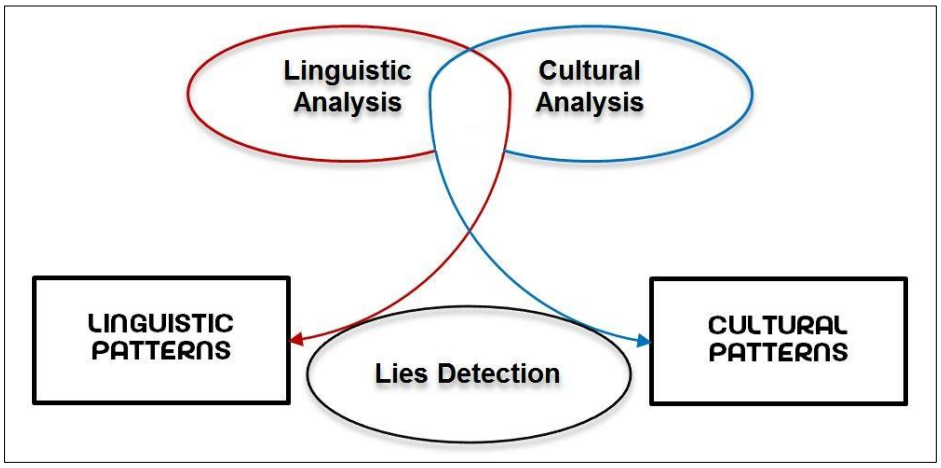

Figure. Cross-Cultural Lie Detection Concept Design

The figure illustrates a holistic approach to detecting lies in a cross-cultural context by combining two main analysis domains, namely Linguistic and Cultural Analysis, which then become parameters. These two parameters do not only stand alone but complement and strengthen each other in a series of lie detection processes. Linguistic Analysis involves an in-depth study of patterns of language use, including word choice, sentence structure, and communication style, to produce linguistic patterns or parameters that could indicate lying. These patterns may include detecting changes in verbal consistency, speech rate, and the use of words that are unusual in a particular context. On the other hand, cultural analysis involves an in-depth understanding of the cultural context in which communication occurs. This involves cultural values, norms, customs, and conventions that influence how individuals communicate. Cultural Analysis aims to produce cultural patterns or parameters important for interpreting deception signals in a

broader context. For example, cultural variations in emotional expression or attitudes toward lying.

The combination of linguistic and cultural analysis results in a more comprehensive approach to lie detection. The linguistic patterns detected in the first analysis will be interpreted considering the relevant cultural context. This aims to produce a more accurate and contextual lie detection, reducing the possibility of misinterpretation if only relying on one type of analysis. By combining the strengths of these two analyses, the resulting approach will be able to detect deception signals more deeply and broadly in a cross-cultural context. This is especially important in an increasingly connected world where cross-cultural interactions are becoming commonplace.

This conceptual design can be applied in several ways. For example, cross-cultural psychology, sociology, and communication research can use this approach to understand how lies are expressed and received in different cultures. Additionally, in professional contexts such as job interviews, criminal investigations, and international business negotiations, this approach can be used to improve the accuracy of lie detection. So, by combining linguistic and cultural analysis, lie detection becomes not only more accurate but also more contextually relevant. Linguistic patterns provide concrete data, while cultural patterns provide the essential interpretive framework. This integration creates a more holistic and effective approach to uncovering the truth in cross-cultural communication.

CONCLUSION

This study aims to find linguistic and cultural patterns related to lying and honesty. The results of the study revealed certain linguistic patterns that are indicators of lying. These patterns include uncertainty and vagueness in speech, changes in intonation and tone of voice, unfocused eye contact and unusual body movements, and ambiguous words and uncertain phrases. On the other hand, the findings also show that there are cultural patterns that influence how lies are expressed, including nonverbal cues, verbal cues, psychological and emotional cues, and cultural and social norms. Cultural differences influence how individuals express and detect lies, with some cultures being more likely to use non-verbal cues while others focus more on verbal cues.

The intersection of linguistic and cultural patterns in lie detection highlights the need for a culturally sensitive approach. Linguistic patterns are deeply rooted in cultural norms, and their interpretation depends on understanding the cultural context. By examining how these two elements influence each other, researchers and practitioners can develop more accurate and equitable methods for detecting lies in cross-cultural settings. This is especially critical

in multicultural regions like Southeast Sulawesi, where cultural and linguistic diversity adds complexity to communication and deception.

The relationship between linguistic and cultural patterns in lie detection is deeply interconnected, as both elements shape how individuals communicate, interpret cues, and perceive deception. Combining linguistic analysis and understanding cultural context can increase accuracy in detecting lies in a multicultural setting. The implication of the results of this study is the importance of considering these two aspects in various contexts other than language principles, including law enforcement, international business interactions, and intercultural communication. Some limitations of the current study are related to the limited number and diversity of participants, the limitations of the cultural context, qualitative methods, and subjectivity of interpretation, and the fact that the study only focuses on linguistic and cultural parameters. Thus, some recommendations that can be put forward for further research are expanding the number and variety of participants, testing the model in other cultural contexts, integrating with psychological or neurological approaches, exploring different communication contexts, developing AI-based technologies, or conducting longitudinal studies.

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