CAN ARTIFICIAL INTELLIGENCE INTERPRET EMOTIONS?

TECHNOLOGY VS EMOTIONAL COMPLEXITY IN HEALTHCARE INTERPRETATION

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Content

Introduction

Interpreting is not only about transferring a message from one language to another, but also involves understanding cultures, identities and cultural dimensions, as well as universal emotions (Fidalgo González, 2019).

In healthcare contexts, the emotional dimension and intercultural sensitivity (Bennett, 1986) are central to the clinical relationship:

- intercultural mediation
- emotional regulation.

Artificial intelligence (AI)-based technologies

Understanding, interpreting or expressing human emotions in an appropriate and culturally sensitive way

Fidalgo González, L. M. (2019). El intérprete en los servicios públicos: conocer al otro para vivir en la intersección. Traducción y sostenibilidad cultural, 149-156.
Bennett, M. J. (1986). A developmental approach to training for intercultural sensitivity.International journal of intercultural relations, 10(2), 179-196.

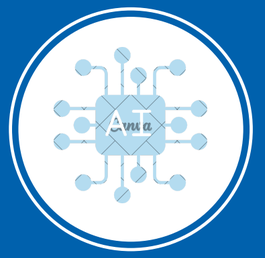
Aim of the presentation

Compare

the ability of human and AI systems to understand discourse nuances

Analize

types of emotions
cultural factors
discourse markers



Advocate

a critical view of the advantages and limitations of the use of AI in interpreting

Emotional dimension and intercultural sensitivity

The affective dimension, often referred to as intercultural sensitivity, deals with the emotional competence and responsiveness of individuals when engaging across cultures.

Emotional competence is characterized by the ability to generate and receive positive emotional responses before, during, and after intercultural encounters (Chen & Starosta, 1996).

Chen, G.-M. and Starosta, W.J. (1996) Intercultural Communication Competence: A Synthesis. Communication Yearbook, 19, 353-384.

AI-based technologies in T&I

Exponential growth of AI in translation and interpreting

- **Health chatbots**: assess symptoms, offer initial guidance, and refer complex cases.
- **Document translation**: natural language processing and predictive analytics.
- **Wearable devices**: monitor patients and personalise treatments.

AI-based technologies in T&I

PREVIOUS RESEARCH

ADVANTAGES

Decision-making assistance: additional information about how patients perceive the conversation

LIMITATIONS

- Lack of genuine empathy.
- Cultural adaptation challenge.
- Inability to communicate non-verbally through NVC elements.

Analysis

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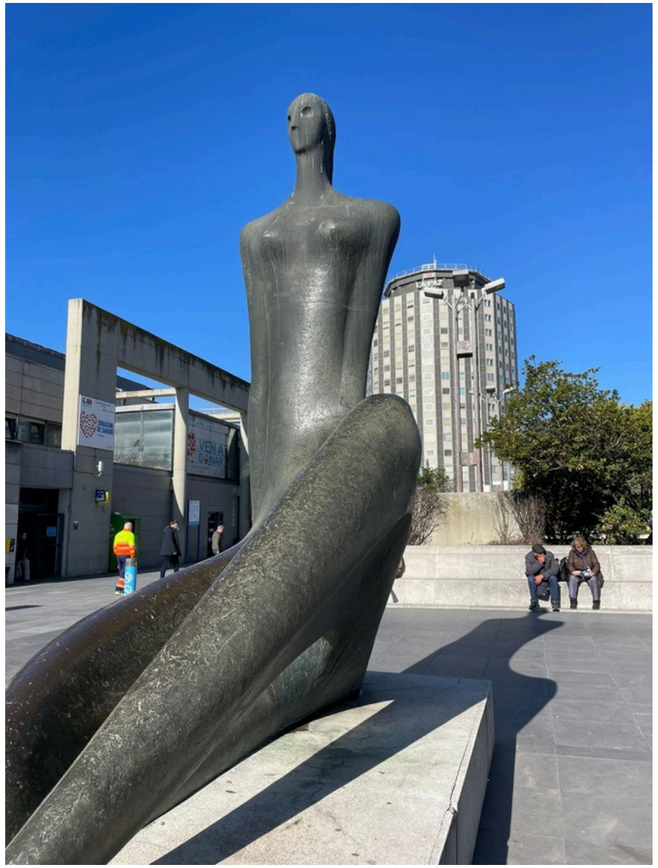
NATIONAL RESEARCH PROJECT
INTERCULTURAL COMPETENCEE IN FEMALE HEALTHCARE INTERLINGUISTIC COMMUNICATION

- Free interpreting service
- Analyze recordings
- Define healthcare intercultural competence
- Training programme for healthcare professionals



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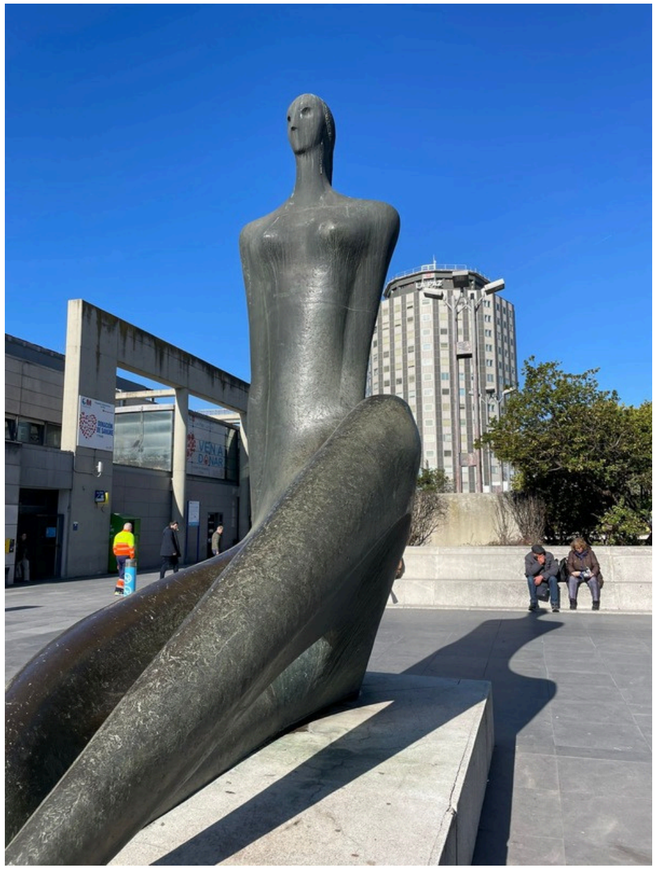
RESULTS

- 41 recordings

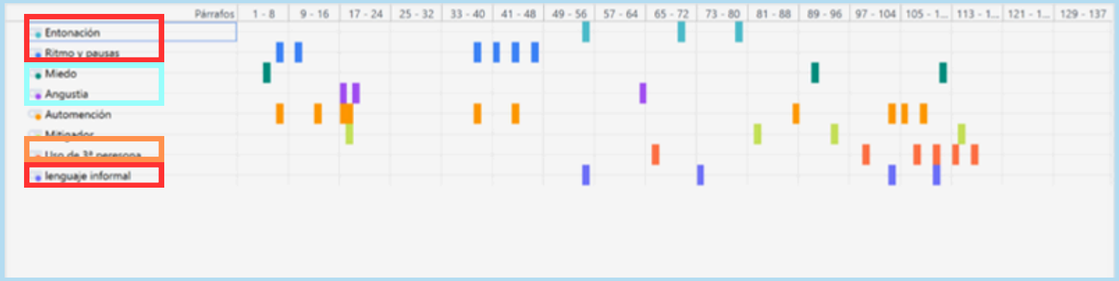


Analysis

3 analysis dimensions:

- **Emotions:** joy, anxiety, fear, surprise, anger and disgust.
- **Cultural factors:** intervention and silence, rhythm and pauses, listening, intonation, authority and colectivity.
- **Discourse analysis:** certainty, mitigation, behaviour, relation and self-reference.

Results



Patient/Family Emotions:

- **Concern/Anxiety:** The patient's initial questions immediately after the doctor's explanation reveal significant concern about the child's condition and the proposed treatment. They ask directly, "La operación es difícil? ¿Cuál es su probabilidad de éxito?" 64, indicating worry about the complexity and outcome of the surgery. This anxiety is further highlighted by their question about the origin of the infection: "¿esta bacteria de donde viene?" 91, suggesting a desire to understand and perhaps prevent further complications.
- **Fear/Distress:** The doctor's statement that the child "fallecería" 35 if the operation is not performed would undoubtedly evoke strong fear and distress in the parents. Although not explicitly stated by the patient in Spanish, the gravity of this statement implies a high level of emotional impact.
- **Relief (potential/implied):** While not explicitly stated, the patient's final "Gracias" 122 after the interpreter explains the availability for future translations could imply a sense of relief at the prospect of continued clear communication and support during a difficult time.

Medical Team Emotions (Doctor and Interpreter):

- **Informative/Explanatory:** The doctor's primary role is to convey complex medical information in an understandable way. Their language is factual and descriptive, explaining the heart's anatomy 7 10, the child's specific condition 18 21 24 47 52, the surgical plan 29 58 61, and recent complications 70 73 76 79 82 85 88 103 108. This suggests a professional and empathetic approach aimed at educating the parents.
- **Reassuring/Empathetic:** Despite the seriousness of the situation, the doctor attempts to offer reassurance, noting that "hay mucha experiencia en este hospital" 67 regarding difficult surgeries. This statement aims to alleviate some of the parents' anxiety about the operation's difficulty. The doctor also provides clear timelines for the surgery, contingent on the infection clearing, which can help manage expectations and provide a sense of control 114.
- **Direct/Serious:** The doctor is direct about the necessity of the surgery, stating, "hay que hacerlo" 32 and "Porque si no, fallecería" 35. This directness, while potentially alarming, is crucial for conveying the urgency and severity of the child's condition.
- **Practical/Supportive:** The interpreter's role is to facilitate communication, and their responses reflect a practical and supportive stance, ensuring the parents understand the medical information and the logistical details, such as their availability for future translations 120 124 126 129 133 137.

In summary, the transcript primarily reveals the parents' understandable anxiety and concern regarding their child's critical health issues and the proposed surgery, while the medical team focuses on providing clear, factual information and reassurance within a professional framework.

Emoción	Fragmento representativo	Intensidad	Comentario contextual
Miedo / Angustia	"Porque si no, fallecería." / "¿La operación es difícil?"	Alta	Emoción dominante ante riesgo vital infantil
Sorpresa	"Ayer, de repente, Mohammed se puso malo."	Media	Noticia inesperada sobre el empeoramiento
Asco (implícito)	"Tiene una infección en la sangre."	Baja	Posible reacción fisiológica, no expresada
Enfado	—	—	No presente
Alegría / Alivio leve	"Gracias."	Muy baja	Cierre educado, no eufórico

Elemento	Descripción	Función comunicativa
Intervenciones y silencio	Turnos respetados, silencios reflexivos y técnicos	Facilitan comprensión y contención emocional
Ritmo y pausas	Lento, marcado en puntos críticos	Permite asimilar información delicada
Escucha	Atenta, sin interrupciones, validando preguntas	Refuerza empatía y confianza
Entonación	Suave, modulada, enfatiza seriedad y calma	Transmite seguridad profesional
Autoridad	Basada en conocimiento, no imposición	Da credibilidad y calma al interlocutor
Colectividad	Uso del "nosotros" y referencias al equipo médico	Transmite apoyo institucional y cooperación

Categoría	Ejemplos representativos	Función pragmática principal
Marcadores de certeza	"Tiene...", "Hay que hacerlo.", "Está con antibióticos."	Transmiten seguridad y autoridad médica
Mitigadores	"Pensamos que...", "Si todo va bien...", "Yo creo que..."	Suavizan la dureza de la información o la incertidumbre
Actitudinales	"A ver", "Vale", "Claro", "Es necesario..."	Expresan valoración, guía o actitud empática
Relacionales	"¿Vale?", "Les llamaremos", "Gracias"	Refuerzan cercanía y cortesía interpersonal
Automenciones	"Yo creo...", "De mi parte...", "Les informaré"	Refuerzan el rol del hablante y su responsabilidad comunicativa

Results

Emotions (Evans, 2001)	Human analysis	Chat GPT	AI-Maxqda
Alegría	2	2	1
Angustía	3	6	9
Enfado	0	0	0
Miedo	4	6	4
Sorpresa	1	3	1
Asco	0	0	0

Cultural factors	Human analysis	Chat GPT	AI-Maxqda
Intervenciones y gestión del silencio	10	5	14
Ritmo y pausas	13,5	3	12
Escucha	3	6	17
Entonación	3	6	0
Autoridad	1	6	33
Colectividad	2	8	2

Categories (Garofalo, 2025)	Human Analysis	Chat GPT	AI-Maxqda
Marcadores de certeza	4	13	6
Mitigadores	4	12	4
Marcadores actitudinales	2	9	2
Marcadores relacionales	8	9	8
Automenciones	22	12	8

Examples of AI's analysis

- **Joy:** Doctor: "Ok? All right. Have a splendid weekend."
- **Fear:** During the explanation of the informed consent: "...they will take out the breast and the tissue of the axilla..."

- **Rhythm and pauses**: Pauses for interpretation and after shocking messages
- **Authority**: "We will try..."

Markers of certainty: "You will have an appointment for a blood test."
Automentions: I will give you informed consent

Evans, D. (2001). Emotion: The science of sentiment. Oxford University Press, USA.
Garofalo, G. (2025). El discurso de las instituciones biosanitarias en torno a la salud femenina: Un análisis asistido por corpus del metadiscurso interpersonal. CÍRCULO de Linguística Aplicada a la Comunicación, 103, 215

Analysis comparation

HUMAN

- Primarily intended for linguists and for the training of interpreters.
- The accuracy of discourse analysis depends entirely on the researcher’s expertise and training.
- Human understanding of communicative subtleties (diminutives, third person, use of the plural).

AI-MAXQDA

- It provides a clear overview of the emotions.
- It highlight the specific segments where such emotions.
- AI may help prepare for emotionally demanding situations.
- Unable to analyse dialects and two languages at the same time.

CHAT GPT

- Is only able to register and cuantify some emotions.
- Regarding cultural factors, it can provide some examples of all categories but is not able to provide an exhaustive analysis.
- Regarding discourse analysis, the engine can cuantify but doesn’t provide examples for all of them.
- Unable to compare all 3 analysis

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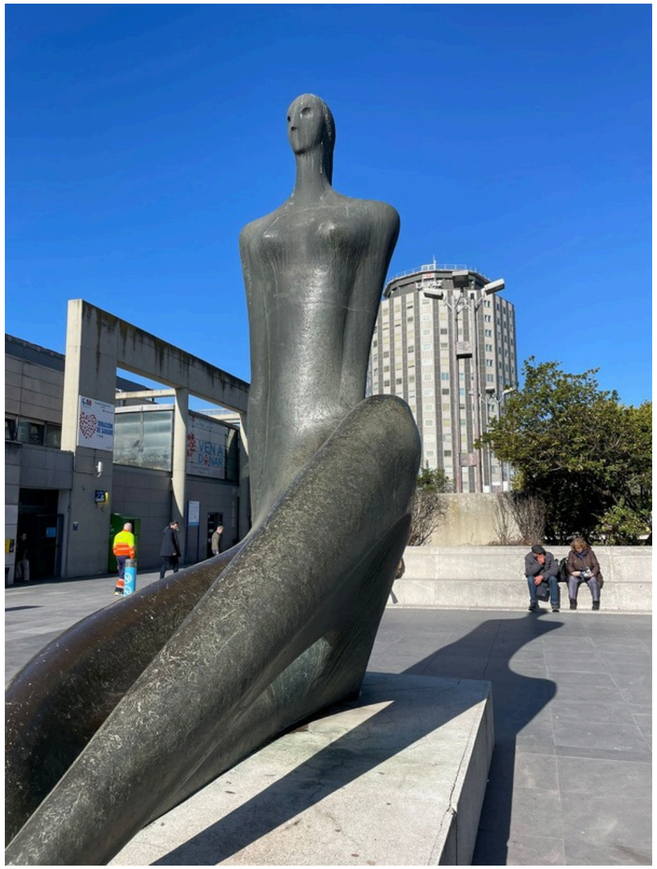
CONCLUSION

Limits of AI and discourse analysis tools (AI-Maxqda and ChatGPT)
+ importance of human affective presence

- High emotional impact
- Unaccompanied patients
- Culturally sensitive issues

THE INTERPRETER ACTS AS MORE THAN A TRANSLATOR: THEY BECOME AN EMOTIONAL MEDIATOR, A CULTURAL BRIDGE, AND SOMETIMES A SOURCE OF COMFORT.



THANK YOU!
GRAZIE!

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