

Interpreting in Interrogations and in Court: Experimental Insights for Best Practice

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Why these questions require research attention

- Most prevalent global languages: English (76.8%), Mandarin (1.6%), Arabic (1.3%), Cantonese (1.2%), Vietnamese (1.1%), and Spanish (0.5%)
 - Australia: 20% speak a language other than English at home; 3% non-English
- Increased human mobility across national boundaries
- Increased demand to enhance national security, ensure justice processes, avoid miscarriages of justice
- Distance, time and efficiency, globalisation of legal practice
- Impact of interpreting on:
 - Right to confront accusers, to be heard
 - Quality of evidence adduced
 - Credibility of speaker
- Technological advances, remote interpreting without established criteria on need for interpreter; selection of interpreter; performance of interpreter
- Risks to justice: bias, miscarriage of justice
- Little known about ways to manage risks and limitations to guide policy

Absence of transnational legal standards

Case example:

Five Japanese nationals arrested for heroin importation.

- Suspect interviews conducted with the same interpreter for all 5 defendants, used simultaneous mode.
- All defendants convicted, appealed due to interpreting inadequacies.
- Prosecution: “merely grammatical errors,” defendants still gave their version, no denial of right to defend themselves.
- Transcripts showed interpreter summarised, omitted information, asked her own Qs, made errors in translation.

UN High Commissioner for Human Rights disagreed:

Poor interpreting “unfairly undermined their **credibility**;
interpreters must be “**fully competent for the task**”

- Convictions overturned (*Katsuno, Masaharu et al. v. Australia*, 2006)

Need for policy reform in the justice sector

Recent UK legal interpreting crisis

- Justice Select Committee criticised the Ministry of Justice for failing to understand the **complexity of interpreting**.
- “Flagrantly disregarded” need for **appropriate qualifications** and criminal record checks.
- A near-monopoly of courtroom interpreting in England and Wales by one company Applied Language Solutions that paid “lip service” to many regulatory obligations in order to **cut costs**.
- **Privatisation** of legal interpreting services “shambolic.”
- MPs say it caused suspects to be remanded unnecessarily in custody and **trials to collapse**.
- Ministry of Justice reported over 2,600 trials adjourned 2011-2015 due to **failures in interpreting service**.

Contextual research challenges

Misconceptions about interpreting skill

- Verbatim literal vs pragmatic equivalence (close in meaning)
- Confuse bilingual and interpreting skills

Failure to separate bilingual from cultural competence

- Lack of matching terms between languages - interpreting skill

Established default practice modes not evidence-based

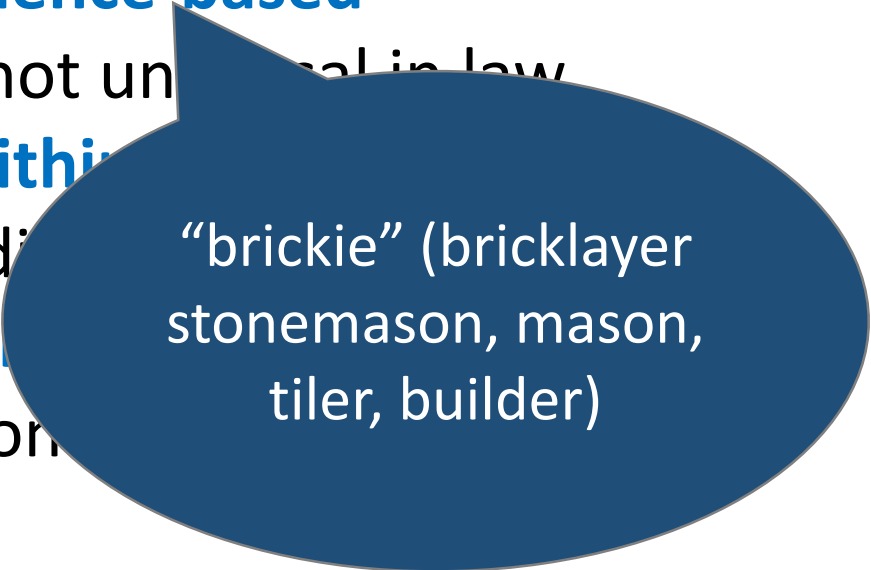
- Habituation vs EBP; consecutive mode not universal in law

Interpreting is a new academic discipline within

- Professionalisation, ethics codes, accreditation

Difficulty assessing errors and accuracy, identifying

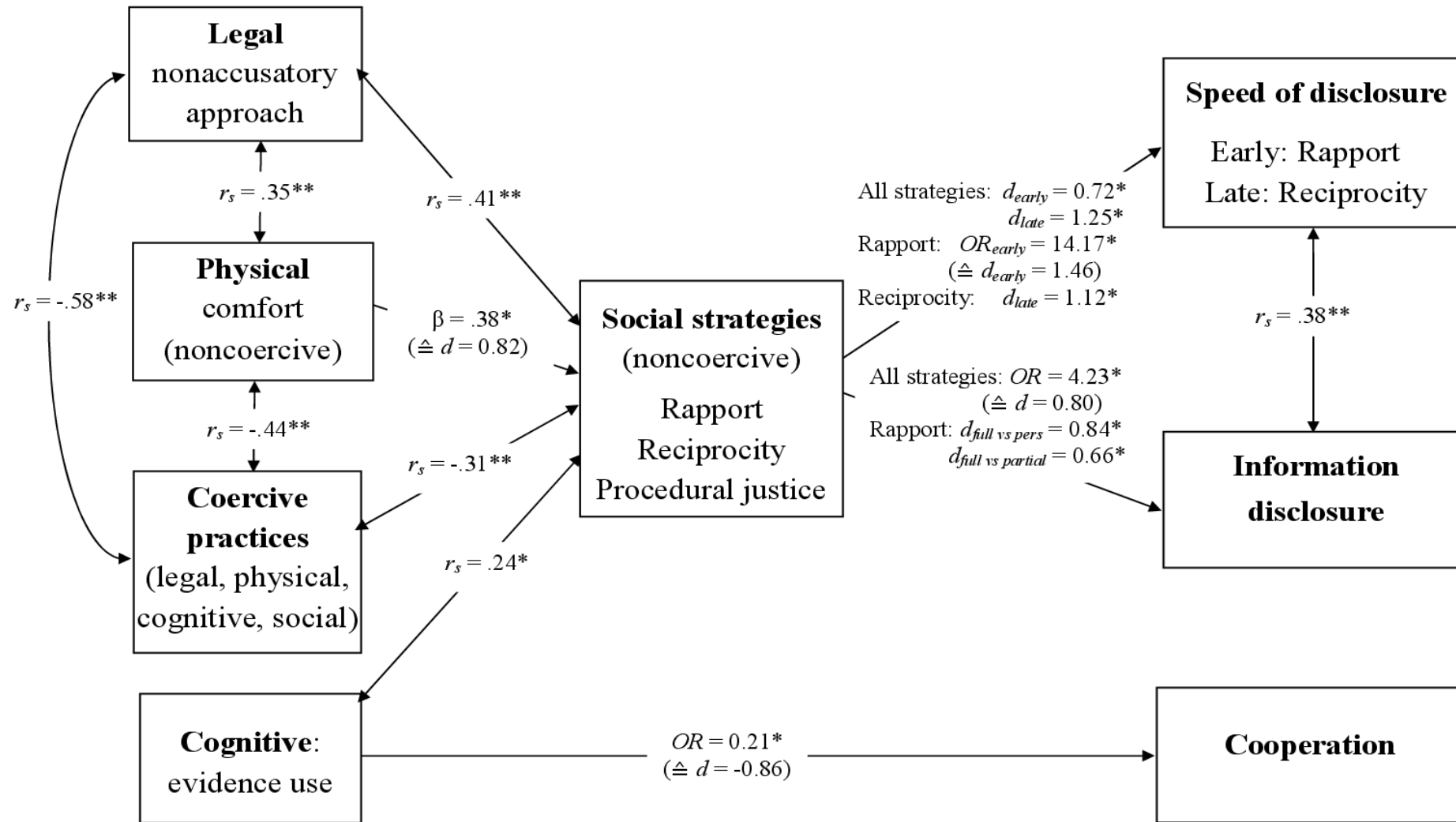
- Errors in cases hidden; little consensus on



“brickie” (bricklayer,
stonemason, mason,
tiler, builder)

Police interview practice: physical environment

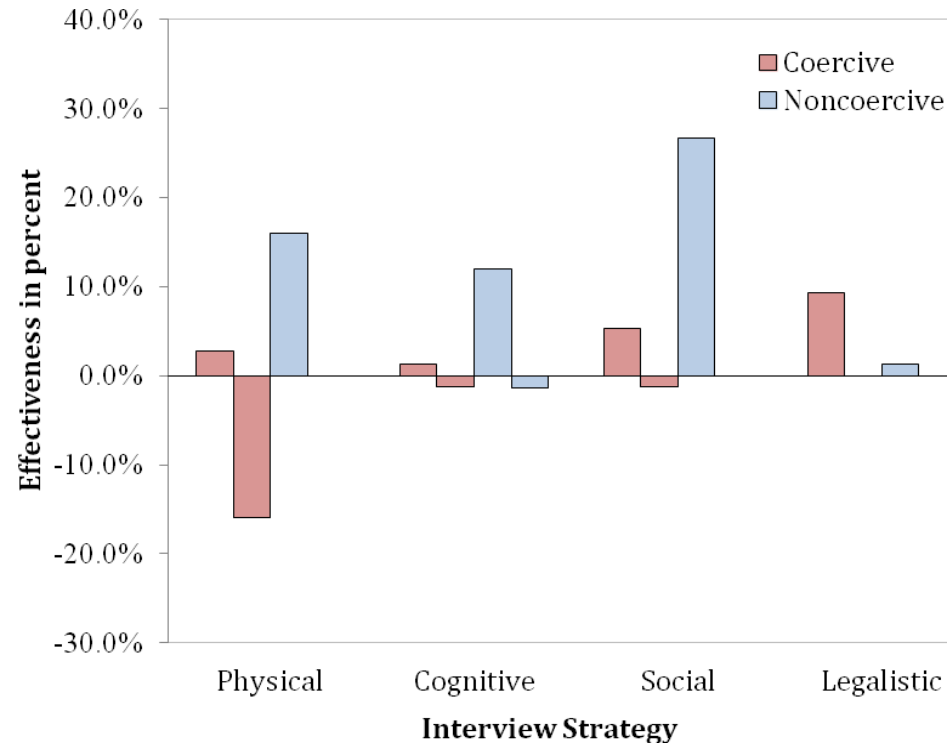




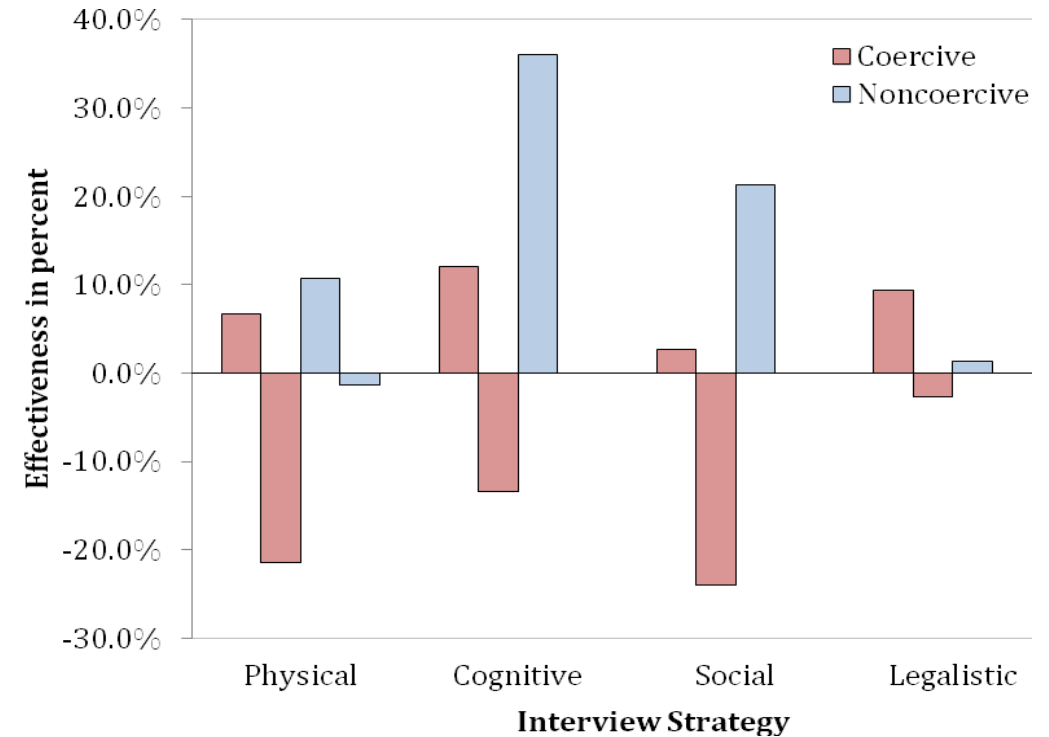
Results for **Interaction Process Model** displaying individual correlational and causal **relationships between interview strategies and outcomes** (sig results only). Goodman-Delahunty, J., Martschuk, N., & Dhami, M.K. (2014). Interviewing high value detainees: Securing cooperation and disclosures. *Applied Cognitive Psychology*, 28(6), 883- 897. doi: 10.1002/acp.3087

Questioning strategies associated with cooperation and disclosures

Cooperation



Disclosure, admissions



Effective strategies = positive values; ineffective strategies = negative values.

Goodman-Delahunty, J., & Martschuk, N. (2018). Securing reliable information in investigative interviews: Coercive and noncoercive strategies preceding turning points. *Police Practice and Research*.

<https://www.tandfonline.com/eprint/PiuJUUnhmi4w6tAGSnEv/full>

Context for research on interpreting

Right to a competent interpreter in interviews and in court:

- European Parliament and Council of Europe mandate interpreters “fully competent for the task assigned” (ImPLI Project, *Improving police and legal interpreting: Final report*. 2012, Institut de Management et de Communication Interculturels)
- Vulnerable persons at critical junctures in the justice process.

Interpreter skills vary:

- Bilinguals have uneven language competencies.
- No training prerequisites for interpreter practice and accreditation.

Nascent codes of professional and ethical practice:

- Unobtrusive; neutral; no opinions, summaries, edits, side-bars.
- Emerging specialisation in legal interpreting (Lai & Mulayim 2014).

Little rigorous testing of remote interpreter performance

Research on interpreter competence

- Interviewers in the field rate interpreter use as 'high risk': inaccuracies, loss of rapport, loss of control (Goodman-Delahunty & Martschuk, 2018).
- Lexical choices by interpreters shifted perceived guilt of suspect
- More credible in consecutive mode; monolingual like simultaneous (Hale et al., 2017).
- Most research on interpreted interviews examines propositional content, not key tasks such as rapport, coordination of turn-taking.
- Small scale discourse analyses show interpreters may interfere with police interviewing techniques to various degrees (Lai and Mulayim 2014; Nakane 2014).
- Practitioners disagree about the best placement of the interpreter in an interview; behind or adjacent to the suspect (Goodman-Delahunty et al. 2013).
- No study compared performance of trained interpreters vs. untrained bilinguals who are often called to interpret in police interviews, i.e., in house agents.
- Whether interpreters reproduce rapport-building strategies by interviewers is largely unknown (Goodman-Delahunty & Howes, 2017).

Diverse literatures may inform the research

Cognitive load theory

Credibility assessment in legal proceedings – deception detection

Criminal procedure

Cross-cultural differences

Decision making

Discourse analysis

Group decision making

Heuristic-systematic processing

Human rights

Interpreting modes

Investigative interviewing

Legal cases, within and across jurisdictions

Language policy

Medical interpreting

Presence

Procedural fairness

Rapport in communications

Social persuasion

Research questions and independent variables

- **Factors that facilitate or impair accurate legal interpreting**
 - Mode: no uniformity re consecutive v simultaneous interpreting
 - Duration: Fatigue, 30 vs 90 minute practice standards by mode
 - Cognitive load assumptions by interpreting mode, language type
 - Culture and language type (English, Mandarin, Arabic, Spanish)
 - Interpreter presence: in-person, videolink, telephone
- **Independent and interactive effects of interpreting accuracy and perceived credibility on outcomes of legal proceedings**
 - Tests of mode on accuracy limited and contradictory
 - Consecutive more accurate in court, simultaneous out of court
 - Performance drop in both modes for leading questions
- **Comparative analyses in a live simulated interviews or trials**
 - Qualitative and quantitative methods

Interpreting in police interviews

- Motivating cooperation in high stakes interviews is a central professional challenge.
- Interaction Process Model (Moston et al., 1992)

Dynamic, interviewer and interviewee

- Predictor variables:
 - Legalistic (information gathering, accusatory)
 - Physical comfort (comfortable, neutral, uncomfortable)
 - Cognitive use of evidence (none, deliberate use of evidence)
 - Social (degree of use of rapport, reciprocity, procedural fairness)
 - Coercion (noncoercive, psychological, physical, both)
- Rational persuasion vs social influence:
 - low vs high context cultures
- Expanding research on rapport development

Information guide for interpreters on rapport

Rapport in Interpreter Assisted Police Interviews



Guidance developed by Professor M. K. Dhami at Middlesex University (UK) in collaboration with Professor J. Goodman-Delahunty at Charles Sturt University and Professor S. Hale at the University of New South Wales. Sponsored by the FBI. May 2014

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Recognizing and conveying rapport

Verbal rapport-building techniques include...

- using preferred forms of address (e.g., first name or title)
- signaling paying attention (e.g., 'uh-huh', paraphrasing, repetition)
- small talk
- self-disclosure
- colloquialisms
- linguistic hedges and fillers (e.g., 'um', 'you know')
- using particular question types (e.g., questions inviting open-ended answers) and
- using positive language



Non-verbal rapport-building techniques include...

- matching the gestures
- posture and speech rate of the other person
- orienting towards the other person
- nodding and intonations that signal attentiveness
- changing behavior in response to what is being said (e.g., showing empathy by changing tone of voice or posture)
- gentle tone of voice
- not interrupting the other person
- having a relaxed posture, and
- showing kindness and a caring attitude (e.g., by offering a hot drink, asking about the person's welfare)



Suppose...an individual suspected of a criminal offence is interviewed by the police, and your assistance is needed. Some common ways you may interfere in their rapport-building efforts include:

- not conveying what you consider to be irrelevant information,
- converting open-ended questions and answers into yes/no ones,
- relaying a question asked directly (e.g., 'did you go to the shopping mall?' in an indirect format (e.g., 'he asked if you went to the shopping mall'), and
- having a brief private conversation with each of them or by positioning yourself so that you are sitting facing both of them.



Objectives of this information sheet

Interpreters play a very important role in police interviews. Their ability to recognize and convey the rapport-building efforts between the interviewer and interviewee, and avoiding obstructing rapport can be vital to the outcome of a police interview.

After reading this information sheet you should be able to...

1: Recognize rapport-building efforts between the interviewer and interviewee in police interviews.

2: Convey rapport-building efforts between the interviewer and interviewee in police interviews.

3: Avoid inadvertently obstructing rapport-building in police interviews.

Importance of rapport in police interviews

Rapport helps build trust and aids co-operation.

Rapport...

...refers to a smooth and positive interaction between two or more people. Rapport can often be identified by efforts that people make to pay attention to each other, being friendly and showing liking, and mutual coordination (turn-taking) or reciprocity.

Scientific research has revealed that rapport is important because...

...it can facilitate interaction and increase interviewee cooperation. Rapport can enhance the quantity and quality of information provided by an interviewee.

Building rapport

The interviewer will often use rapport-building techniques that are both verbal (e.g., small talk) and non-verbal (e.g., nodding). It is important to recognize when these techniques are being used by both the interviewer and interviewee, and to convey them.

Tips for interpreters

It is not your job to build rapport between the police and suspect, but you ought to avoid interfering with their rapport-building efforts.

Tip 1 - Everything that is said and how it is said is relevant and important to convey.

Tip 2 - Use direct language (i.e., don't use reported speech e.g., 'he said'), so the interaction between the two parties remains spontaneous.

Tip 3 - Do not summarize, edit, filter or add to what is said.

Tip 4 - Do not have any private conversations with either party during the interview, but you can ask each to repeat or clarify what they are trying to convey.

Other issues to consider

Cross-cultural differences



There may be subtle cultural differences in the meaning of some rapport-building techniques, especially non-verbal ones. For instance, avoiding direct eye contact may show lack of consideration in some cultures but respect for authority in others.

Another example is where interrupting someone while they speak may show warmth and caring in one culture but rudeness in another. Similarly, responses such as 'uh-huh' may show attentiveness in one culture but lack of interest in another.

It is important to convey these subtleties if you are aware of them.

Dhami, M.K., Goodman-Delahunty, J., & Desai, S. (2019). Development of an information sheet providing rapport advice for interpreters in police interviews. *Police Practice and Research*, 18(3), 291-305.

Pilot study on sensitisation to rapport

Method

- Developed 2-page guide for interpreters on rapport in police interviews.
- Mixed experimental design tested the helpfulness of the information sheet:
- Intervention Group ($n = 35$) was randomly assigned to read the information sheet before responding to short vignettes about police interviewing foreign non-English speaking suspects about international crimes
- Control Group ($n = 37$) responded to the vignettes.

Results

- Rapport cues perceived by the intervention group exceeded those of controls.
- Groups performed equally well at identifying appropriate methods to convey rapport or avoid obstructing rapport.
- Used feedback from the intervention group on the helpfulness of the information sheet to improve the information sheet before trials with interpreters.

Interpreting risks within interviewer control

Aims of study

- Empirically assess interpreting accuracy:
 - propositional content
 - maintenance of rapport, verbal and nonverbal markers
 - document common interpreting errors or miscommunications
- Compare performance of trained interpreters vs untrained bilinguals
- Test effectiveness of rapport information guidance
- Test effective placement of interpreter in interview setting
- Develop best practices to manage interpreted interviews

Research design

2 x 2 x 2 mixed factorial design

- **Within participants:**

Physical placement of interpreter in interview:

- triangular position vs. behind the suspect

- **Between participants:**

Professional training in interpreting

- trained interpreters vs. untrained ad hoc bilinguals

Advance information guide on rapport maintenance

- provided to half the participants (present/absent)

Experimental materials

- Scripted suspect interview 25-30 mins, rated “very realistic”
- Adapted from a drug importation case:
 - 1kg methylamphetamine at suspect’s home
- Interview: 60 Q & A exchanges, 1650 words
- In-built interpreting challenges:
 - propositional content
 - legal terminology
 - illocutionary force
 - turn-taking management
 - ethical conduct
 - bias
 - side-conversations

Verbal and nonverbal rapport markers

Verbal markers (7)

- Express solidarity, commonality
- Self-disclosures by interviewer
- Strategic use of interviewee first or last name
- Ease attempts to make the suspect comfortable
- Check interviewee understanding
- Acknowledge replies, active listening
- Direct approach (1st or 2nd person vs 3rd person)

Nonverbal markers (4)

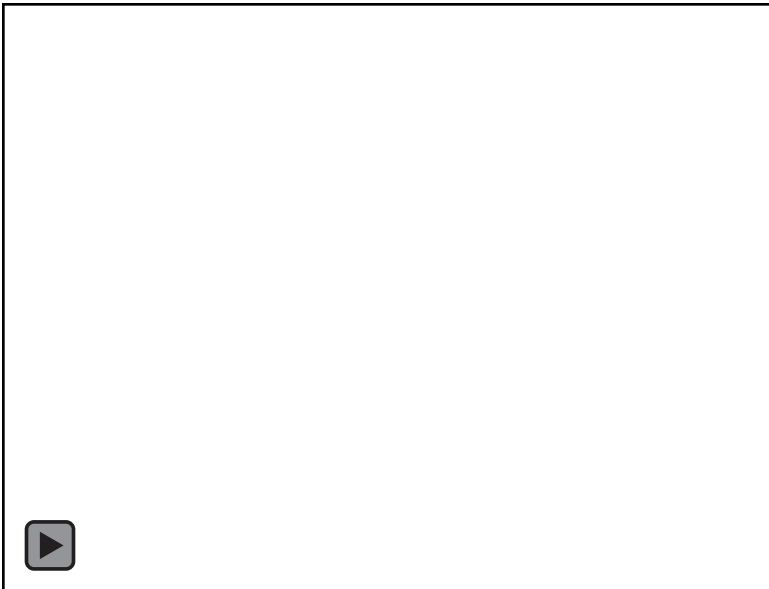
- Pace
- Tone of voice
- Emotional variation
- Facial expression

Examples of types of verbal rapport markers

Solidarity	'We understand how it is in your country'
Ease attempts, colloquialisms	Assurances to make the suspect more comfortable, e.g. , 'trust me,' 'don't worry'
Politeness	Please, thank you, indirectness, e.g., 'Could you please tell me what they found'
Acknowledgement	'Okay,' 'right,' 'that's right.'
Suspect name	Carlos; Mr Lopez
1 st and 2 nd person	'I would like to ask you'; 'What do you say...'
Self-disclosure	'I have a 6 year old son, too'

Procedures

- Recruited 100 English-Spanish interpreters in Sydney area
- Pre-experiment questionnaire: interpreter's role; formal training, accreditation, experience
- Attended NSW Police facility/university, paid \$100 for time
- Video-recorded, transcribed, nonverbals rated live
- Scored accuracy of verbal and nonverbal markers of rapport



Participant sample:

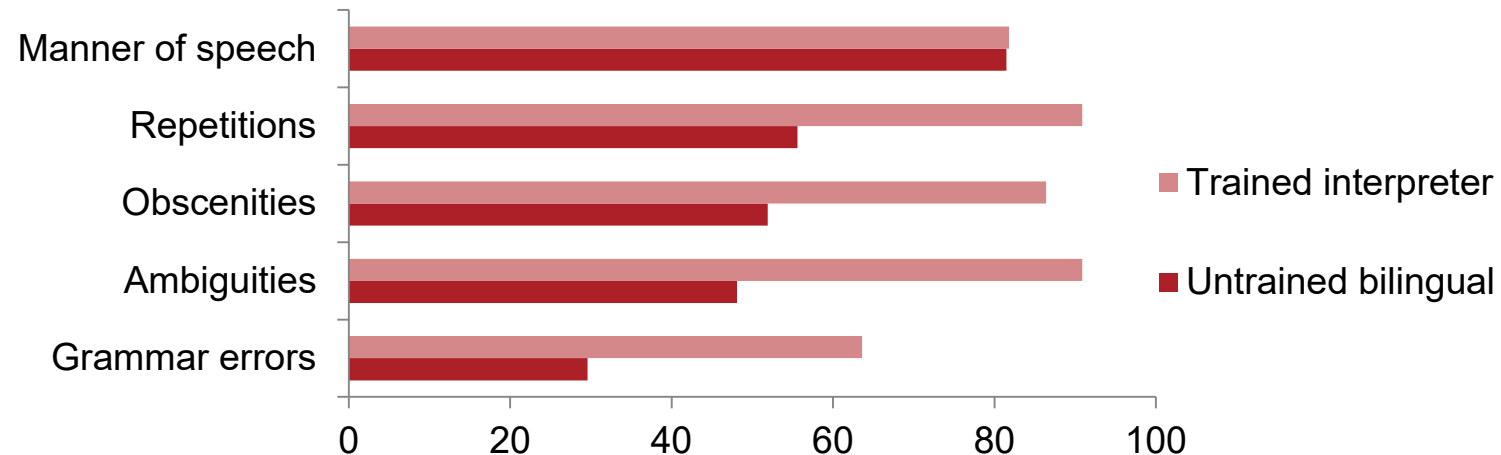
45% trained interpreters
55% untrained bilinguals

Professional actors role-played
interviewer and suspect – blind to
interpreter background

Results: Perceived role of interpreters

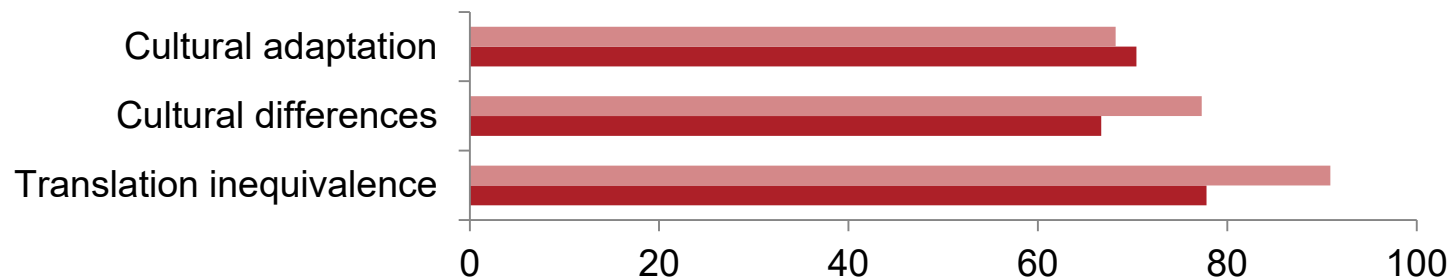
Trained interpreters more likely than bilinguals to perceive **role as neutral** and duty to **report everything** said (89 vs 57%)

An interpreter should reproduce ...



Alert re...

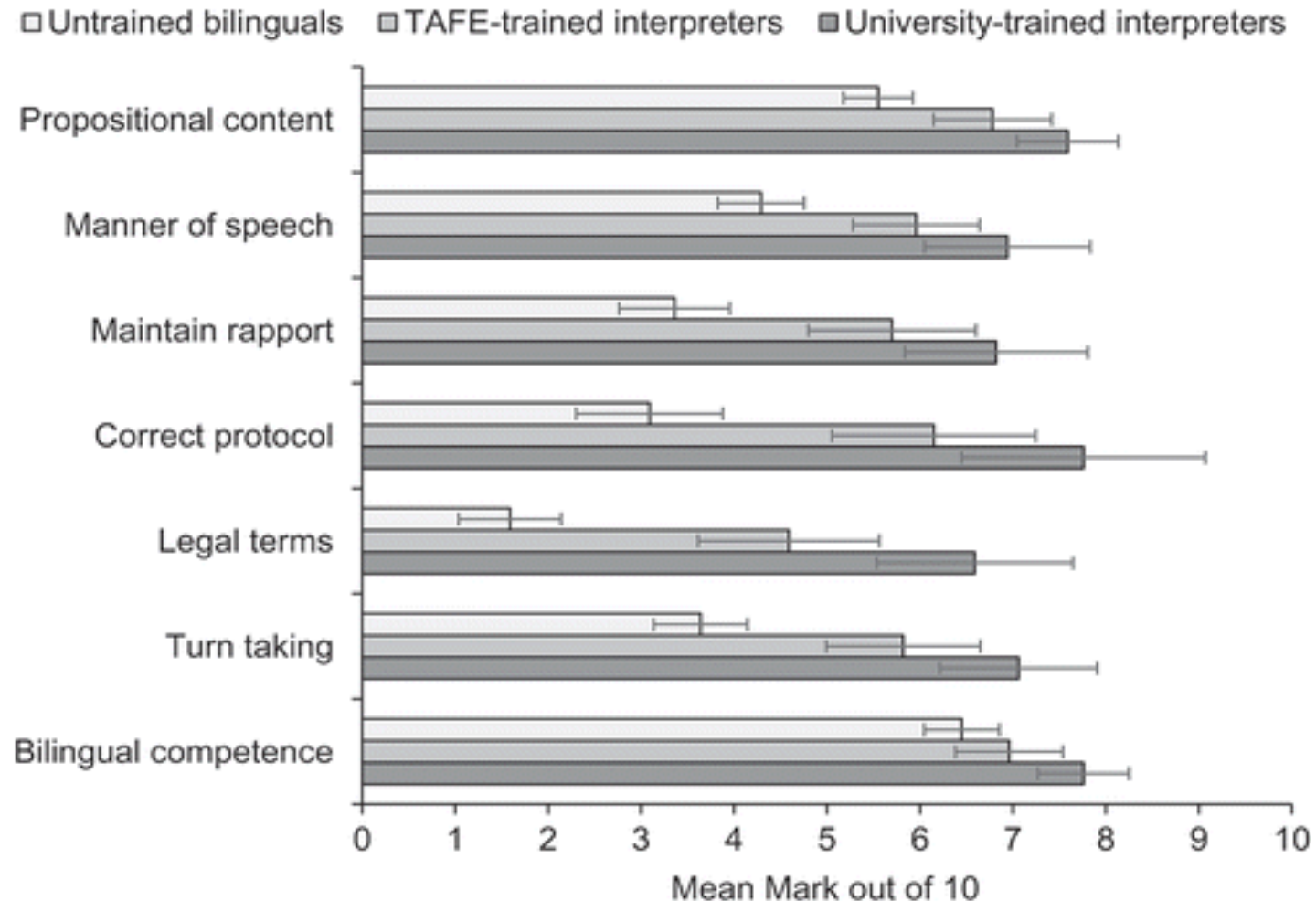
Percent 'agree' and 'strongly agree'



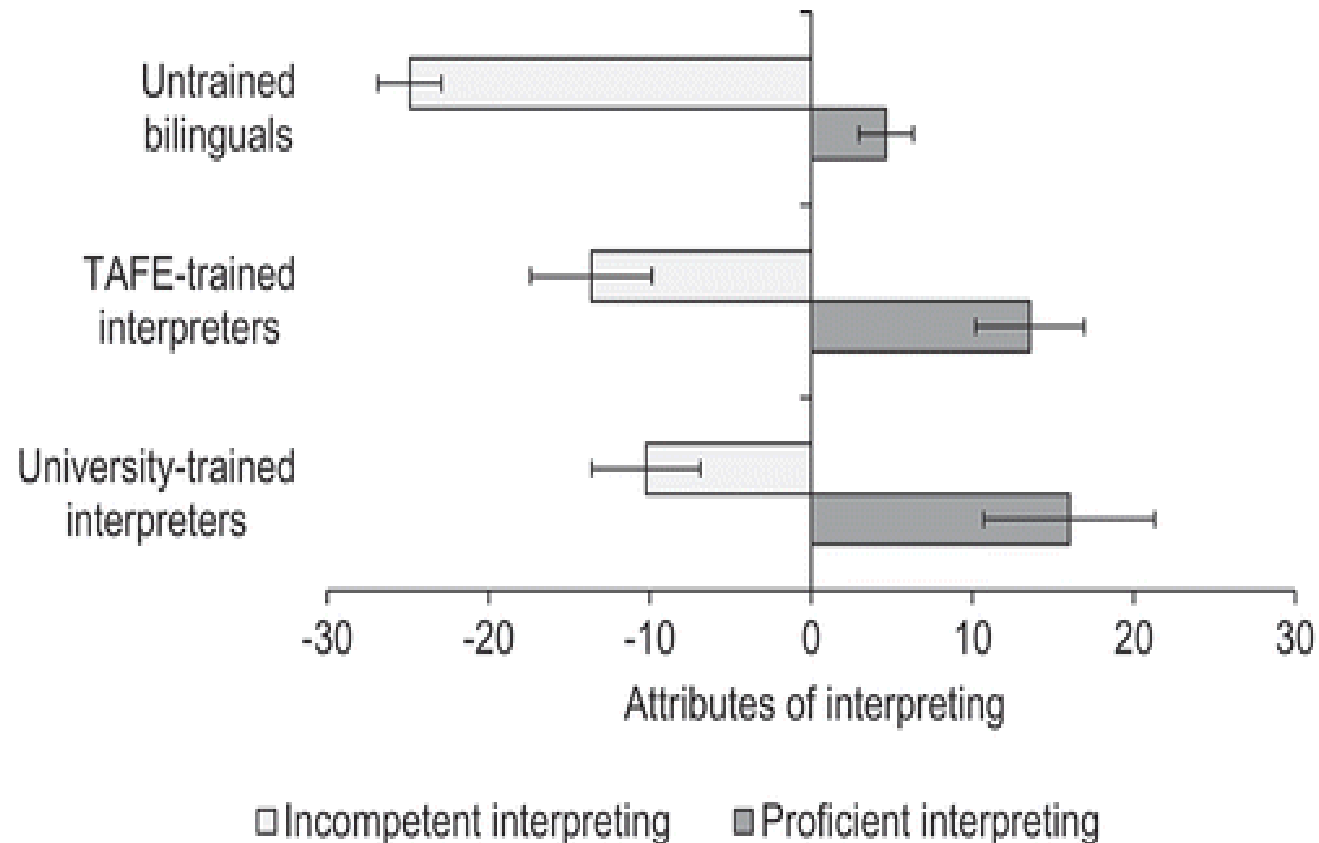
Attributes of interpreting proficiency

Criteria	Mark out of 10	Weighted mark
Accuracy of propositional content	10	30
Accuracy of style	10	15
Maintain verbal rapport markers	10	15
Use correct interpreting protocols	10	10
Legal discourse and terminology	10	10
Management and coordination skills	10	10
Bilingual competence	10	10
Total mark	70	100

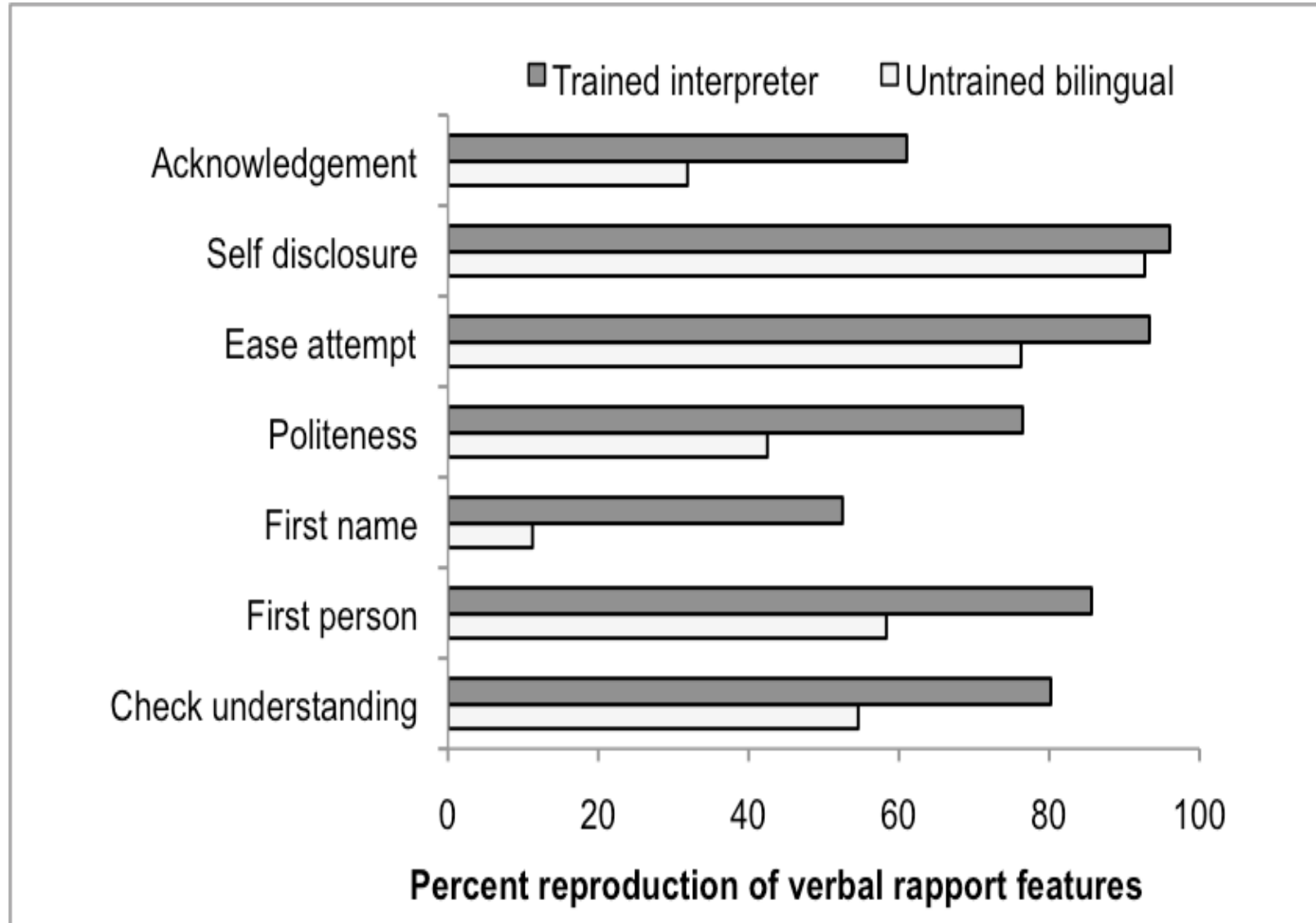
Interpreting performance of trained vs untrained interpreters: Mean marks out of 10



Attributes of interpreting proficiency by untrained bilinguals, TAFE and university-trained interpreters



Mean maintenance of verbal rapport by group



Examples of failure to maintain rapport markers

Marker	Error
Change of “footing”	Interpreter aligns with interviewer, changes ‘I’ to ‘We’
Indirect, change of grammatical person	‘I would like to ask you’ to ‘He would like to ask you’ ‘What do you say...’ to ‘He wants to know what you say...’
Side conversation	Interpreter has a conversation without interpreting to the other party; excluding ruptures rapport
Omission	Interviewer: ‘Can you please ask him what they found?’ Interpreter omits preface ‘What did they find?’

Results: Verbal rapport markers

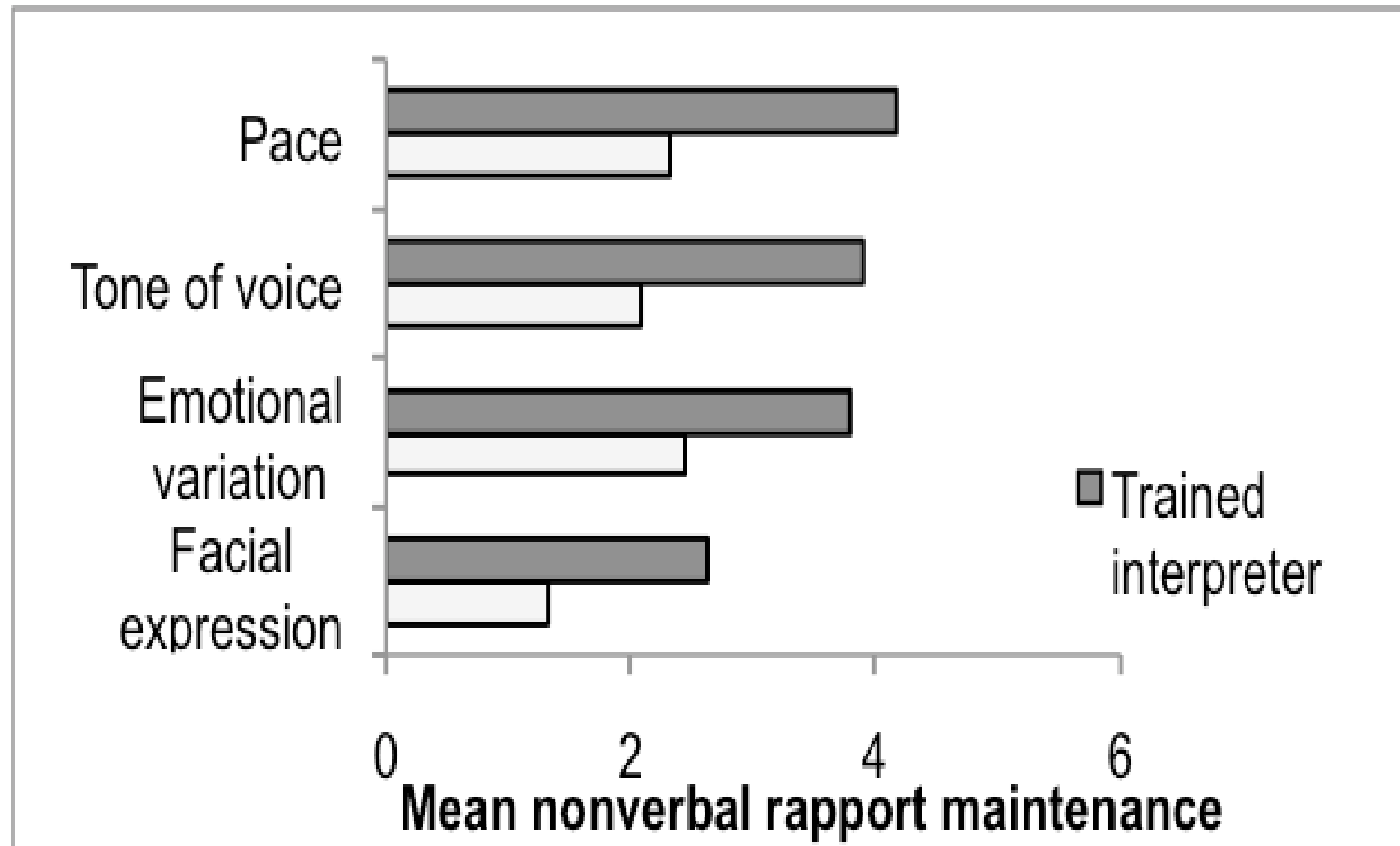
Overall:

71% of the verbal rapport markers maintained; 29% omitted

Effect formal training in interpreting:

Trained interpreters significantly more likely to maintain verbal rapport markers $M = .85$ ($SD = .16$) than untrained bilinguals $M = .60$ ($SD = .16$); $F(1, 90) = 59.10, p < .001$

Accuracy of nonverbal rapport maintenance



Results: Nonverbal rapport markers

Trained interpreters significantly more accurate than untrained bilinguals at maintaining:

- Pace $(d = 1.48, p = .001)$
- Variation in tone of voice $(d = 1.54, p = .001)$
- Vocal emotion $(d = 1.18, p = .001)$
- Mimic facial expressions $(d = 0.87, p = .022)$

Cohen (1988) $d = .22$ is interpreted as a “small”, $d = .51$ as a “medium”, and $d = .83$ as a “large” effect size. Effect size d indicates by how many standard deviations two groups differ from each other.

Errors by untrained bilinguals

50% of attempts to build rapport omitted

- Indirect rather than direct style
- First person to second person ('I/we' vs 'you')
- Alignment with a party, police or suspect
- Respond personally to suspect, alienating the interviewer from the interviewee
- Omit acknowledgments
- Omit ease attempts, empathy

Summary of interpreting by training level:

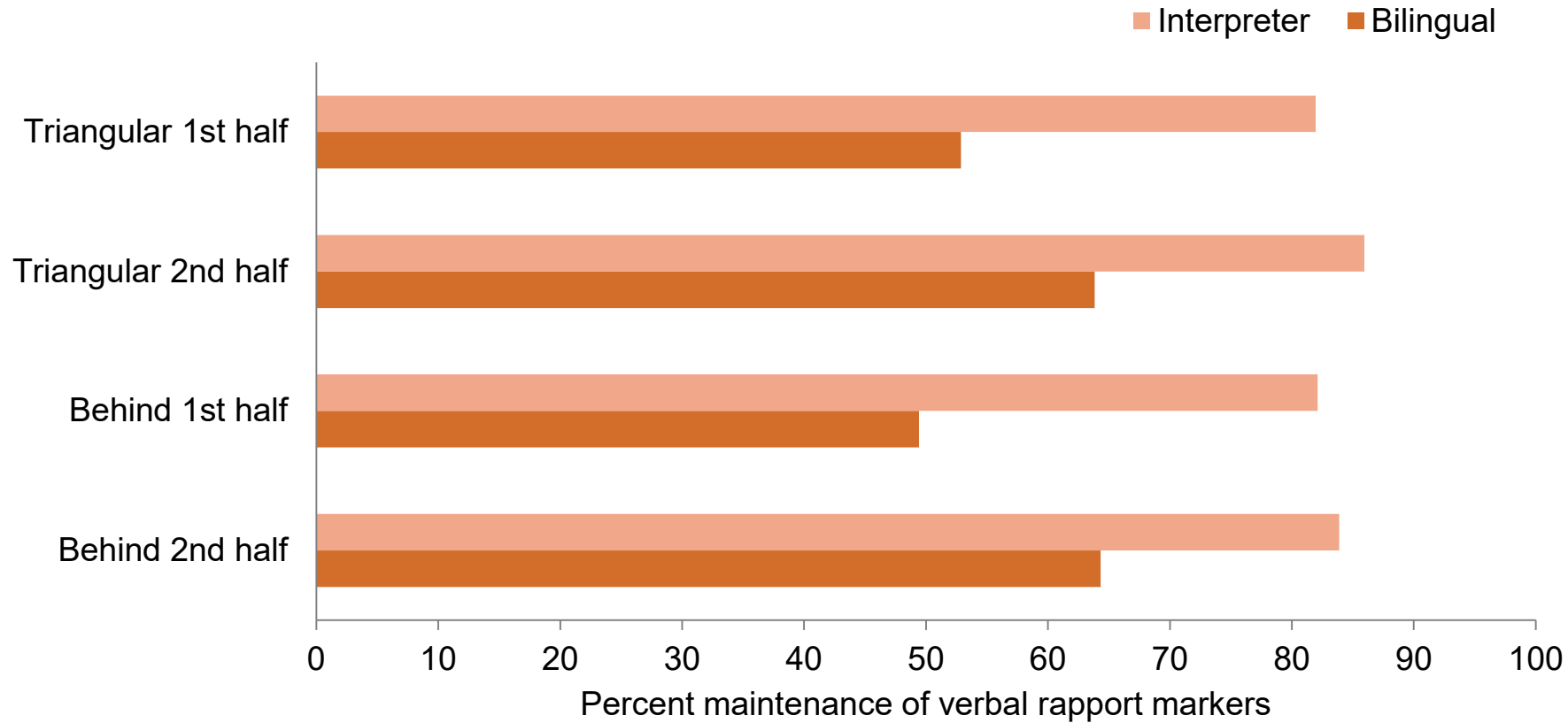
Ad hoc interpreters and untrained bilinguals:

- Less aware of verbal and nonverbal rapport markers
- Maintained about half of the rapport markers
- Used inappropriate colloquial and powerless speech styles
- Failed to explain their role or establish ground rules
that all statements would be interpreted
- Use of first and second person
- Breached ethical guidelines on impartiality
- Did not interpret all utterances
- Less confident

Trained interpreters:

- Sensitive to rapport, maintained 4 out of 5 rapport markers

Interpreter placement and rapport information sheet



The rapport intervention increased verbal rapport and correct protocol use among bilinguals, had no effect on trained interpreters. Trained interpreters outperformed bilinguals on rapport maintenance irrespective of presence of rapport guide.

Overall summary

Formally trained interpreters:

- more likely to perceive their role as neutral
- outperformed bilinguals on all measures of accuracy

Understanding of the role accounted for 37% of observed differences in proficiency.

Training predicted:

- fewer errors and omissions ($d = -1.98$)
- better maintenance of verbal rapport ($d = 1.56$),
- better nonverbal communication on all four measures:
- maintenance of 4 out of 5 rapport strategies (80%)

Interpreter placement of less concern than formal training and familiarity with legal interpreting

Sources of conflicting findings on interpreter use

- Tasks lack realism, or speech sample is too brief
- Training and proficiency of interpreters not considered (Hale et al, 2018)
- Diverse methods: qualitative, quantitative tested few interpreters (6 in Ewens et al, 2017; 8 in Braun, 2014, 11 in Lai & Mulayim, 2014)
- Context, e.g., medical vs legal: interpreters for asylees questioned about prior convictions used “robo” for juvenile shoplifting, armed robbery, grand larceny, but not all crimes were grounds for exclusion
- Unimodal, or mode and presence confound (Hornberger et al 1996, FTF consecutive vs remote simultaneous, fewer additions in remote)
- Multidimensional features of interpreting task not assessed:
 - propositional content
 - manner of delivery
 - legal terminology
 - protocol and management

Practical questions from the field?

- In US, UK and Australia, the default interpreting mode in legal settings is consecutive; simultaneous is reserved for conferences, often from a remote booth. Many European legal proceedings use simultaneous mode.

Which mode is optimal for investigative interviews?

- Remote interpreting is popular, convenient, less costly. How acceptable is telephonic interpreting, especially for rapport-based interview strategies? What are the risks?

Is phone and video interpreting as reliable as in-person interpreting?

- Often interviewers are from low-context cultures, suspects and interpreters from high-context cultures.

Beyond language competence, what types of cultural factors affect interpreting performance?

Advancing best practice in interpreted interviews

Methods and samples

- Interviews, surveys, experimental simulations with fixed scripts
- Asia Pacific: multicultural, military and civilian policing
- Language pairs: English-Spanish, English-Mandarin, English-Arabic

Measures

- Accuracy, communication management, expressivity, relational skills
- Rapport transmission: verbal, paraverbal, nonverbal
- Interpreting training, experience, accreditation, specialties
- Cognitive load: eye-tracking: gaze, blink rates, pupillometry

Interpreting context

- Presence (face-to-face, videolink, phone); mode; placement

Research challenges: Arabic-speaking communities

Cross-cultural differences

- People speak the same language and live in the same country

Recruitment of Arabic-speaking actors, interpreters, coders, raters

- Australian interpreters use Modern Standard Arabic or dialect
- 90% accredited in Lebanese or in Egyptian dialects
- MSA not a common lingua franca, legal documents are in MSA
- In our study 86% used dialects, as in Arab countries.
- When suspect and interpreter dialects differ, miss cultural cues

Coding agreement

- Arabic dialect variations, retaining Arabic-speaking coders

Types of interpreting pragmatic failures

Two types of failures: pragmalinguistic and sociopragmatic

- Misunderstand differences between languages in **pragmatic intent expression**. Apply intent from L1 to L2, producing a mismatch
- Misunderstand differences in appropriate **cultural behaviours in different settings**, e.g., verbal taboo or silence. Errors regarding cooperation focus on responses, not linguistic meaning.

“Open the door!” vs
“Would you mind opening the door?”

Opposing views by interpreters **Cultural broker role**

- Faithful mediator
 - Duty to be neutral
- Censor and adapt as advocates and gatekeepers - untrained ad hoc

“He called you a bad word”

is stated
vice or guidance

Endo-group vs exo-group interpreters

Endo group:

- Mainstream community native (English) speaker, studied target language, do not share its culture, do not belong to its culture, speak standardised dialect
 - Culture gap: understand little of the culture
 - Risk of misunderstanding: may have understood wrong
- “Tell him he’s an idiot” vs “He won’t understand our offer”

Exogroup:

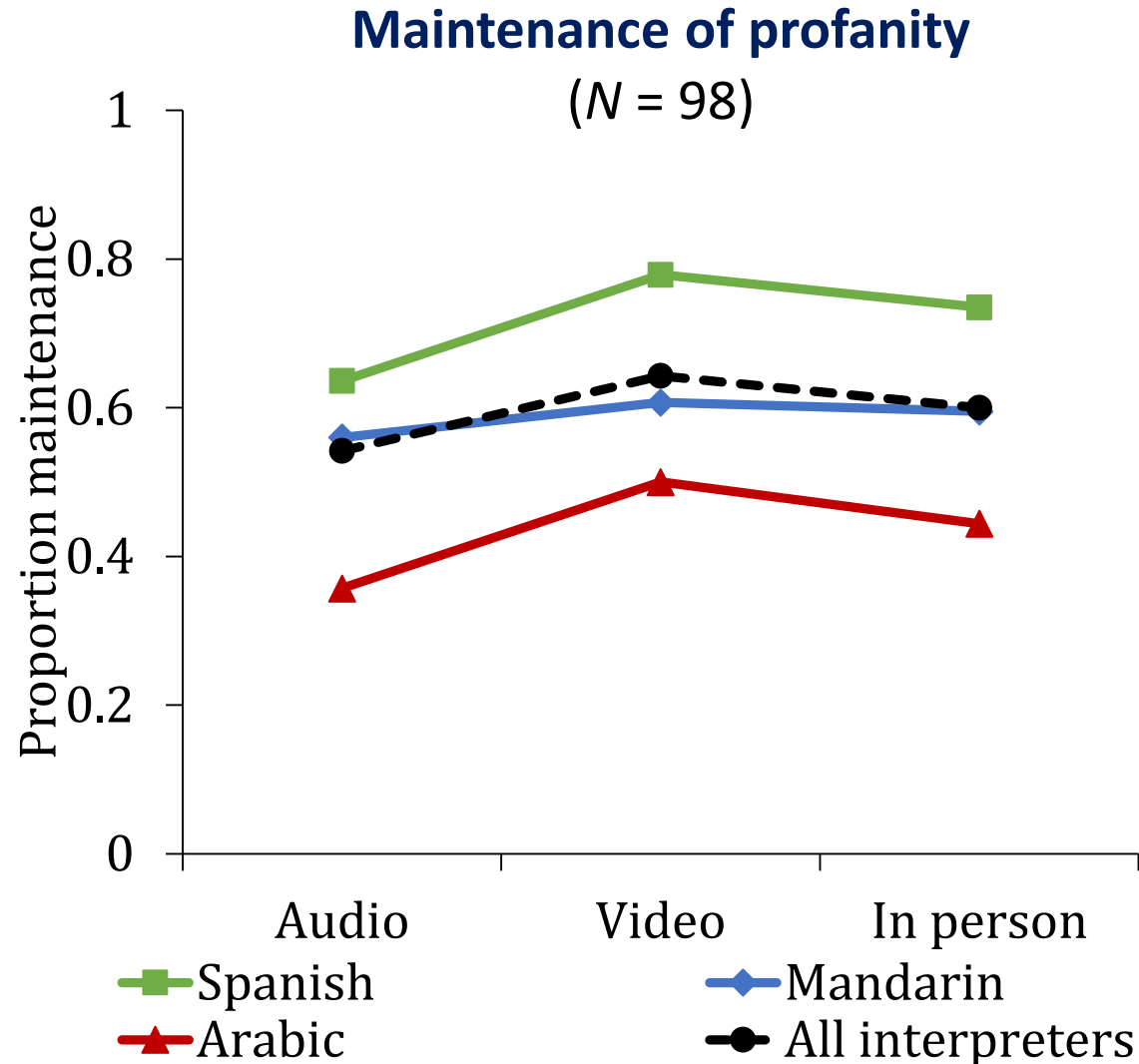
- Mainstream community native (English) speaker, do not share its culture, do not belong to its culture, speak standardised dialect
 - Culture gap: understand little of the culture
 - Risk of misunderstanding: may have understood wrong
- Gratuitous concurrence: non-comprehending “yes” taken as compliance to waive right to silence

Taboo:

interpreters, less face threat

In certain Arabic cultures, in conversation STDs are referred to as “a cold” to avoid stigma

Interpreting profanity by interpreter presence



“Don’t I have the ***bloody*** right to visit other countries?”

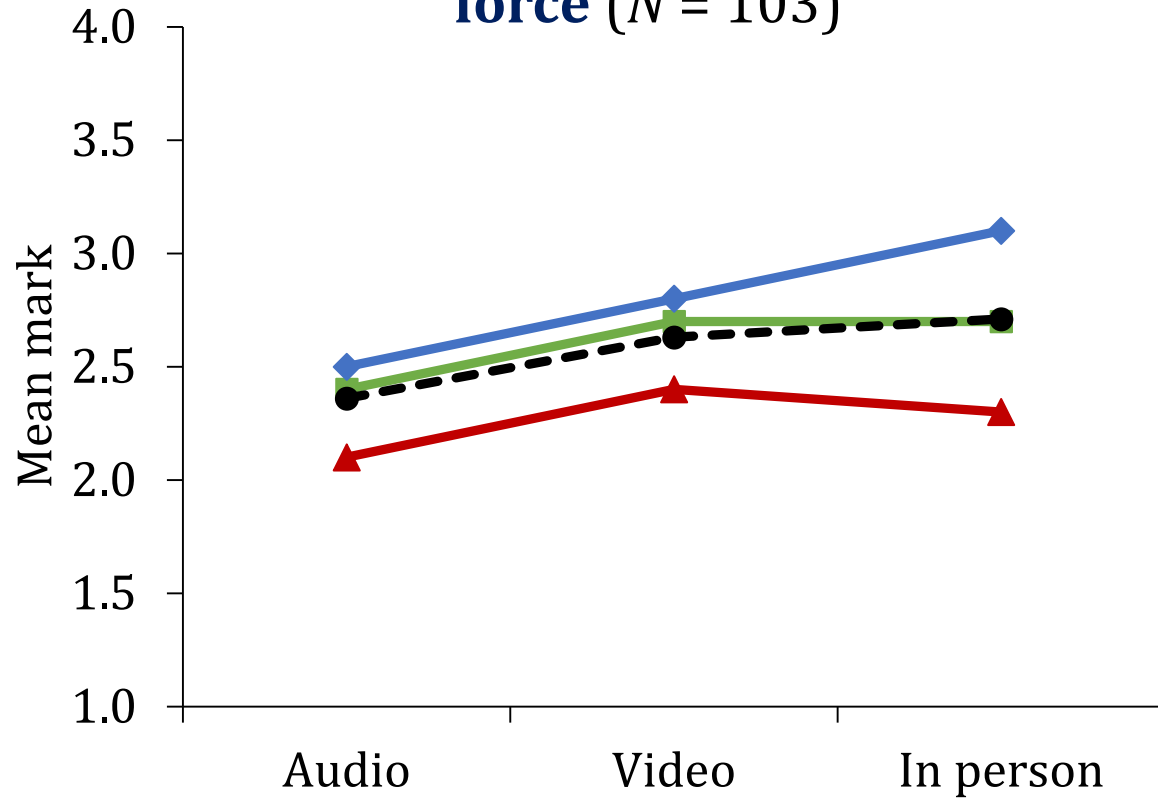
“I was thinking of getting rid of my ***f***ing*** Facebook account. It’s nothing but a nuisance, and now this confirms it!”

Differences in cultural values?

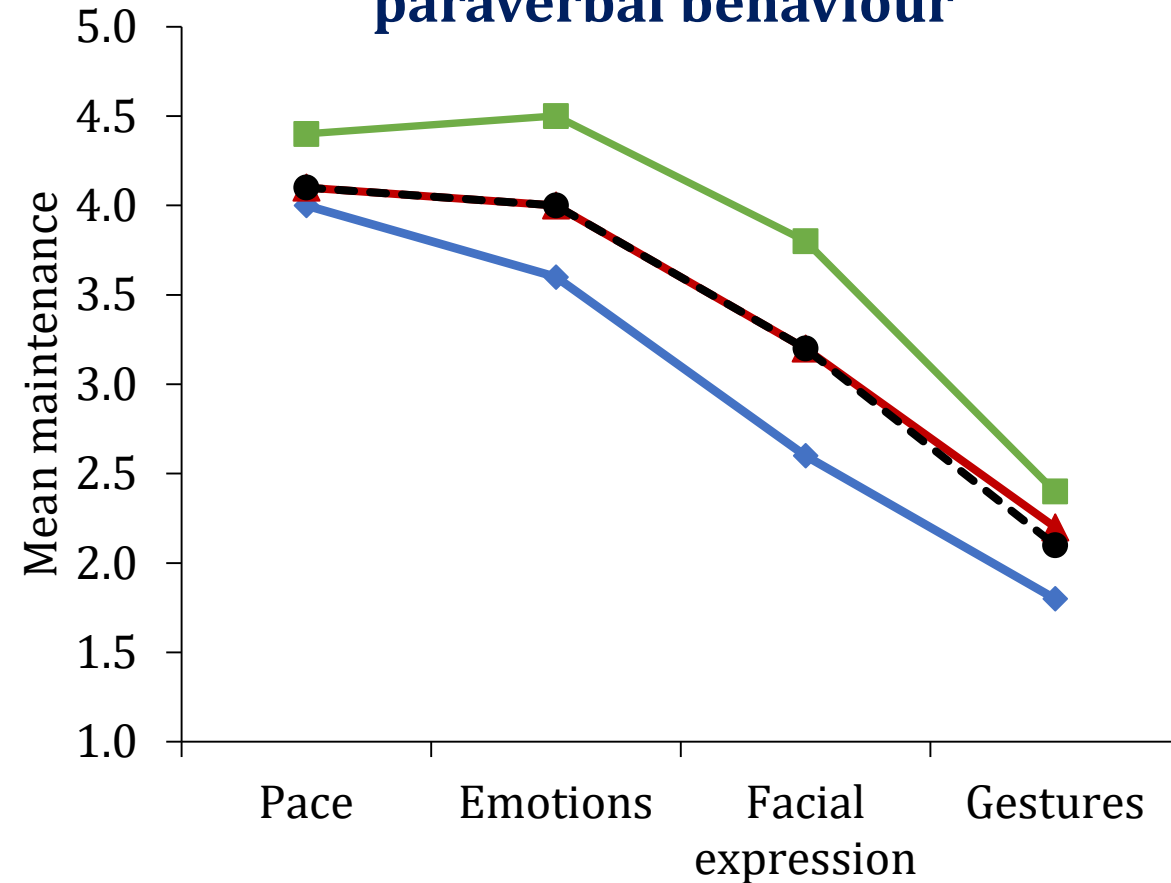
- Individualism-collectivism
- Cooperative-competitive (nurturing-achieving)
- **Direct-indirect communication (Low-high context)**
- Time orientation (short-long-term)
- **Expressiveness (neutral/non-emotional - share emotions)**
- Focus (monochronic, linear - polychronic, nonlinear)
- Universalism (rules apply to all) -particularism (unique relationships)
- Low - high uncertainty avoidance
- Low - high power distance
- Doing (meeting goals) - being (quality of life)

Verbal and nonverbal expressivity: presence and language

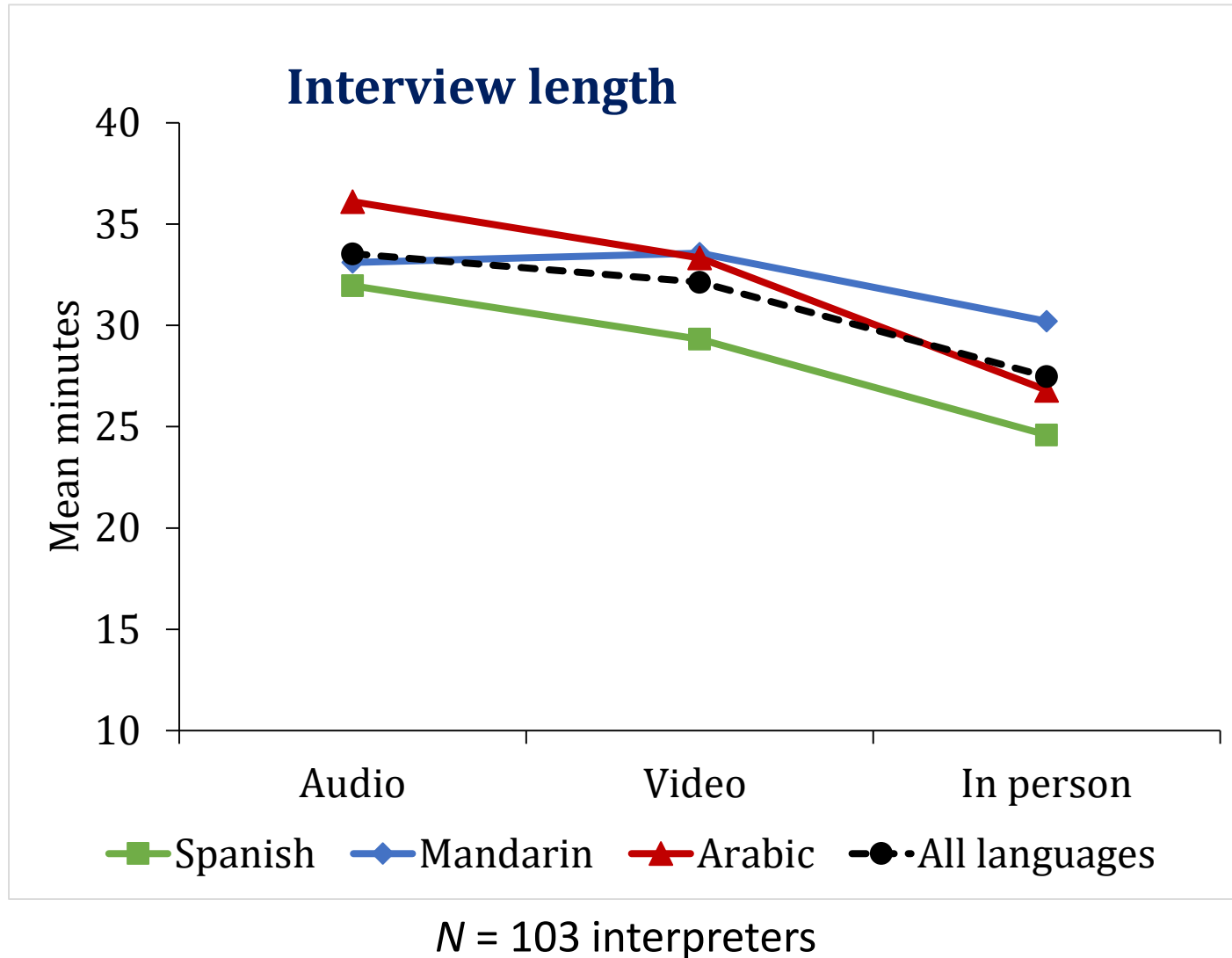
Maintenance of verbal pragmatic force ($N = 103$)



Maintenance of non-verbal and paraverbal behaviour



Duration of interpreting by mode and presence



- Length: 22-44 min

- Spanish > Mandarin

- Spanish > Arabic

Independent of interpreter training or experience

Monolingual: Parts 1 and 2 combined: 16 min

Simultaneous: Part 1: 12 min; Part 2: 14-26 min (26 – 38 mins combined)

Consecutive: Part 1: 16 min; Part 2: 17-33 min (33 – 49 min combined)

Best practice: interpreting face-to-face

Remote interpreting magnifies linguistic and cultural problems

- terminological issues, culture-bound references
- problems with regional accents, culture-specific behaviour
- can't appraise attitudes and emotions that affect meaning
- interpreters say more (use more words) but convey less (info units) to compensate for lack of visual cues, takes longer for less

Remoteness increases interpreter cognitive load

- Cognitive load is higher for aural tasks (hesitations, repairs, omissions)
- Environmental load is reduced by visibility of speakers
- Cognitive load on interpreters is cumulative

Eye-tracking method

Unobtrusive, screen-based eye tracker at the bottom of the screen:

- Tobii Pro X2-60 with a sampling rate of 60 Hz (± 0.1);
- Degree of accuracy at 0.4° ;
- Freedom of head movement to allow for authentic interpreting process.

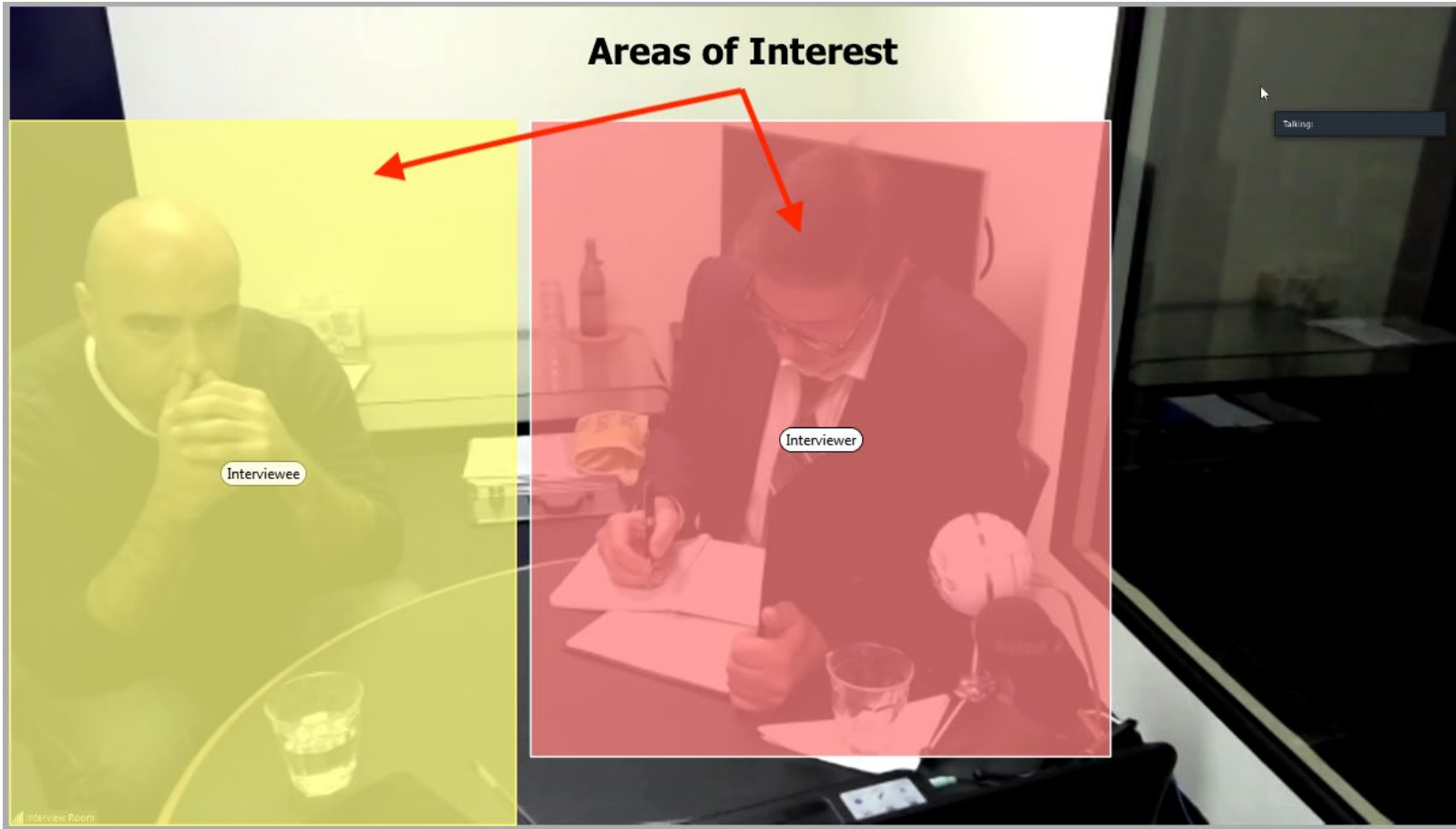
Data processing:

- Use of Tobii I-VT filter to identify established eye movements for:
 - Visual attention in scene perception and language processing (*fixation count, fixation duration, shifts of attention, scan paths*);
 - Cognitive load (*pupillometry*).
- Combination of internal and external quality checks for data quality with attrition rate within normal range (12%).

Data analysis:

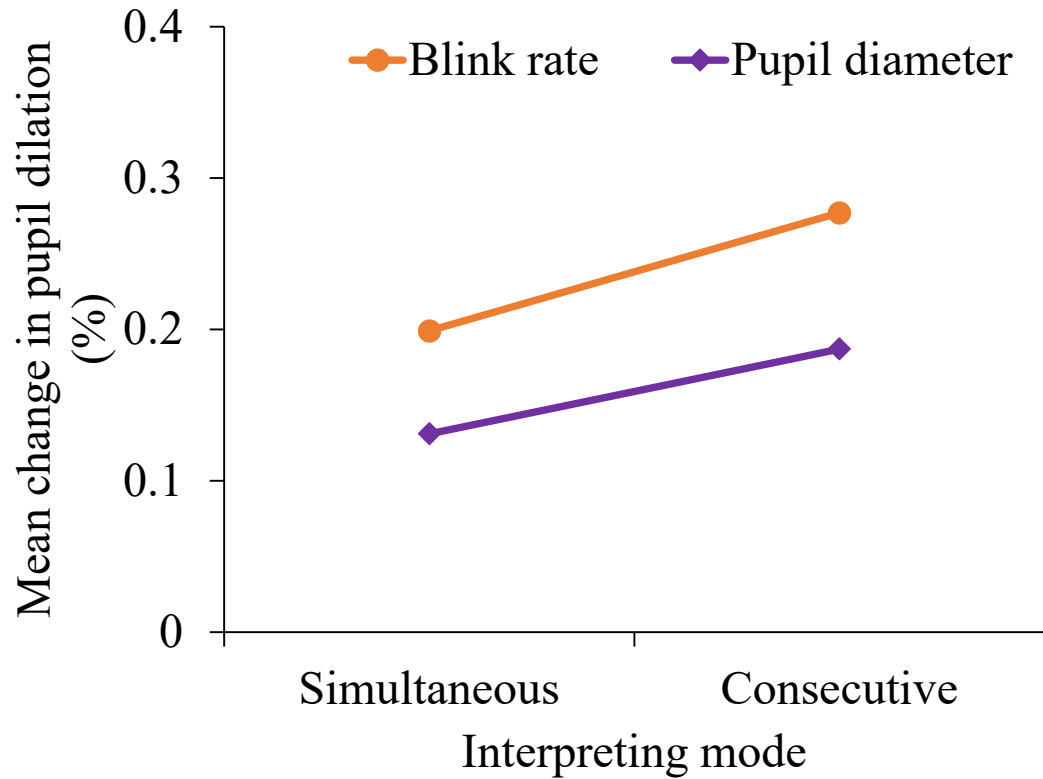
- Analysis of variance (ANOVAs) for individual measures with mixed-effects modelling on completed dataset.

Areas of Interest

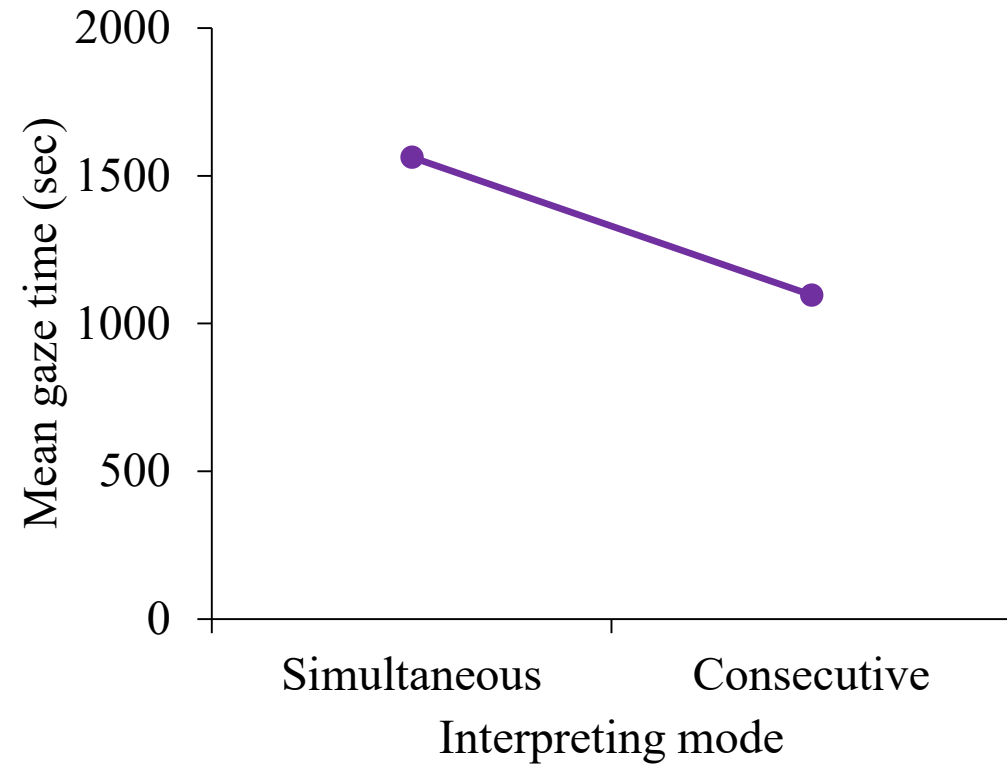




Best practice: simultaneous vs consecutive mode?



Interpreter cognitive load by interpreting mode
($N = 28$ interpreters).



Gaze time by interpreting mode
($N = 28$ interpreters).

Eye-tracking results

Across all languages:

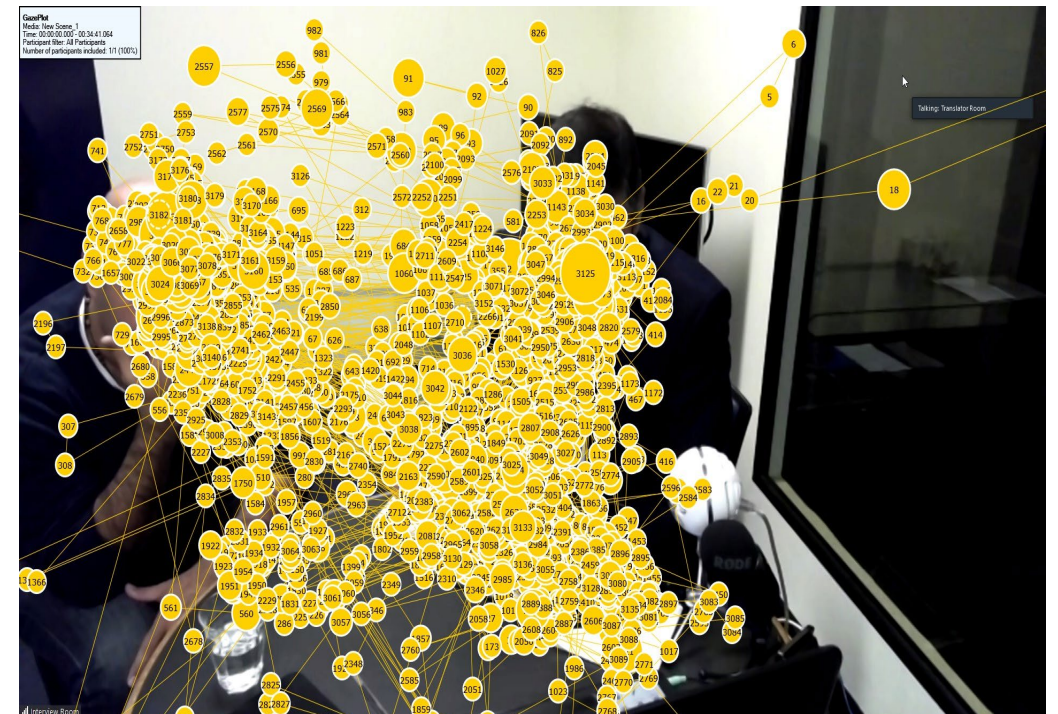
- Participants spent significantly more time ($d = .53$) on their notes (mean = 61%) than on the interviewer (25%) and interviewee (14%);
- Participants allocated significantly more on-screen visual attention ($d = .49$) to the interviewer (68%) than the interviewee (32%);
- Accumulative cognitive load identified against individual baselines of pupil diameter, i.e., load kept increasing until end of experiment.
- Consecutive interpreting mode resulted in significantly more cognitive load ($d = .39$) than simultaneous interpreting;
- Visual attention was typically allocated away from the speaker when cognitive load was higher.

Visual attention by interpreting mode

(a) Consecutive mode



(b) Simultaneous mode



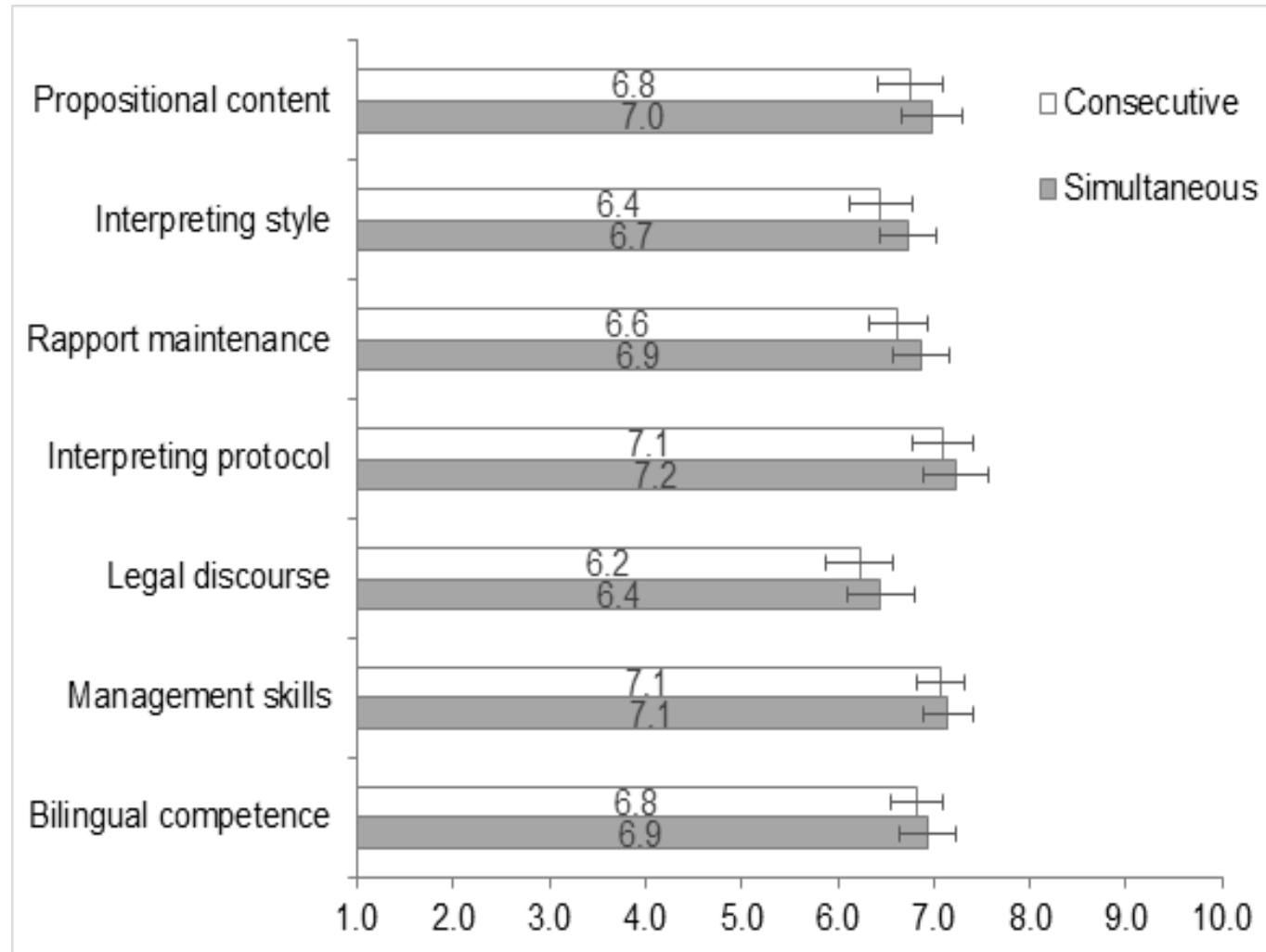
Pearson's r correlation coefficients for eye tracking measures and interpreting performance

	Eye tracking measures					Interpreting performance		
	Gaze time	Fixation count	Fixation duration	Shifts of visual attention		Accuracy	Rapport	Management
Gaze time		-.414**	-.793**	-.840**		.282*	.246*	-.252*
Fixation count	-.414**		.360**	.399**		.254*	.206*	.323*
Fixation duration	-.793**	.360**		.865**		.231*	.212*	.291*
Shifts of visual attention	-.840**	.399**	.865**			.264*	.289*	.381*
Accuracy	.282*	.254*	.231*	.264*			.454**	.770*
Rapport	.246*	.206*	.212*	.289*		.454**		.492*
Management	-.252*	.323*	.291*	.381*		.770*	.492*	

Visual gaze and interpreting proficiency

- Each of the eye tracking measures correlated with each measure of interpreting performance:
- Accuracy had the strongest correlation with gaze time ($r = .282$), and both rapport ($r = .289$) and management ($r = .381$) with shifts of attention
- **The longer interpreters fixated gaze on the speakers (as opposed to looking away from speakers to take notes or use notes) the more accurate they were.**
- **The more they shifted visual attention between speakers (as opposed to looking away from speakers to make notes or use notes), the better the rapport and interaction management scores.**

Simultaneous and consecutive interpreting

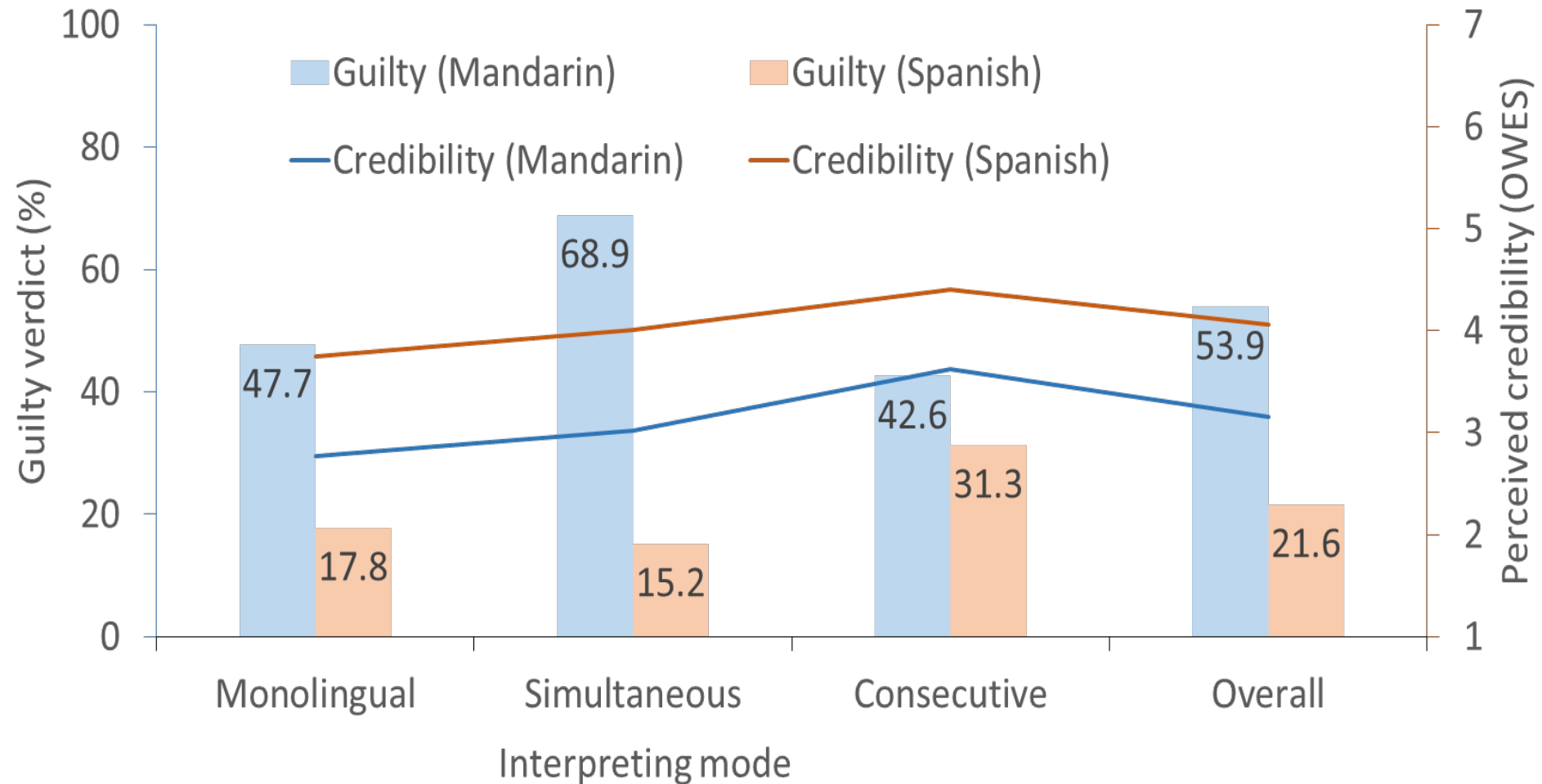


Accuracy in simultaneous vs consecutive mode

Mixed between-within participants ANOVA with interpreting mode as a within-participant variable and language as a between-participant variable

- Main effect for interpreting mode ($F(1, 67) = 7.03$, $p = .010$, $\eta_p^2 = .10$, Wilks' Lambda = .905), showing **more accurate interpreting in simultaneous mode** ($M = 69.15$, $SD = 10.71$, 95% Confidence Interval, CI [66.44, 71.87]) than consecutive mode ($M = 67.03$, $SD = 11.08$, 95% CI [64.21, 69.86]).
- This effect held across three languages ($p > 0.10$) for the overall accuracy scores out of 100.

Credibility: context overrides content



Best practice implications

- To avoid the risk of error and miscommunication, and to safeguard the communication rights of those who come in contact with the law and do not share the same language, police interviewers and practitioners are advised to **secure the services of trained and accredited interpreters**, preferably at a university-level with **specialized legal interpreting training**.
- The higher the level of training, the better the interpreter performance.
- Proficient interpreters require far more than bilingual competence. Exercise caution about using untrained bilinguals to interpret in investigative interviews

Hale, S., Goodman-Delahunty, J., Martschuk, N. (2019). Interpreter performance in police interviews. Differences between trained interpreters and untrained bilinguals. *The Interpreter and Translator Trainer*, 13(2), 107-131.

Implications for practice, cont.

- Few language differences - main effects centred on paraverbal maintenance of emotional variation, speech pace and vulgar language maintenance. Associated with presence (more in person), and for Mandarin interpreters, with mode.
- A brief rapport information guide is useful to sensitize interpreters who are unfamiliar with rapport-building strategies to attend to these markers in verbal and nonverbal communication.
- Give interpreters guidance on interview techniques, e.g., rapport-building, cognitive interview

Implications for practice, cont.

Culturally competent interpreting

- Bicultural interpreters who are exogroup members are best equipped.
- Familiarity with interpreters' Code of Ethics
- Give interpreters clear directions on:
 - expressivity maintenance, verbal and nonverbal
 - profanity
 - taboo topics
 - dialect differences
- Discuss how to address cultural gaps and misunderstandings

Implications for practice, cont.

Optimal interpreting is simultaneous in-person/videolink:

- Gaze is associated with greater **accuracy**
- Visual shifts between speakers are associated with better **rapport maintenance**
- **Rapport and expressivity** are optimised face-to-face
- Interpreter placement should **maximise visual attention** to the speakers.
 - Avoid placement next to interviewer or behind suspect.
 - Triangular placement with clear sightlines to both speakers is best.
- Allow interpreters **frequent breaks**, every 20 mins

Future research paradigms and approaches

Transdisciplinary: share solutions, not just problems

Multidisciplinary: interpreting, forensic linguistics, law, experimental legal psychology

Yoked designs: inter-related studies are cost effective

Live simulation in real time with professional interpreters, mock-jurors

Mixed qualitative and quantitative empirical methods:

- Randomized controlled experiments with pre-test-posttest measures
- Inter-rater and intra-rater reliability: Panel of experienced interpreting assessors comment on the rubric and double mark 20% of the interpreted testimony (Krippendorff's alpha for natural language).
- Error analysis (inaccuracy of propositional content, style, question type, register, legal terminology and legal discourse strategies)
- Competency-based assessment rubric used in interpreting courses.
- Discourse analysis of accuracy in interpreting
- Multi-level analyses of juror and jury decisions; sense-making by jury groups to reach a collective verdict, abductive reasoning
- Text-mining of natural language data with Leximancer, Tiny Textminer

Future policy and reform guidance

Evidence-based guidelines on best practice:

- Modes of interpreting, pitfalls of consecutive vs simultaneous
- Ground-rules for in-person vs remote interpreting
- Ground-rules for video displays in legal proceedings
- Policies on accreditation of interpreters for legal proceedings
- Screening tests on need for interpreters in interviews and in court
- Standards for court and interview interpreter selection and use
- Protocols for interpreting in legal proceedings, procedural fairness
- Rapport maintenance training for interpreters

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