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A Descriptive Comparison of Gender Representations in Kazakh Word Associations from 2014 and 2024

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ABSTRACT

Objective: To compare lexical associations with woman and man in two Kazakh-language sources and clarify the psychological inferences supported by the available material.

Methods and Materials: Printed inventories attributed to the 2014 Kazakh Associative Dictionary and a 2024 free association experiment were examined using frequency accounting, identical descriptive salience bands, and exclusive lexical-occurrence categories. Response forms were normalized without pooling synonyms, translations, or spelling variants. Sample comparability and coding documentation were evaluated.

Findings: Family and relational vocabulary occurs in both sources. Mother is the highest listed woman response in each, while the highest listed man response changes from head of the family to woman. Several rights-related and critical labels in 2024 occur only once or twice. Printed-frequency sums are 582 and 607 for the earlier woman and man inventories and 566 and 563 for 2024. These do not reconcile with reported totals, including 575 responses across both 2024 stimuli. Participant counts, valid denominators, missingness, and independent coding reliability remain unverified.

Conclusion: The inventories provide descriptive evidence of lexical recurrence and non-overlap, generating hypotheses about culturally situated gender representations. They do not establish statistically supported attitude change, widespread polarization, or effects of legislation and media. Reconciled records, comparable sampling, and transparent coding are required for reliable diachronic inference.

Keywords: Kazakh language, Gender representations, Word association, Cultural psychology, Diachronic comparison.

Introduction

Gender words provide a useful entry point for studying the meanings that speakers retrieve when thinking about social categories. An association such as mother, person, strength, or spouse may index a readily accessible lexical relationship, a familiar social role, or a contextually salient image. It does not, by itself, reveal whether the speaker endorses a stereotype. Research on gender representation across languages demonstrates considerable variation in how linguistic forms encode and evoke gender (Gygax et al., 2008; Hellinger & Motschenbacher, 2015). Cultural beliefs also shape interpretations of family roles and relationships, making locally grounded analysis important (Seyed Alitabar, 2023).

Free association tasks invite a response to a cue without supplying response options. Large normative projects and recent methodological work show how these responses can inform analyses of semantic accessibility and mental representation (Aeschbach et al., 2025; De Deyne et al., 2019). Nevertheless, cue wording, response limits, administration mode, language background, and participant characteristics affect what is retrieved. Spontaneity does not remove task demands, awareness, or social desirability, and an associative inventory is not interchangeable with an established measure of implicit evaluation (Greenwald et al., 1998).

Kazakh associative lexicography offers material for examining culturally situated representations across historical datasets. The Kazakh Associative Dictionary provides an earlier lexical record (Dmitryuk et al., 2014). Reviews of Kazakh psycholinguistics and associative lexicography explain the promise of comparing such records, while also illustrating the importance of identifying the populations and procedures behind a dictionary entry (Abayeva et al., 2024; Fazylzhanova et al., 2023). Here, 2014 identifies the dictionary publication; the study background places collection in 2012–2013. The comparison therefore concerns two historical sources, rather than a verified ten-year longitudinal follow-up.

The present study compares the printed association inventories for ӘЙЕЛ (woman) and ЕРКЕК (man) in the 2014 dictionary material and a 2024 experiment described as involving Kazakh-speaking students. It asks which lexical forms recur, which occur in only one inventory, and which interpretations are supported by their listed frequencies. Because response totals cannot be reconciled and sampling comparability is incomplete, the contribution is a descriptive, hypothesis-generating account. It does not estimate change in national gender attitudes or identify causes of the observed lexical differences.

Theoretical Background

Associative accessibility and psychological interpretation

The expression linguistic consciousness is used here as a theoretical label for culturally situated representations accessible through language. Empirically, the observations are cue–response forms and their reported frequencies. Associative salience, evaluative endorsement, and national identity are different levels of inference. A frequent response can be a category contrast, a familiar collocation, or an available exemplar; it need not express approval. Aggregating responses across students also does not establish a shared psychological trait in all members of a national population.

Research on Ukrainian jealousy concepts, multilingual nature cues, and German humour-related stimuli illustrates how associative studies can reveal context-sensitive lexical organization (Petiak, 2020; Terekhova, 2017; Zubach, 2022). Work on the Ukrainian concept of sworn brother similarly distinguishes response-frequency zones and thematic interpretations within a specified corpus (Bulyk-Verkhola & Tehlivets, 2025). These studies provide methodological comparisons, rather than transferable thresholds or direct evidence about Kazakh gender attitudes. Cross-language analysis must also preserve meaning differences that an English gloss can conceal (Wierzbicka, 1999).

Continuity and apparent change

A form found in both inventories is evidence of lexical recurrence in these records. A form found in only one is evidence of observed lexical non-overlap. Neither condition alone demonstrates the persistence or disappearance of a cultural belief. Unequal sample composition, bilingual language use, spelling practices, and the chance occurrence of rare responses can all affect overlap. Family-role terms may therefore coexist with newer discourse labels without implying either a uniformly traditional outlook or a population-wide transition toward a single alternative model.

Materials and Methods

Design and source material

This is a descriptive comparison of aggregate association inventories. The earlier material is attributed to the 2014 Kazakh Associative Dictionary (Dmitryuk et al., 2014); the later material is attributed to a free association experiment conducted in 2024. Participants were reportedly asked to produce the first word or phrase that came to mind for each stimulus. Individual response records, identifiers linking the two cues, and a complete response-disposition log were not available for the present comparison.

Table 1 separates reported totals from arithmetic sums of the printed frequency groups. When several responses precede one trailing frequency, that frequency is assigned to each listed response; commas inside translation parentheses do not delimit separate responses. All printed entries are retained for this accounting, including repeated forms and ambiguous responses. Thus, the audit is reproducible but does not decide which records were valid, missing, duplicated, or excluded in the original experiments. The 2024 claim of 575 responses across both cues cannot be allocated to the two stimuli from the information provided.

Table 1

Response accounting for the two stimulus inventories in each period

Year	Cue	Participants	Valid n	Missing / excluded	Reported total	Printed sum
2014	woman	NR	NR	NR	561	582
2014	man	NR	NR	NR	593	607
2024	woman	NR	NR	NR	575 across both stimuli; allocation unspecified	566
2024	man	NR	NR	NR	575 across both stimuli; allocation unspecified	563

Note. NR = not reported or not verifiable from the available aggregate inventories. Reported totals are claims in the study description, not validated denominators. The printed sums assign the trailing frequency in each group to each listed response, retaining repeated spellings. They do not establish participant counts or valid-response totals. The two 2024 printed sums total 1,129, which cannot be reconciled with a combined total of 575 without the original response records.

Participants and comparability

Both samples are described as university and master's students aged 17–25 years. The earlier source is associated with universities in southern Kazakhstan, whereas the 2024 sample is described more broadly as Kazakh-speaking youth. Exact participant numbers, stimulus-specific gender distributions, regional distributions, educational proportions, and proficiency measures are not established. Table 2 records these distinctions explicitly. Shared age limits and student status are insufficient to demonstrate equivalent samples; the data do not support adjustment, matching, or stratification for demographic differences.

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Table 2

Available sample characteristics and limits on comparability

Characteristic	2014 dictionary source	2024 experiment
Sampling frame	University students in southern Kazakhstan, as described in the study background	Kazakh-speaking youth; institutional sampling frame not specified
Recruitment	Selection procedure and invitation denominator not specified for these stimuli	Recruitment channels, sampling method, and invitation denominator not specified
Geography	Southern Kazakhstan; no distribution by location for these stimulus records	Regional and urban–rural distribution not specified
Age	Reported range 17–25 years; mean and dispersion unavailable	Reported range 17–25 years; mean and dispersion unavailable
Gender composition	No stimulus-specific counts or proportions	Counts and proportions not specified
Education	University and master's students reported; programme proportions unavailable	University and master's students reported; programme proportions unavailable
Language background	Kazakh-language source; proficiency and other-language use not quantified	Described as Kazakh-speaking; proficiency, dominant language, and bilingual use not quantified
Administration	Exact cue order, response timing, mode, and cleaning rules not established here	First word or phrase requested; mode, cue order, timing, and cleaning rules not specified
Collection dates	Dictionary published in 2014; background dates collection to 2012–2013	Year 2024; precise dates not provided
Participant linkage	No link to 2024 respondents documented	Not established whether every participant answered both cues

Note. The age range and educational description are reported study characteristics, not evidence of matched sampling. A publication year is not necessarily a data-collection year. Unknown characteristics cannot be assumed equivalent across periods.

Lexical processing and occurrence classification

For lexical occurrence comparisons, response forms were separated from their parenthetical English glosses and attached frequency labels. Unicode NFC normalization, case folding, trimming, and whitespace normalization were applied. No stemming, translation-based merging, synonym pooling, or spelling correction was performed. Russian and English responses remain distinct forms. Consequently, ана, мама, and шеше are separate lexical responses even though their glosses concern motherhood; айел and әйел also remain distinct spellings. Normalized form sets determine exclusive membership: 2014 only, shared, or 2024 only. Every selected entry in Table 4 and Table 5 was checked against these rules.

Repeated surface forms are retained as separate frequency entries in the accounting and shown with multiple numbers when selected in the comparative tables. They are not silently summed or deleted because the transcription does not establish whether they represent legitimate variants, duplicated reporting, or transcription errors. Examples include әдемі at 16 and 1 in the 2014 woman inventory and адам at 34 and 1 in the 2024 man inventory. Lexical membership can still be determined from presence, while validated response probabilities cannot.

Operational salience and semantic interpretation

Three identical descriptive bands were applied to all four printed inventories: high-frequency entries, $n \geq 10$; intermediate entries, $n = 2–9$; and singleton entries, $n = 1$ (Table 3). These pragmatic display bands separate double-digit counts from lower-frequency entries. They replace an unreproducible appeal to semantic centrality and do not define a validated psychological core. No cumulative-proportion boundary can be estimated reliably before the denominators and repeated entries are reconciled. Frequency rank and thematic importance are therefore discussed separately.

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Table 3

Operational descriptive bands for printed response entries

Band	Decision rule	2014 woman	2014 man	2024 woman	2024 man
High-frequency entries	$n \geq 10$	10	12	9	12
Intermediate entries	$2 \leq n \leq 9$	60	83	40	41
Singleton entries	$n = 1$	104	82	91	100

Note. Counts are numbers of printed entries in each band, not participants or validated response tokens. Repeated spellings remain separate entries. The same display rule is applied to all four inventories. These pragmatic bands are not validated psychological core–periphery boundaries; no percentage-based core or semantic-centrality score is estimated.

Qualitative interpretation uses the explicit domain guide in Table 6. Lexical forms and culturally specific phrases are interpreted in context, while semantically related forms are not pooled into quantitative totals. The original analysis did not document coder number, training, independent coding, translation review, disagreement resolution, or inter-coder reliability. Accordingly, no reliability coefficient is asserted and no numerical semantic-category or polarity comparison is presented. A reproducible quantitative semantic analysis would require a fixed codebook, independent coding before adjudication, and reliability calculated from the unadjudicated labels (Krippendorff, 2004).

Statistical scope

Analyses are limited to printed counts, entry-band counts, lexical ranks, and exclusive occurrence membership. Response proportions, year contrasts, odds ratios, confidence intervals, and p values are not estimable as participant-level outcomes from these unreconciled inventories. Treating their arithmetic sums as valid sample sizes would conceal the original inconsistency and could misrepresent dependence between responses. No statistically significant diachronic shift is claimed.

A confirmatory comparison requires a verified numerator and denominator for each stimulus and year, documented exclusion rules, and the number of responses permitted per participant. With one independent valid response per cue, year differences could be expressed as proportion differences with confidence intervals and tested using appropriate contingency methods; sparse cells require exact methods. Semantic-category models would additionally require reliable coding and demographic adjustment. If respondents contribute multiple responses, uncertainty must account for participant clustering. These requirements specify the limits of the current evidence; they are not analyses reported as completed.

Findings and Results

Response accounting

The study description reports 561 responses to woman and 593 to man in the earlier material, but also states that 575 responses were generated across both stimuli in 2024. Mechanical expansion of the four printed inventories yields 582, 607, 566, and 563 frequency units, respectively (Table 1). The 2024 printed sums total 1,129. None of these arithmetic totals establishes the number of unique participants or valid responses. The discrepancy cannot be resolved by changing 575 to a per-stimulus count, and the statement that every stimulus exceeded 500 valid responses in both periods is therefore not retained.

Repeated surface forms occur within every inventory, including exact repetitions at different frequencies. Some printed items also require an explicit validity policy, such as түсінбедім (I did not understand), жоқ (no), or a numerical response. The records do not establish whether such items were retained, treated as meaningful associations, or excluded. Missing and excluded counts consequently remain unknown rather than being set to zero. Table 3 summarizes entry bands without treating them as validated participant distributions.

Associations with woman

Motherhood-related vocabulary recurs in both inventories. The printed count for ана (mother) is 123 in 2014 and 89 in 2024, and it is the highest listed response in

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each woman inventory. Адам (human/person) is listed at 11 and 60; қыз (girl/daughter) appears at 19 in 2014 and at both 51 and 1 in 2024. These are differences in reported counts, not validated changes in response probability. Shared terms such as нәзік (gentle/tender), келін (bride/daughter-in-law), and жұбайы (his/her spouse) show that family and relational vocabulary remains present (Table 4).

The 2024 inventory also contains ер (man; 42), жыныс (sex/gender; 23), тұлға (person/personality; 4), and мен (I; 3). The labels құқық (rights), феминист (feminist), феминистка (female feminist), and күшті әйел болу (to be a strong woman) each appear as singleton entries. Their occurrence documents available discourse vocabulary in the printed list. It does not establish a broad increase in legal consciousness, psychological individualization, or support for feminism. Жертва (victim/sacrifice) and қиындық (difficulty) are also singletons and cannot establish the prevalence of victimization or emotional burden.

Table 4

Selected lexical associations with woman in the two printed inventories

Printed response and English gloss	2014 frequency	2024 frequency	Lexical occurrence
ана (mother)	123	89	Shared
адам (human/person)	11	60	Shared
қыз (girl/daughter)	19	51, 1	Shared
әдемі (beautiful)	16, 1	6	Shared
нәзік (gentle/tender)	8	23	Shared
келін (bride/daughter-in-law)	9	3	Shared
жұбайы (his/her spouse)	8	2	Shared
мама (mom)	20	1	Shared
қатын (wife; context-dependent register)	6	7	Shared
шеше (mother)	20	—	2014 only
ақылды (smart/wise)	15	—	2014 only
ақылшы (advisor)	6	—	2014 only
ер (man)	—	42	2024 only
жыныс (sex/gender)	—	23	2024 only
тұлға (person/personality)	—	4	2024 only
мен (I)	—	3	2024 only
құқық (rights)	—	1	2024 only
феминист (feminist)	—	1	2024 only
феминистка (female feminist)	—	1	2024 only
жертва (victim/sacrifice)	—	1	2024 only
күшті әйел болу (to be a strong woman)	—	1	2024 only
хх хромосома (XX chromosome)	—	1	2024 only

Note. Frequencies reproduce the printed entries. Multiple numbers in one cell indicate repeated spellings at different positions, not a combined count. An em dash means the exact normalized form is absent from the corresponding printed list, not zero population prevalence. Membership is exclusive and based on exact lexical form after Unicode normalization, case folding, and whitespace normalization.

Associations with man

In the earlier man inventory, prominent printed responses include отағасы (head of the family; 32), нағыз (real/genuine; 31), күшті (strong/powerful; 27), and жігіт (young man) and мықты (strong), each at 25. In 2024, әйел (woman; 119) is the largest listed response, followed by адам (human/person; 34, with another entry at 1), ер (man; 27), and әке (father) and жыныс (sex/gender), each at 24. The prominence of the opposite category is compatible with contrastive retrieval in a word association task. It is not a measure of hostility toward women or a direct indicator of gender-role instability (Table 5).

Fatherhood, responsibility, strength, and protection vocabulary occurs in both inventories. Importantly, жыныс (sex/gender) is already present in the 2014 man inventory at 2, so its later appearance cannot be classified as a newly introduced concept. Өтірік (lie) also occurs in both lists. The

2024 spelling абюьзер (abuser) is listed at 2, whereas өзімшіл (selfish), өтірікші (liar), ойлау жүйесі дамымаған (undeveloped thinking), and патриархат (patriarchy) each occur at 1. These few entries do not independently demonstrate widespread polarization, a larger negative proportion, or a dominant conflict-related periphery. The polarity of an ideological label also cannot be inferred solely from its presence.

Table 5

Selected lexical associations with man in the two printed inventories

Printed response and English gloss	2014 frequency	2024 frequency	Lexical occurrence
әйел (woman)	9	119	Shared
адам (human/person)	11	34, 1	Shared
әке (father)	18	24	Shared
ер (man)	21	27	Shared
жігіт (young man)	25	16	Shared
мықты (strong)	25	12, 1	Shared
күшті (strong/powerful)	27, 3	2	Shared
отағасы (head of the family)	32	3, 1	Shared
жауапкершілік (responsibility)	2	4	Shared
жыныс (sex/gender)	2	24	Shared
қорғаушы (defender)	3	5, 1	Shared
өтірік (lie)	2	1	Shared
нағыз (real/genuine)	31	—	2014 only
отбасы иесі (head/owner of the family)	19	—	2014 only
әйелдің тірегі (support of a woman)	6	—	2014 only
абюьзер (abuser; spelling retained)	—	2	2024 only
өзімшіл (selfish)	—	1	2024 only
өтірікші (liar)	—	1	2024 only
патриархат (patriarchy)	—	1	2024 only

Note. Frequencies reproduce the printed entries. Multiple numbers in one cell indicate repeated spellings at different positi ons, not a combined count. An em dash means the exact normalized form is absent from the corresponding printed list, not zero population prevalence. Membership is exclusive and based on exact lexical form after Unicode normalization, case folding, and whitespace normalization. Translations, synonyms, inflections, and spelling variants are not merged.

Semantic domains and multilingual forms

The inventories contain kinship terms, personal attributes, bodily descriptions, civic and occupational labels, and culturally specific expressions. Table 6 separates these interpretive domains from evaluative polarity. A response can concern a social ideology without being positive or negative, and a metaphor can involve more than one domain. Aggregate semantic or polarity percentages would therefore require decisions that the existing documentation does not supply.

Russian forms and culturally specific Kazakh expressions are present in both periods. The earlier woman inventory includes человек (person), добрая (kind), and красавица (beauty), while 2024 includes женщина (woman), девушка (young woman), and English woman. The earlier man inventory includes глава семьи (head of family), гордый (proud), and храбрый (brave), and 2024 includes мужик (man/guy) and ответственность (responsibility). Multilingual responding is therefore not unique to 2024. Without proficiency measures, harmonized coding, and valid denominators, the inventories do not establish increased internationalization or declining Kazakh phraseological knowledge.

Table 6

Semantic interpretation guide and limits on evaluative coding

Domain	Inclusion principle	Examples in the printed inventories	Interpretive boundary
Kinship and family	Explicit kin terms or household roles	ана (mother), әке (father), жар (spouse), отағасы (head of family)	Role salience does not establish endorsement of a role hierarchy
Personal traits	Explicit character or moral attributes	адал (honest), батыл (brave), өзімшіл (selfish)	Code the stated attribute; do not infer a whole person's attitude
Body and biological classification	Body parts, physical attributes, or sex-related labels	шаш (hair), мұрт (mustache), жыныс (sex/gender), xx хромосома	Descriptive sex labels have no automatic positive or negative polarity
Social roles and identity	Occupational, civic, or self-referential labels	азамат (citizen/man), мұғалім (teacher), мен (I)	Lexical identity is distinct from measured psychological autonomy
Rights and gender discourse	Explicit rights or gender-ideology vocabulary	құқық (rights), феминист (feminist), патриархат (patriarchy)	Mention of an ideology is not equivalent to support or rejection
Proverbs and metaphors	A phrase whose meaning extends beyond its literal components	Әйелдің қырық жаны бар (a woman has forty souls)	Retain the phrase; interpret with cultural and linguistic context
Evaluation	Assign positive, negative, neutral, or ambiguous only when context supports it	өзімшіл may be negative; патриархат and қатын are context-sensitive	No polarity totals or change estimates without independently coded records

Note. This guide makes the scope of qualitative interpretation explicit; it is not a claim that a new independently coded dataset exists. Domains can overlap and are not used as mutually exclusive numerical outcomes. Original coder numbers, training, disagreement procedures, and inter-coder reliability were not documented; no reliability coefficient or aggregate category frequency is reported.

Discussion and Conclusion

Psychological contribution

The comparison identifies a useful distinction between recurring role vocabulary and differences in the lexical organization of printed responses. Mother is the highest listed woman response in both sources, whereas the highest listed man response changes from head of the family to woman. This contrast generates hypotheses about relational role salience and categorical opposition in retrieval. It does not show that participants became less family-oriented, that national masculinity entered a crisis, or that a particular social ideology gained population-wide acceptance.

The contribution to cultural and social psychology lies in documenting locally expressed representational content and clarifying the measurements needed to interpret it. Associative forms can guide subsequent questions about role expectations, category accessibility, and culturally situated meanings. They can also help develop culturally appropriate stimulus sets and interview prompts (Aeschbach et al., 2025). Such uses preserve the value of the material while distinguishing a lexical association from an attitude, and an aggregate corpus pattern from an individual psychological characteristic. Cultural context is essential to interpretation rather than a substitute for construct validation (Seyed Alitabar, 2025; Wierzbicka, 1999).

Contextual explanations and alternative accounts

Family-role continuity is consistent with the presence of culturally familiar relational vocabulary. However, the meaning of a term such as mother or head of the family depends on context and cannot establish an endorsed division of responsibilities. Cultural beliefs may organize interpretations of family life (Seyed Alitabar, 2023), but this study did not measure family values, gender-role endorsement, or behaviour. Positive and negative words likewise cannot be converted into a collective psychological profile without independent validation.

Legal and media developments are plausible contexts for some 2024 vocabulary. Official government information documents legislation signed on 15 April 2024 concerning women's rights and children's safety (Government of Kazakhstan, 2024). The experiment did not measure awareness of that legislation, exposure to related reporting, or attitudes toward reform. Exact collection dates within 2024 are also unavailable, so even temporal ordering relative to the legislation is not established. Legal reform and media discourse are possible contextual explanations to test, not demonstrated causes or measured correlates of the lexical differences.

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Sampling and administration offer equally important alternative explanations. Regional composition, gender balance, discipline of study, dominant language, and task delivery could change the relative accessibility of responses without any historical shift in gender attitudes. The reported age range cannot eliminate these possibilities. Apparent absence of a rare form in one inventory may also reflect sampling variation. Comparisons of student corpora should therefore remain bounded to their observed records and avoid generalizing to an entire cultural population.

Limitations and research priorities

The main limitation is the unresolved response accounting. Original stimulus-level logs are necessary to distinguish participant numbers, valid tokens, missing responses, and exclusions and to reconcile repeated forms. Sample composition and administration are insufficiently documented for a controlled historical comparison. Independent semantic coding and inter-coder reliability are also unavailable. These limitations preclude trustworthy standardized effect sizes, uncertainty estimates, and tests of changes in category or polarity proportions.

A stronger follow-up would retain anonymized participant identifiers, document recruitment and regional coverage, measure language proficiency and dominant-language use, and use identical cue order and response rules across comparable samples. A fixed semantic codebook should distinguish content from polarity and be assessed by independent coders before adjudication. Preregistered contrasts, demographic adjustment, participant-aware uncertainty estimates, and multiple-testing control would support more defensible comparisons. Validated attitude measures or contextual interviews would be needed to test whether associative differences correspond to evaluative beliefs, and direct exposure measures would be needed for legal or media explanations.

The two printed sources contain recurring family, relational, and person-category associations, alongside differences in specific forms and their listed counts. The 2024 inventories include a small number of rights-related, scientific, and critical labels, but these low-frequency entries do not demonstrate widespread polarization or a national attitudinal transition. The study contributes a descriptive record and testable hypotheses about culturally situated gender representations. Reliable diachronic effect estimates require reconciled response totals, comparable samples, transparent coding, and verified participant-level documentation.

Ethics and Consent

The study documentation reports that a committee at the Institute of Linguistics approved the stimulus words. It does not identify the committee's full name, an approval number or date, or approval of the complete human-participant protocol. Informed consent procedures, confidentiality safeguards, and any procedures applicable to participants aged 17 are not documented. Approval of stimulus wording is therefore not presented as evidence of full protocol approval. The scope of ethical review and consent cannot be confirmed from the information available.

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Conflict of Interest

The authors declared no conflict of interest.

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