

The role of digital cues in online banter: a systematic review of adolescents' and emerging adults' views, uses and interpretations¹

Online Resource

Table 1. *Search terms*

	Keywords	Alternatives
Population	Adolescents and emerging adults	Young people, young adults, teenagers, adolescents, youth, students
Interest	Visual cues	Digital cues, emojis, memes, gifs, stickers, emoticons, video, photo, TikTok, vine, reel, Instagram stories, reaction, initialism, and hashtags
Context 1	Banter and humour	Cyberbanter, humor, teasing, sarcasm, joking, roasting, irony, and mock impoliteness
Context 2	Digital	Online, cyber, CMC (computer-mediated communication), internet, virtual, social media, SNS (social networking sites), chat, Facebook, Instagram, YouTube, and WhatsApp

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The search term using Boolean connectors:

(banter OR cyberbanter OR teasing OR sarcasm OR humour OR humor OR joking OR roasting OR irony OR "mock impoliteness") AND (emojis OR memes OR gifs OR stickers OR emoticons OR video OR photo OR tiktok OR vine OR reel OR "instagram stories" OR reaction OR initialism OR "visual cues" OR "digital cues" OR hashtags) AND ("young people" OR teen* OR adolescen* OR "emerging adults" OR "young adults" OR youth OR students) AND (online OR digital OR cyber OR CMC OR internet OR virtual OR "social media" OR SNS OR chat OR facebook OR instagram OR youtube OR whatsapp). The first author ran the searches on all chosen databases (based on the results of pilot searches), Scopus, APA PsychArticles, APA PsycINFO, Web of Science, and IBSS (International Bibliography of Social Sciences).

Table 2. *Inclusion criteria*

Criterion	Current review	Explanation
Population	13 to 25 years old people	Studies with any sample within this age range were included regardless of their background, such as gender, location, etc. The age range was identified by adhering to the ‘minimum age of authorised user’ requirement of common social networking sites such as Facebook, and Arnott’s (2010) definition of emerging adulthood.
Phenomenon of Interest	Digital visual cues	Studies should highlight the use of at least one type of digital visual cue, and these may range from the most well-known expressions such as emojis and emoticons to more complex, multimodal features such as memes, GIFs, selfies, etc.

Context	Digital banter and humour	The use of digital visual cues should be in the context of online or digital banter and/or humour.
Outcome	Use, experiences, views, interpretations, and associated factors	The outcome of the studies should include young people's either use, experiences, views, or interpretations regarding digital banter or humour containing digital visual cues. Alternatively, the outcomes can also be focused on the factors that contribute to the use, experiences, views, and interpretations of using digital cues as digital banter or humour.
Study design	Qualitative and quantitative primary research and reviews	This review included primary and secondary research that contains either qualitative, quantitative, or mixed data.
Other	Written in English, published after 01/01/1982, and peer-reviewed	This review was limited to English-written, peer-reviewed resources that were published after the given date. The date range was determined by the year the emoticon or the first commonly used digital visual cue was introduced (Raymond, 1996).

Table 3. *Data extraction and quality appraisal of included studies*

	Study details	Population	Methods / Study quality	Main findings relevant to the review questions
1	Authors: Allison et al. Year: 2019 Country: Australia Aim of study: Exploring the influences of humour, normative tone, and explicit articulation of this norm on evaluating appropriateness of funny but mean comments (roast) Study design: mixed method.	Number of participants: 117 Gender: 43% female, 57% male Recruitment process: MTurk and another undergraduate psychology students. Age: 18 to 72 years old ($M = 30.0$, $SD = 10.7$). Since half of the participants were undergraduate students ($M = 22.4$, $SD = 4.7$), we decided to include this study in the review.	Data collection method: 8 vignettes were distributed online. The responses to the vignettes included single-item scales (e.g., how funny was the comment from 1 to 7?) and some open-ended responses (e.g., what would you write on this post?) Data analysis: 2 (humour) x 2 (community norms) x 2 (explicitness) linear mixed models were run with comment ratings and responses as dependent variables and moral standard and disengagement as covariates. Open-ended answers were thematically analysed. Study quality: Clearly defined aim with appropriate methods. Exposures/vignettes were derived from genuine social media posts. Data analysis was appropriate.	Uploading one's own photo to get mocked and ridiculed by others is a type of online banter. In this, the photo is used as a digital cue and banter/humour initiator. Banter is common among friends. However, on the subreddit, people, especially males, initiate and engage in banter with anonymous users. Male gender and the explicitness of community norms are the influencing factors for engaging in banter with strangers. However, the emerging adults' perspectives show that there is a certain line between harmless banter and harmful aggression and that line is subject to opinion.

			Qualitative/thematic data analysis provided rich detail and reasons for the quantitative responses.	
2	Authors: Ask & Abidin Year: 2018 Country: Norway, Sweden, and Australia Aim of study: to explore how university students frame student life through memes. Study design: qualitative content analysis	Participants: students who anonymously shared memes to the Facebook page. Recruitment process: anonymous (student) user generated public posts were used as data.	Data collection method: a popular Facebook page, Student Problems, was used. Data analysis: inductive content analysis with grounded theory-based coding for emerging themes and categories. 15 students were involved in data coding to mitigate the researcher's bias. Study quality: Aim and methods were appropriate. Ethical issues not discussed. In-depth descriptions of the thematic analysis process. Themes were discussed rigorously.	Emerging adults use memes as a digital cue for humour initiation and reciprocation. Self-deprecating humour or laughing at own and other's tragedy is a common theme for memes that emerging adults might use to initiate conversation in a banter-type way and relate to one another/bond. The relatedness of memes initiates humour in a social bonding way, and that shared humour and bonding creates a sense of group identity and belongingness. That is the motivation behind producing memes as digital cues for humour and banter can be the sense of social support in the online environment.
3	Authors: Aguert et al. Year: 2016 Country: France	Number of participants: 27 and 22 (online and offline data) Age: 12 to 16	Data collection method: for online irony, researchers created online forums for 7th and 11th graders to discuss general topics for two months.	Adolescents use various markers to signal/contextualise banter-type interactions, both online and offline. More markers are used online than offline. Younger adolescents use more explicit markers such as verbal

	Aim of study: to investigate ironic (non-literate communication with humorous elements) utterances among 7th graders and 11th graders in online and offline contexts to clarify how common irony is among those ages, how different online and offline ironies are, what markers signal online and offline ironies, and what relational implications such ironic utterances have. Study design: mixed method.	Gender: 10 males, 17 females (online), and 9 males, 13 females (offline) Recruitment process: In each age group, all participants lived in the same town and were in the same class. How the researchers approached the participants is unknown	For the offline irony production, eight 10-minute videos were created in which 7th and 11th graders discussed the same topics face-to-face. Data analysis: two researchers independently coded (1) the ironic utterances based on Verbal Irony Procedure, (2) the markers that signalled irony, and (3) whether the ironic utterances were inclusive or exclusive. Interrater agreements were calculated. Study quality: Clear, suitable aim and methods. The effect of the researcher on the data collection, and the ethical issues were not mentioned. Qualitative and quantitative analysis were both appropriate and rigorous. Findings were discussed rigorously. The main contribution of the study was comparing face-to-	clarifications (e.g., ‘I’m kidding’), whereas older adolescents use less explicit markers, such as emoticons, punctuations, and capital letters. Almost one-third of older adolescents’ banter-type messages had no contextualization marker at all whereas 100% of younger adolescents’ online banter had contextualization markers. That is, adolescents rely on various digital cues to convey banter-type intentions online, but younger adolescents use digital cues more frequently and explicitly when doing online banter.
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			face and online humour production among adolescents.	
4	Authors: Buglass et al. Year: 2021 Country: United Kingdom Aim of study: to explore university students' understanding and perspectives on socially appropriate and inappropriate banter, and their experiences of banter in face-to-face and digital contexts. Study design: qualitative.	Number of participants: 190 for the survey and 21 for the focus group discussions Age: university students. The mean age was 20 (SD = 2.51) in Study 1. In Study 2, participants were 18 to 26 years old. Gender: 166 females and 24 males (study 1), and 15 females, 5 males, and 1 non-binary (study 2). Recruitment process: through online advertisement on departmental research participation scheme.	Data collection method: an online open-ended survey and semi-structured focus group discussions. A student researcher facilitated the focus groups to remove the power imbalance. Data analysis: survey responses were analysed using content analysis. Interpretative phenomenological analysis was used in analysing the focus group data. Study quality: Aim was clearly defined, and qualitative methods were appropriate. Relationship with the participants was controlled. Ethical procedures were observed. Unequal gender ratio among participants. Sufficient extracts were provided.	For university students, conveying banter digitally (both private and public) can be more difficult than face-to-face. Although digital cues such as emojis and hashtags are often used by university students to convey the banter intention, there are occasions when the receiver misinterprets them, making digital cues helpful but not fully reliable tools in conveying digital banter. Digital cues can be used to legitimise bullying in the same way as the “it’s just banter” phrase does. That is, university students can use digital cues to mask or excuse inappropriate banter and its’ harmful intention.

			Added university student perspectives to the banter literature.	
5	Authors: Church et al. Year: 2023 Country: United States Aim of study: explored why people use GIFs in everyday communication, including their attitudes, beliefs, and opinions towards GIFs. Study design: mixed. Q methodology.	Number of participants: 31 Age: 18-30. 93.5% were between ages of 19 and 24, and only 6.5% were above age 25 (this information was gathered through contacting the authors). Gender: 19 females and 12 males Recruitment process: prospective participants were given a questionnaire on GIF usage and those who use GIFs regularly or heavy users were asked to participate.	Data collection method: quantitative questionnaire and one-to-one interview on motivations for using GIFs. Data analysis: data were analysed on PQMethod using principal components analysis and three factors were extracted. Study quality: Quantitative and qualitative findings were well integrated. Initial quantitative findings were supplemented by the qualitative data. The inconsistencies/divergences in the data were not reported.	For emerging adults, one of the common motivations to use GIFs in online communication is to make others laugh as GIFs are predominantly humorous.
6	Authors: Cui et al. Year: 2023 Country: China	Number of participants: Experiment 1: 137, Experiment 2: 156, Experiment 3: 57.	Data collection method: Scenarios were randomized and manipulated into different situations/versions and participants were randomly	The smiling emoji (perhaps emojis in general) is ambiguous and open to interpretation when there is not enough context provided in the text. In such cases, receivers rely on other available

	Aim of study: to investigate the role of smiling emoji in sarcasm interpretation and how the sender's occupation influences this interpretation. Study design: experimental. 24 piloted scenarios were used in three series of experiments.	Age: 18 to 30. Mostly university students. Mean ages across experiments ranged from 21.72 (SD = 2.77) to 23.03 (SD = 3.22). Gender: Experiment 1: 52% female, 48% male. Experiment 2: 69% female, 31% male. Experiment 3: 61.4% female, 38.6% male. Recruitment process: university students were recruited from a local university in China. Experiment 3 participants were recruited online by snowball sampling.	assigned to one version. Likert scale surveys on the perceived use of sarcasm by particular occupations were distributed. Data analysis: analyses were run on R, using a maximal model with occupation and device as fixed effects, and subject and item as random factors. Study quality: Cause and effect variables were clearly articulated with clear hypotheses. Three experiments in one paper. Relatively homogeneous participants, and no justification was provided for that. All vignettes were piloted. Statistical analyses were appropriate, accompanied by rigorous discussions.	information/cues such as the sender's occupation in interpreting the meaning of the emoji. That is, the smiling emoji acts as a contextual cue for sarcasm/quasi-humour when the context is unambiguous. In ambiguous situations, adding the smiling emoji to the text makes the meaning of the message more ambiguous and more likely to be perceived negatively.
7	Authors: Goodyear & Quennerstedt Year: 2019	Number of participants: 84 (divided into 19 focus groups)	Data collection method: during the focus groups, participants first evaluated the prompts the researchers had prepared (elicitation technique) and then	On social media, young boys (from the UK) use hashtags, such as #bitofagymmlad, #gains, and #Iamagymmlad, as a way of digital humour when posting about themselves. Being

	Country: United Kingdom Aim of study: to investigate young boys' health-related learning in relation to social media. Study design: qualitative.	Age: 13 to 15 Gender: 35 males, 49 females Recruitment process: recruited from 10 UK schools using purposeful sampling	discussed how they engage with health-related social media, etc. Data analysis: the original narrative data were analysed thematically. Two main themes emerged: Gymlads and Skinny girls. Further analysis solely focused on Gymlads using Practical Epistemology Analysis. External experts were involved in the analysis. Study quality: Clear, suitable aim and methods. Relationship between the researcher and the participants has not been considered. Ethical issues have been considered. Data analysis theoretical orientation and procedure were described in detail. Findings were discussed rigorously. The research was valuable in terms of presenting how humour and irony were important elements for online communication among boys.	not literate by using humour and irony mitigates the risk of getting (literally) ridiculed. Therefore, the humour elements in the hashtags help contextualise their post as banter/humour, not something serious.
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8	Authors: Keane & Hammond Year: 2022 Country: Canada Aim of study: to examine how an emoji and “lol” initialism are used, the relationship between interlocutors, and personal characteristics of the receiver influence online teasing interpretation. Study design: quantitative.	Number of participants: 490 for study 1 and 394 for study 2 Age: university first year students (M = 19.09, SD = 2.04 and M = 19.31, SD = 2.26) Gender: 381 females, 108 males, and 1 non-binary (study 1), and 297 females and 97 males (study 2) Recruitment process: undergraduate students from psychology and communication courses were recruited	Data collection method: Vignette based online questionnaire was distributed in both studies. Vignettes were presented in random orders. Data analysis: ANOVA test on effects of different digital cues on interpreting ambiguous messages and regression analyses on the relationship between rejection sensitivity, relationship with the sender and message interpretation. Study quality: Clearly defined aim with appropriate methods. Vignettes on teasing were piloted on large sample. Justifications for the sample size and inclusion criteria were provided for each study. Contributed to literature by showing some contrasting effects of different laughter tokens on the message interpretation and some of the psychological variables influencing the message interpretation.	University students perceive the ‘winking face with tongue’ emoji more positively than “lol” initialism when it comes to contextualizing banter-type texts. That is, not all digital cues (that are believed to signal humour) are used and interpreted the same when it comes to digital banter and humour. Some digital cues, lol initialism in this case, might signal something different than its original meaning among young people as the effect of “lol” initialism was significantly different than winking face with tongue emoji. In interpreting ambiguous online banter, not only the digital cues but also the social context (relationship with the sender) and personal characteristics (rejection sensitivity) play important roles. These can further be influenced by gender such that young women are likely to consider the social context more in interpreting an ambiguous message than males.
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9	Authors: Kellerman et al. Year: 2013 Country: United States Aim of study: to investigate the prevalence of electronic aggression across different contexts and motivations behind them. Study design: mixed method.	Number of participants: 226 Age: 18 to 23 Gender: 61% female and 39% male Recruitment process: an online questionnaire was distributed to undergraduate students and research credit was offered in exchange for participation.	Data collection method: Quantitative measures on electronic aggression and victimization and other variables of interest such as family risk were distributed, along with open-ended qualitative questions. Data analysis: a series of one-way and mixed ANOVA and hierarchical multiple regression analyses were conducted for the quantitative data. Qualitative data were thematically analysed. Study quality: Clearly defined aim with appropriate methods. Lack of qualitative and quantitative data integration. Qualitative and quantitative analyses adhered quality criteria of each tradition. Contributed to the existing literature by covering both motives for electronic aggression and the prevalence and moderating factors.	Emerging adults use embarrassing photos of others/friends (according to the examples given in this study) as a joke/humour and upload them to the internet. This sometimes leads/escalates into electronic aggression when the joke is perceived badly by the target. In such cases, someone's (embarrassing) photo is used as the digital cue for banter.
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10	Author: Kunze Year: 2014 Country: United States Aim of study: to inductively explore and explain how young people use a creative digital cue, Vine, for various purposes. Study design: qualitative	Number of participants: 3 famous Vine creators Age: under the age of 21	Data collection method: the author used the Vine creators', public content, some of which was famous. Data analysis: each case was analyzed in-depth and various themes of young people's vine uses were developed. Study quality: Clearly defined aim with appropriate methods. Ethical issues were not discussed. Interpretation lacked respondent validation.	Young people create digital cues such as Vine, which attract wider audiences, for various purposes and humour plays an important role in content development.
11	Authors: Lu & Fan Year: 2018 Country: China Aim of study: Explore Chinese youth's usage of self-mocking memes on social media. Study design: Quantitative.	Number of participants: 506 Age: university students aged 18-25 Gender: 45.8% female and 54.2% male Recruitment process: Randomly selected participants	Data collection method: quantitative scales on self-mocking meme usage and gratifications, need for humour, narcissism, and psychological wellbeing were distributed. Data analysis: series of hierarchical multiple regression Study quality: Aim and methods were appropriate.	A self-mocking meme is a digital cue that Chinese emerging adults use commonly as digital humour. People create self-mocking memes to initiate digital humour and banter which is highly appreciated among younger generations in China as self-mocking is not just humorous, but it is a humble way of self-presentation and therefore the shared humour between the initiator and the commentors improve social bonding.

		from two universities.	No information on ethics. The scales used for the data collection were appropriate, with reasonable adaptation. Statistical analyses were appropriate.	
12	Authors: Prada et al. Year: 2018 Country: Portugal Aim of study: to investigate how frequently Portuguese internet users use emojis and emoticons and what motivates such usage. Study design: quantitative.	Number of participants: 474 Age: 17 to 67 (majority of them or 47.9% were university students) Gender: 72.6% female, 27.4% male Recruitment process: advertised through social media and mailing services.	Data collection method: online survey responses were collected through Qualtrics. Data analysis: all data relating to main variables were quantitative and were analysed with Process using 10,000 bootstrapped moderation models, mean difference tests, and correlational analyses. Study quality: Variables of interests were measured appropriately. Statistical analyses were appropriate and explained the results in detail. Lacked qualitative supplements of the findings and explanations. Contributed literature by showing the similarities and	One of the most common motivations for using emojis and emoticons is to make the content of the message more fun/humorous. That is, this quantitative research replicated previous content analysis-based qualitative findings that emojis contextualise digital humour and generalized it (i.e., statistical probabilistic generalisation) into a specific population, Portuguese.

			differences between emoji and emoticon usage among younger and older generations and men and women.	
13	Authors: Steer et al. Year: 2020 Country: United Kingdom Aim of study: to explore how adolescents in the UK understand and perceive cyberbullying within the context of humour to gain a better understanding of how humour motivates cyberbullying. Study design: qualitative.	Number of participants: 28 Age: 11 to 15 Gender: 20 females, 8 males Recruitment process: recruited from two secondary schools in the UK using convenience sampling.	Data collection method: Seven focus group interviews were carried out at secondary schools. All focus groups were audio recorded. Data analysis: reflexive thematic analysis identified three main themes. Study quality: Clear, suitable aim and methods. Ethical procedures were observed. The relationship between the researcher and the participants has not been explicitly considered. Relevant extracts were provided. The findings were discussed rigorously in relation to the previous works and the research questions. The research was valuable in terms of exploring the interplay	Adolescents (in the UK) use emojis (e.g., laughing face) to contextualise digital banter and mitigate the potential risk of misinterpretation. However, adolescents perceive that emojis are ambiguous and digital banter is still prone to misinterpretation despite the use of emojis.

			between online banter and bullying among adolescents.	
14	Author: Vandergriff Year: 2013 Country: United States Aim of study: To explore how digital cues are used during disagreements, and maintaining, enhancing, and challenging relationships. Study design: Qualitative.	Participants: university students Recruitment process: through an advanced German class	Data collection method: Extracts from advanced German classroom non-moderated chat. Data analysis: pragmatic, within-context microanalysis. The author interpreted the meaning/functionality of each digital cue within a particular context. Study quality: Aim, methodology, and data collection processes were appropriate. Sufficient extracts were presented. Interpretations lacked respondent validation. No information on ethics. Rigorous discussion on how interpretations of digital cues were context dependent.	University students use various digital cues, exclamation marks, smiley emoticons, three dots, and lexical surrogates (hmmm), as contextualisation markers for digital humour. However, the same cues can also signal different meanings than humour, particularly disagreement, such that the cues should be interpreted along with the textual content.
15	Authors: Vigmo & Lantz-Andersson Year: 2014	Number of participants: 11 (were divided into 5 groups)	Data collection method: online blogging activity was utilized during English class. The content of the blogs and	A funny (and/or ambiguous) photo can initiate digital humour and banter among adolescents. That is, when adolescents (boys in this case) come across a

	Country: Sweden Aim of study: to explore and understand how language is used in online communication among young people Study design: qualitative. Case study of students' online communication	Age: upper secondary school Recruitment process: through English class, students were invited to voluntarily participate	communications between students were not moderated. The participants' interactions with each other in the lab (during the blogging activity) were video recorded. Data analysis: one group's (two boys) blogging activity was analysed in-depth using an ethnographic approach. Study quality: Clearly defined aim with appropriate methods. Researcher's influence on participants was taken into consideration and minimized. Study was valuable in terms of showing the process of online banter production, its motives, and its contagious nature.	humorous photo, they might immediately initiate banter using the cue, even when not fully articulated what they should say. Alternatively, when adolescents want online humour and banter, they might go on the internet and search for humorous cues such as memes or they create one, a 'silly face' selfie in this study, and accompany it with ironic, banter-type texts. A silly face selfie for banter shows that adolescents are willing to mock and ridicule themselves for humour and potential social bonding.
16	Authors: Walker et al. Year: 2021 Country: United Kingdom Aim of study: to examine the	Number of participants: 391 Age: 18 to 25 Gender: 321 females and 70 males	Data collection method: Quantitative questionnaires explored experiences, attitudes, and behaviours and qualitative open-response questions asked the motivations for engaging in nonconsensual sharing.	The main motivation for sharing someone's private sexual media without permission is to make a joke/having fun. University students generally see this behaviour (i.e., sharing someone's sexual photos and videos) as light-hearted jokes rather than a problematic behaviour. In this regard, private sexually explicit

	prevalence and nature of nonconsensual sharing of sexually explicit photos, videos, and messages and to explore the reasons given for engaging in such acts. Study design: mixed method. Qualitative data complemented the initial quantitative findings.	Recruitment process: undergraduate students enrolled at three UK universities were recruited through opportunity sampling.	Data analysis: chi-square analyses and ANOVA were run for categorical data. The questionnaire model fit was assessed using confirmatory factor analysis. Qualitative data were analysed thematically. Study quality: Well integration of qualitative and quantitative components in the discussion section. Qualitative analysis procedure was not discussed in detail. Rigour analysis procedure presented on quantitative data. Study was valuable for highlighting the role of banter, joking, teasing, etc. in nonconsensual sexually explicit content sharing.	media can be used as a digital cue for banter among emerging adults.
17	Author: Zhao Year: 2020 Country: China Aim of study: To investigate the Hudui ritual (banter) in the Chinese context,	Number of participants: 20 (mostly university students) Recruitment process: Qzone (Chinese social media) users who permitted to use their	Data collection method: 30 pieces of real-life jocular conversation on social media Data analysis: an in-depth pragmatic analysis (and implicit thematic analysis) Study quality:	Similar to subreddit, one's photos uploaded online often initiate hudui, or work as the banter cue. As opposed to subreddit, people do not expect to get ridiculed, but their friends decide to initiate banter by typing jocular abuse under their photos. Laughing and winking face emojis and emoticons at the end of the reciprocation

	focusing on how and why young people initiate and reciprocate online banter. Study design: Qualitative.	public posts as research data	Clearly defined aim with appropriate methods. Genuine social media posts were used as dataset. Themes were described in detail with sufficient extracts. Interpretations lacked respondent validation.	contextualise hudui that both parties found the jocular abuse non-serious play and enjoyed it, as the author interprets. On the contrary, the angry face emoji reflects the jocular abuse was taken seriously and the target is offended. Therefore, emojis are a useful digital cue that contextualise humorous, light-hearted intentions of banter and how positively banter was perceived.
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