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Adolescents' perceptions of social media writing: Has non-standard become the new standard?

Abstract: The present study examines adolescents' attitudes and perceptions with respect to writing practices on social media. It reports the findings of a survey conducted among 168 Flemish high school students with various socio-demographic profiles. The survey examines linguistic attitudes and awareness of sociolinguistic patterns in computer-mediated communication, as well as relevant language skills. Moreover, the present paper uniquely combines the study of both adolescents' perceptions and their production of informal online writing, as the participants' responses to the survey are compared to their peers' actual online writing practices.

The respondents appear to have a fairly accurate intuition with respect to age and gender patterns in social media writing, but much less so with respect to education-related patterns. Furthermore, while typical chatspeak phenomena are easily identified as such, ordinary spelling mistakes often are not. Strikingly, the teenagers do not claim a high standard language proficiency, although they do state to care about standard language use in formal contexts. Finally, some significant differences were found between participants with distinct socio-demographic profiles, e.g. girls and highly educated teenagers appear to be more sensitive to the potential negative connotations of linguistic features and that sensitivity seems to increase with age.

Keywords: computer-mediated communication, social media, adolescents, perception, survey

Zusammenfassung: In der vorliegenden Studie werden die Einstellungen und Wahrnehmungen von Jugendlichen in Bezug auf den Sprachgebrauch in sozialen

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Medien untersucht. Es wird über die Ergebnisse einer Umfrage berichtet, die unter 168 flämischen Gymnasiasten mit unterschiedlichen soziodemografischen Profilen durchgeführt wurde. Dier Umfrage untersuchte Spracheinstellungen zu und -bewusstsein von soziolinguistischen Mustern in computergestützter Kommunikation sowie die relevanten Sprachkenntnisse. Der vorliegende Beitrag kombiniert außerdem die Erforschung der Wahrnehmungen von Jugendlichen und ihre Produktion von informellen Online-Texten auf einzigartige Weise, da die Antworten der Teilnehmer auf die Umfrage mit dem realen Online-Sprachgebrauch ihrer Peers verglichen werden.

Die Befragten scheinen eine ziemlich genaue Intuition in Bezug auf Alters- und Gendermuster im Sprachgebrauch in sozialen Medien zu haben, aber weniger in Bezug auf bildungsbezogene Muster. Obwohl typische Chatspeak-Phänomene leicht als solche identifiziert werden können, werden herkömmliche Rechtschreibfehler oft nicht erkannt. Auffallend ist, dass die Teenager keine hohe standardsprachliche Kompetenz aufweisen, wenngleich sie erklären, den Gebrauch der Standardsprache in formalen Kontexten für wichtig zu halten. Schließlich wurden einige signifikante Unterschiede zwischen den Teilnehmern mit unterschiedlichen soziodemografischen Profilen festgestellt: So scheinen Mädchen und gut ausgebildete Jugendliche empfindlicher auf die potenziell negativen Konnotationen sprachlicher Merkmale zu reagieren und diese Sensibilität scheint mit steigendem Alter zuzunehmen.

Schlüsselwörter: Computergestützte Kommunikation, soziale Medien, Jugendliche, Perzeption, Umfrage

Resumen: El presente artículo tiene como meta analizar las actitudes y percepciones de adolescentes con respecto a la forma de escribir en redes sociales. Partiendo de una encuesta realizada a 168 adolescentes oriundos de la provincia belga de Flandes y de diverso estatus socio-económico, se analizan actitudes y competencias lingüísticas en un contexto de comunicación mediada por computadora, comparando de manera novedosa las respuestas aducidas en la encuesta con la manera de expresarse de los participantes observada en la práxis. Los resultados de la encuesta permiten concluir que si bien los participantes poseen intuiciones considerablemente acertadas acerca de diferencias en la manera de escribir en relación al género, parecen, sin embargo, estar menos alerta de diferencias relacionadas al nivel educativo.

Igualmente, fenómenos de lenguaje chat se identifican con mayor facilidad que faltas de ortografía ordinarias. Sorprendentemente, los participantes no declaran poseer una alta competencia lingüística en lenguaje formal a pesar de valorar el uso de lenguaje estándar en contextos formales. Finalmente, la encuesta

apunta a diferencias de comportamiento en función del profíl socio-demográfico, e.g. chicas y adolescentes de alto nivel educativo presentan mayor sensibilidad a construcciones con connotación negativa y ésta parece incrementar con la edad.

Palabras clave: Comunicación mediada por computadora, redes sociales, adolescentes, percepción, encuesta

1 Introduction

The genre of informal computer-mediated communication (CMC) is assumed to have led to a "pluralisation of written language norms" (Androutsopoulos 2011: 146; see also Grondelaers et al. 2016: 130). While informal online writing has been characterized in terms of "linguistic whateverism" (Baron 2008: 169) and the impression has often been created that 'anything goes', CMC-researchers seem convinced that the genre "has its own rules rather than that it follows no rules whatsoever" (Verheijen 2013: 584). However, we do not know how these rules are perceived or evaluated by their users. Many studies have laid bare the prototypical features and communicative strategies of informal online writing and the way these are conventionalized, but there is hardly any research with respect to the perception of these conventions or implicit rules. Therefore, the present research wants to find out how the most ardent users of social media, i.e. the adolescent generation, perceive and evaluate informal online writing conventions. It does so by comparing youths' awareness of sociolinguistic variation patterns and their linguistic attitudes or evaluations with findings on their actual online writing practices. For the latter, we rely on our previous research on Flemish adolescents' informal CMC and on numerous related studies (see below).

The paper is structured as follows: Section 2 summarizes related research. Section 3 deals with the experimental design of the survey and the collection of the corpus that serves as a reference point for the data analysis. In Section 4, the results of the survey are discussed. Finally, Section 5 presents the conclusions.

2 Research context

The present study primarily concerns attitudinal research, focusing on both teenagers' attitudes and their perceptions with respect to their peers' online writing practices. When referring to *attitudes*, we envisage "an evaluative orientation" towards a linguistic variety or phenomenon (Lybaert 2014: 22), or consistent, structured values attached to (people who use) particular ways of speaking or

writing (Giles & Billings 2004: 188–189; Kristiansen et al. 2005: 12). This evaluation generally has a cognitive and an affective dimension: people have knowledge and beliefs with respect to language varieties and these evoke (positive, negative or mixed) feelings (Lybaert 2014: 22). Giles and Billings emphasize the importance of studying language attitudes, which are situated at the "intersections between language, communication, and social judgment" (2004: 188), as they may significantly influence person and relationship perception, images of entire cultures and societies, and social decision-making (2004: 187–188, 193). In the present study, we interpret *perception* as a more neutral term, referring to people's awareness of e.g. sociolinguistic variation patterns such as gender differences, without necessarily evoking a (positive or negative) evaluation of these patterns. We will primarily analyze the identification and appreciation of CMC features and study what kind of features are attributed to which social groups. The latter implies that this study intends, at least to some degree, to lay bare processes of *enregisterment* (see Agha 2007, Johnstone 2016 and – to a minor extent – Busch 2018).

The linguistic genre that is the main subject of this paper are adolescents' (private) informal online conversations, which tend to differ from formal standard writing practices in several respects. Some of these so-called 'non-standard' features result from the integration of spoken language features in written CMC, whereas others are more typical of digital media. Most prototypical chatspeak features can be described in terms of three implicit 'rules' of informal CMC captured by e.g. Androutsopoulos: the principles of expressive compensation, orality and brevity (2011: 149). The principle of brevity leads to a maximization of typing speed, e.g. through the use of abbreviations. The orality maxim relates to the fact that the register in many forms of informal CMC is to a large extent conceptually oral, reflecting oral communication rather than classical written communication. Symptomatic in this respect is e.g. the use of regional features. Finally, the principle of expressive compensation entails the application of a large set of (mostly typographic) strategies to compensate for the absence of certain expressive cues in face-to-face communication (e.g. emoticons can represent facial expressions). For an extensive overview of the linguistic properties of chatspeak, see e.g. Hilte et al. (2018b), Verheijen (2015) or Varnhagen et al. (2010).

Because of the omnipresence of these divergences from formal writing norms in youths' online writing, many people worry about the effects of CMC on youths' (formal) language skills and those concerns have been widely reflected in negative media attention for the genre (Busch 2018: 87; Vandekerckhove & Sandra 2016). Verheijen (2018: 36–44) offers an extensive overview of attitudinal research on the perceived effects of online writing on literacy, and concludes that mostly teachers and young adults seem pessimistic about the impact of CMC on literacy, whereas adolescents tend to have a more neutral opinion on the matter (40–41).

While these studies are relevant for the present paper, the research focus is essentially different: they all examine people's attitudes with respect to the effect of CMC on formal writing skills, while we report on attitudes and perceptions with respect to the CMC genre itself. However, the evaluations that predominate in the studies discussed by Verheijen (2018) are most telling with respect to the appreciation of online writing practices, since the concerns expressed by the respondents implicitly reveal a predominantly negative evaluation of (at least some) characteristics of informal CMC. Moreover, the finding that adolescents tend to report more positive attitudes (with respect to the impact of CMC on traditional literacy) is highly relevant too, since the present study focuses on this age category, but, once again, we want to know how this age group evaluates CMC writing in itself. Nevertheless, we want to add that the results of Verheijen and Spooren (2017: 6) suggest that there is no solid ground for pessimism in terms of effects on literacy, since the experiments revealed no (short-term) effect of WhatsApp on youths' school writing.

A survey into the perception and evaluation of CMC conventions inevitably entails an enquiry into the attitudes with respect to more standard ways of writing too. Therefore, part of the survey focuses on Flemish adolescents' appreciation of and self-estimated proficiency in formal standard Dutch. A major question in the present-day debate is "whether standard languages [...] are destandardizing, as is commonly held, or whether it could be the case that the 'classical' standardness criteria [...] have become too narrow to fit present-day standard language dynamics." (Grondelaers et al. 2016: 143). This relates to the concepts of destandardization and demotization, which have been widely discussed in variationist linguistic research in the past decade, and which refer to respectively the loss of a community's need for a standard language variety versus the preservation of a standard ideal combined with an increase in the number of varieties satisfying this ideal (Kristiansen & Coupland 2011: 13, 28). This dichotomy certainly is an issue when dealing with informal online writing: Grondelaers et al. (2016) point to a "new social and linguistic reality" (143), marked amongst others by digitalization processes that led to changing linguistic practices which "pluralized language norms and further amplified the importance of identity" (130). The authors revisit classical criteria for standard languages (e.g. Auer 2011), signaling an "internal change in the concept of prestige" (134): they claim that apart from traditional (overt) prestige – typically associated with standard varieties –, new types of prestige have emerged and have become increasingly important, such as "dynamism" and "media cool" or "modern media prestige" (Grondelaers et al. 2016: 119, 132). This coolness-factor in particular may impact youths' online writing, since adolescents tend to intensively engage in identity construction and are extremely sensitive to peer group evaluation (in terms of desire for acceptance and

fear of rejection; see Taylor 2001: 298), and since self-profiling is an inherent part of most social media communication (see e.g. De Decker & Vandekerckhove 2017: 278; Hilte et al. 2018c: 319; Verheijen 2015: 129). Furthermore, it has been attested repeatedly that non-standard speakers "are *upgraded* on traits relating to solidarity, integrity, benevolence, and social attractiveness" (Giles & Billings 2004: 195). In this respect, all kinds of CMC conventions and chatspeak features are potentially useful "linguistic tool[s] for modern self-portrayal" (Grondelaers et al. 2016: 130). However, different types of features might be indexical of different social connotations. While digital vernacular features that are related to the principles of brevity and expressive compensation (see above) might evoke connotations of informality and trendiness, orality markers reflecting more traditional non-standardness (e.g. dialect) might evoke connotations of localness and toughness (see Hilte et al., forthcoming, for distinct preference patterns for old vs. new vernacular amongst different groups of adolescents). With respect to the indexicality of standard language, we note that while standard language is seldom a neutral variety (although it is often claimed to be so), it certainly is not in informal CMC, where its abundant use might trigger "traditional superiority perceptions which are at odds with the local coolness demands" (Grondelaers et al. 2016: 138). The present study can contribute to the debate on standard language ideologies[1] and the evaluation of (non-)standard language by analyzing youths' opinions with respect to the appropriateness and importance of standard Dutch in different communicative settings, ranging from informal social media contexts to formal school contexts. Furthermore, language and media ideologies – i.e. socially shared (and socioculturally motivated) beliefs, perceptions and expectations on language/media structure and use (Blommaert 1999: 1; Busch 2018: 89), by which users "frame their understanding of linguistic varieties" (Irvine & Gal 2000: 35) – apply to the genre of social media writing too. Busch notes that "digital writing practices can only be fully understood" when taking these ideologies into account, as "[r]ather than being determined by technical infrastructures, non-standard spellings and punctuation seem to be highly intentional in the shape of ideological-informed enregistered styles" (2018: 86).

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1 Standard language ideology has been described as the "normative ideology imposed and sustained by institutions such as (formal) education and the media, but maintained by (silent) agreement between the language users" (Grondelaers et al. 2011: 199–200). According to Milroy and Milroy, standardization aims at "preventing variability in spelling and pronunciation by selecting fixed conventions uniquely regarded as 'correct'" (1985: 23). Therefore, they argue that standard language ideology "promotes uniformity at the expense of variety" (Milroy & Milroy 1985: 68).

3 Experimental design

This section is devoted to the experimental design of the study. First, the design of the survey is discussed (Section 3.1), and next, the group of participants is described (Section 3.2). Finally, in Section 3.3, the social media corpus is introduced from which the examples in the survey are extracted. Moreover, this corpus will serve as the reference point for the comparison of adolescents' perceptions and sociolinguistic awareness with their actual online linguistic practices.

3.1 Design of the survey

We created a survey[2] to complement our previous research on teenagers' *production* of informal online writing (see Hilte et al. 2018a, 2018b, 2018c, forthcoming) with findings on their attitudes and *perceptions* with respect to this linguistic register. The respondents were recruited in ten class groups in four high schools. They each had a computer at their disposal to fill in the online survey. Participation was voluntary[3] and anonymous; participants were not asked to enter their name or class group. However, they did have to enter general profile information (e.g. age, gender). For more information on the respondents, see Section 3.2.

The survey consisted of multiple question blocks focusing on linguistic attitudes and perceptions and to a minor extent also on language skills. All questions and tasks related to instant messaging, i.e. private informal online conversations, produced on platforms such as Facebook Messenger and WhatsApp, which are highly popular among adolescents. Below, each question block is described and illustrated. The order in which the blocks were presented to the participants was randomized each time (i.e. all students answered the same questions but in different, random, orders). The instructions were formulated as simple and as transparent as possible without losing important nuances, since the survey needed to be clear to teenagers of different ages and with different educational backgrounds. The figures with screenshots from the survey show the original question in Dutch and an English translation that was added for the purpose of this paper only.

The selection of the linguistic and socio-demographic variables that are the focus of the present survey was based on our own previous work on the produc-

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2 Link to the online survey: https://uantwerpen.eu.qualtrics.com/jfe/form/SV_eX8CZ6TY5mCUG Zn. The survey is available as a PDF upon request.

3 All students were willing to participate. However, some did not complete the survey or made up silly answers – these students' responses were removed from the dataset (see Section 3.2).

tion of online writing (e.g. Hilte et al. 2018a, 2018b, 2018c, forthcoming) and on related research (e.g. Varnhagen et al. 2010; Verheijen 2015), since significant sociolinguistic variation has been observed with respect to these variables. Most of the included linguistic features are not Dutch- or Flemish-specific, but relate to general principles of chatspeak (see Section 2). For instance, expressive typographic markers such as emoji or allcaps are language-independent, as is the use of e.g. colloquial or regional language in itself (although of course, the actual linguistic features are Flemish-specific).

Finally, the online messages that were presented to the respondents were selected randomly from the reference corpus (see Section 3.3), with some constraints (e.g. regarding message length).

Blocks 1–3: Intuitive author profiling tasks

The first question blocks consisted of three distinct intuitive author profiling tasks for predicting (certain aspects of) authors' socio-demographic profile based on their texts. Each task is based on five authentic chat messages extracted from the corpus (described in Section 3.3). In the first task, the participants had to guess the author's gender for each of the five messages. They could check one out of three boxes: 'girl', 'boy', or 'I don't know'[4]. Whenever they checked the 'girl' or 'boy' box, they were free but not obliged to write down their argumentation. The second block contained a similar task concerning age profiling: the participants were asked whether the authors of five chat messages were either 13–16 or 17–20 years old. The third block concerned education profiling. For five chat messages, the participants had to guess which of the three main Belgian secondary education tracks the authors attended: General (theory-oriented), Technical (hybrid) or Vocational Secondary Education (practice-oriented – see Section 3.2 for a detailed description). Just like for gender profiling, in the age and education profiling tasks 'I don't know' was a valid response too. Similarly, the participants were free but not obliged to explain their reasoning. Figure 1 shows one of the gender profiling questions.

We recall that gender, age and education were included in this task because significant sociolinguistic variation was attested with respect to these three vari-

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4 We did not include other options, as these are not operationalized in the reference corpus either. For alternative (i.e. non-binary) operationalizations of gender, we refer to e.g. Bamman, Eisenstein and Schnoebelen (2014), who linguistically approach gender as consisting of multiple gender-oriented (language) clusters, and Killermann (2014) who conceptualizes gender identity as a combination of values on four continuums, relating to identity, attraction, expression and sex.

ables, both in our own previous work and in related research (see e.g. De Decker 2014; Hilte et al. 2018a, 2018b, 2018c, forthcoming; Verheijen 2015; and many more).

Haha da was kei lief 😂😂💕

Haha that was so sweet

Ik denk dat het bericht hierboven is geschreven door een...
- ○ jongen
- ○ meisje
- ○ ik weet het niet

I think this message was written by a...
- ○ *boy*
- ○ *girl*
- ○ *I don't know*

Waarom? (niet verplicht)

Why? (not required)

Figure 1: Example from the survey: A gender profiling task.

These question blocks served two purposes. The first purpose was to verify whether the participants were able to distinguish between the writing patterns of different socio-demographic groups of teenagers. The second purpose was to obtain insight in the intuitive factors that determined participants' decision-making, and to compare these to sociolinguistic patterns that were attested in the reference corpus or in related research.

Block 4: Statements on author profiling

The fourth question block was related to the tasks described above. It contained statements on potential linguistic differences in chat messages written by adolescents with different social profiles in terms of age, gender and educational track. The participants had to indicate the degree to which they (dis)agreed with the statements on a 5-point Likert scale, ranging from complete disagreement to full agreement. An example is shown in Figure 2.

	Helemaal niet akkoord	Niet akkoord	Neutraal	Akkoord	Helemaal Akkoord
Meisjes chatten anders dan jongens	○	○	○	○	○
Girls' chat messages differ from boys'	*Completely disagree*	*Disagree*	*Neutral*	*Agree*	*Completely agree*

Figure 2: Example from the survey: Statement on gender profiling.

This question block was added to obtain insight in the teenagers' awareness of sociolinguistic variation in social media writing. The participants' replies will be compared to their performance in the actual profiling tasks, as potential correlations or discrepancies may emerge.

Block 5: Correction or 'conversion' task

The longest question block was a language correction or 'conversion' task in which the participants were presented with eight chat messages written by their peers. Each message could contain one 'non-standard' element (i.e. divergent from formal standard writing), or none. Some of these elements were straightforward linguistic errors (e.g. spelling mistakes), others represented prototypical chatspeak markers that generally are not integrated in formal writing (e.g. a non-standard abbreviation that is common in online writing). The participants first had to decide whether the message corresponded to standard Dutch writing norms or not. It was emphasized that the standardness of the message was to be evaluated regardless of the social media context: the students had to check whether the sentence would be acceptable in e.g. a school exam. In case of a positive answer, they proceeded to the next item that had to be judged. If they answered 'no', they had to indicate on a 5-point Likert scale to which extent the 'non-standard' element would bother them in a chat message on Facebook or WhatsApp. Finally, they were asked to convert the sentence into its standard equivalent. This allowed us to verify whether they had spotted the actual error and were capable of producing the standard equivalent.

The stimuli include a chatspeak (i.e. non-standard Dutch) abbreviation (*mss* for *misschien*, 'maybe'), a common misspelling of a possessive pronoun which blurs the distinction between object and possessive forms (*u* instead of *uw,* 'your'), a common contraction of two words (*das* instead of *dat is*, 'that is'), a verb conjugation error (*veranderd* instead of *verandert,* 'changes', in third person singular), the non-standard spelling of the colloquial variant of a standard Dutch word (*is* instead of *eens*, 'a while'), the insertion of an English lexeme in a Dutch sentence (*nice*) and a spelling manipulation (*sgattig* instead of *schattig,* 'cute'). Finally, a standard Dutch utterance (without any divergences from formal standard writing) was added as a control sentence.

Figure 3 shows the utterance *Jij bent sgattig* ('You are cute'), which contains the above mentioned non-standard spelling *sgattig* instead of *schattig* ('cute'). This cluster reduction from *ch* (/X/) to *g* is a common spelling manipulation in Flemish online teenage talk.

Jij bent sgattig

Is het bericht hierboven correct Standaardnederlands?
- ○ ja
- ◉ nee

You are cute

Is this message correct standard Dutch?
- o *yes*
- o *no*

	Helemaal niet akkoord	Niet akkoord	Neutraal	Akkoord	Helemaal akkoord
Ik zou me storen aan deze "fout" **in een chatbericht** op **Facebook** of **WhatsApp**	○	○	○	○	○
This "error" would bother me in a chat message on Facebook or WhatsApp	*Completely disagree*	*Disagree*	*Neutral*	*Agree*	*Completely agree*

Verbeter de zin: (maak er Standaardnederlands van)   *Correct the sentence: (turn it into standard Dutch)*

[   ]

Figure 3: Example from the survey: Correction task.[5]

This block's purpose was to examine teenagers' detection and perception of non-standard writing practices on social media as well as their proficiency in formal standard Dutch. More specifically, as the individual questions and examples contain different types of errors and chatspeak markers, we want to verify which variations on formal writing norms are still perceived as 'incorrect' by adolescents. The evaluative questions can reveal which of these 'non-standard' elements – even though they are recognized as incorrect from a formal standard Dutch perspective – are (fully) accepted in social media interactions, and which ones are not.

Block 6: Statements on standard Dutch

In the sixth block, the participants were asked to indicate their (dis)agreement on a 5-point Likert scale with several statements on the importance of standard language (proficiency) in different communicative contexts, ranging from school or professional contexts to the informal setting of peer group communication on social media. An example is shown in Figure 4.

The answers to these questions show to what extent adolescents have appropriated mainstream standard language ideologies.

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5 The 'would bother me'-statement and the correction field only appear if the participant answers 'no' to the first question.

	Helemaal niet akkoord	Niet akkoord	Neutraal	Akkoord	Helemaal akkoord
Ik denk dat het goed beheersen van Standaardnederlands mijn kansen op een job vergroot	○	○	○	○	○
I think being proficient in standard Dutch will raise my odds of getting a job	*Completely disagree*	*Disagree*	*Neutral*	*Agree*	*Completely agree*

Figure 4: Example from the survey: Statement on the importance of standard Dutch proficiency.

Block 7: The indexicality of linguistic and typographic features

In the seventh block, participants were presented with chat messages written by their peers and had to indicate how friendly or kind the authors sounded. Participants were presented with several variants of one and the same utterance, i.e. the same utterances re-occurred multiple times, with slight stylistic modifications. Figure 5 illustrates how one particular utterance is repeated with different endings, i.e. a full stop, a heart emoji and no emoji or punctuation marks whatsoever.

We note that these related messages were not presented together as a cluster, as the order of the utterances in this block was randomized.

Ook goe | *[That's] fine too*

Ook goe 💕 | *[That's] fine too*

Ook goe. | *[That's] fine too.*

	Helemaal niet akkoord	Niet akkoord	Neutraal	Akkoord	Helemaal akkoord
De chatter uit het bericht hierboven komt sympathiek over	○	○	○	○	○
The author of this message comes across as kind/friendly	*Completely disagree*	*Disagree*	*Neutral*	*Agree*	*Completely agree*

Figure 5: Example from the survey: Implicit statements on feature indexicality.

The answers to these questions reveal the indexicality[6] of particular non-verbal linguistic features and chatspeak markers for the adolescent generation, and may

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6 We note that in a way, question blocks 1–3 (i.e. the author profiling tasks) relate to indexicality too, albeit of broader, socio-demographic, categories (i.e. the adolescents' age, gender and educational track).

enhance our understanding of the acceptability of these features. Furthermore, potential correlations between the teenagers' socio-demographic profile and their responses might reveal which social groups (e.g. girls versus boys) are more resp. less sensitive to the potential negative or positive[7] impact of certain features, as well as whether this sensitivity is gradually acquired (i.e. increases with age) or not.

Block 8: Ranking chat messages

In the final block, the participants were asked to rank 13 authentic chat messages in terms of how likely they were to write such utterances themselves. The responses should reveal what kind of chatspeak features or strategies the adolescents identify with and from which features they dissociate themselves. Consequently, they might give us an idea of the type of features that are used for identity construction on social media by particular groups of teenagers. A selection of the messages that were to be ordered can be seen in Figure 6. We note that the exact ordering is not essential, as we will divide the rankings in a top, middle and bottom third, and inspect which utterances are in many participants' top resp. bottom part. We (orally) explained this to the participants, so as not to force ordinality on data that are not intrinsically ordinal (i.e. some participants may use linguistic features from multiple utterances, without being able to decide on which ones they tend to prefer).

A wide variety of features of online writing were included in this question block: linguistic variables relating to the principles of orality (colloquial/regional language, English lexemes), brevity (acronyms and abbreviations), and expressive compensation (emoji, onomatopoeic representation of laughter, character repetition, kisses, and unconventional capitalization and punctuation) (Androutsopoulos 2011: 149; see also Section 2).

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7 A more complex operationalization of the indexicality of (para)linguistic features (that e.g. goes beyond a distinction between negative or positive connotations) falls outside the scope of the present study, but is a relevant path for further work.

Rangschik de berichten

Sleep met de muis de berichten in volgorde:

- zet **BOVENAAN** het bericht dat je het **MEEST** aanspreekt (= 'zo zou ik ook schrijven', of 'dit bericht vind ik goed/cool'),

- zet helemaal **ONDERAAN** het bericht dat je het **MINST** aanspreekt (= 'zo zou ik nooit schrijven', of 'dit bericht vind ik belachelijk').

Rank the messages

Use the mouse to drag the messages in the following order:

- *AT THE TOP comes the message that appeals to you MOST (= 'I would write like this too', or 'I find this message okay/cool')*

- *AT THE BOTTOM comes the message that appeals to you LEAST (= 'I would never write like this', or 'I find this message to be ridiculous')*

😂😂❤️❤️💗💗😊 hahaha als ge rustig fietst komt alles in orde ❤️😊🙈🙈😊   *hahaha if you ride your bike slowly everything will be fine*

Hoe is sgool   *How is school*

Helloooooo xx

Thanks

Figure 6: Example from the survey: ranking task.

3.2 Participants

The survey was conducted among 168 Flemish[8] teenagers attending four different secondary schools in the central province of Antwerp. The participants were between 15 and 20 years old and were all in the final three years of secondary education when the survey was conducted (i.e. in 2018). They were all students in one of the three main types of Belgian secondary education (FMET 2017: 10):

- General Secondary Education: theory-oriented track that prepares students for higher education.
- Technical Secondary Education: track with a strong theoretical and practical component, and a specific focus on technical courses. Students can either start their professional life after graduating or proceed to higher education.
- Vocational Secondary Education: practice-oriented track that prepares students for a specific (often manual) profession. The focus is on acquiring skills rather than on theoretical knowledge. This degree does not grant direct access to higher education.

Table 1 presents an overview of the participants in terms of their age, gender and educational track. We filtered out data from respondents who did not complete the entire survey, and from one particular student who had made up silly answers for most of the questions. In order to deal with the imbalances with respect to gender and education, we will carry out analyses to examine the impact of these social variables on the teenagers' replies.

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8 I.e. living in Flanders, the Dutch-speaking part of Belgium.

Table 1: Distribution of the survey participants.

		Educational track			
		General	**Technical**	**Vocational**	**Total**
Gender	**Girls**	25	53	24	102 (61 %)
	Boys	22	24	20	66 (39 %)
	Total	47 (28 %)	77 (46 %)	44 (26 %)	**168**

3.3 Corpus

The chat messages used in the survey were extracted from a large social media corpus collected by the authors of this paper. The corpus has been extensively described and analyzed in previous work (see e.g. Hilte et al. 2018a, 2018b, forthcoming). It consists of 434 537 social media posts (>2.5 million tokens) written by 1384 secondary school students in the three educational tracks described in Section 3.2, 13 to 20 years old. Almost all students (96 %) live in the central Flemish province of Antwerp. The posts are private instant messages produced in Dutch on Facebook Messenger and WhatsApp. The vast majority of the tokens (87 %) was produced between 2015 and 2016. Table 2 presents an overview of the distributions in the corpus.

Table 2: Distributions in the corpus

Variable	Variable levels	Tokens
Educational track	General	739 831 (29 %)
	Technical	1 151 684 (46 %)
	Vocational	639 839 (25 %)
Gender	Girls	1 696 517 (67 %)
	Boys	834 837 (33 %)
Age	Younger teenagers (13–16)	1 360 898 (54 %)
	Older teenagers / young adults (17–20)	1 170 456 (46 %)
Total		2 531 354

4 Results

In this section, the participants' responses to the survey are discussed and analyzed per question block.

4.1 Block 1-4: Author profiling tasks

The participants were presented with 15 authentic chat messages for which they had to guess the authors' gender, age or educational track. Figure 7 visualizes their performance and sociolinguistic awareness. The former refers to the performance in the profiling tasks (i.e. the percentage of correct responses per subtask for all participants). The latter indicates the extent to which youths are aware of and believe in the existence of these sociolinguistic patterns in social media writing. We recall that responses to these statements were to be made on a 5-point Likert-scale ('completely disagree', 'disagree', 'neutral', 'agree' and 'completely agree'). The 'awareness'-graph shows the combined percentage of 'agree'- and 'completely agree'-responses on the existence of gender-, age- and education-related linguistic patterns in chatspeak.
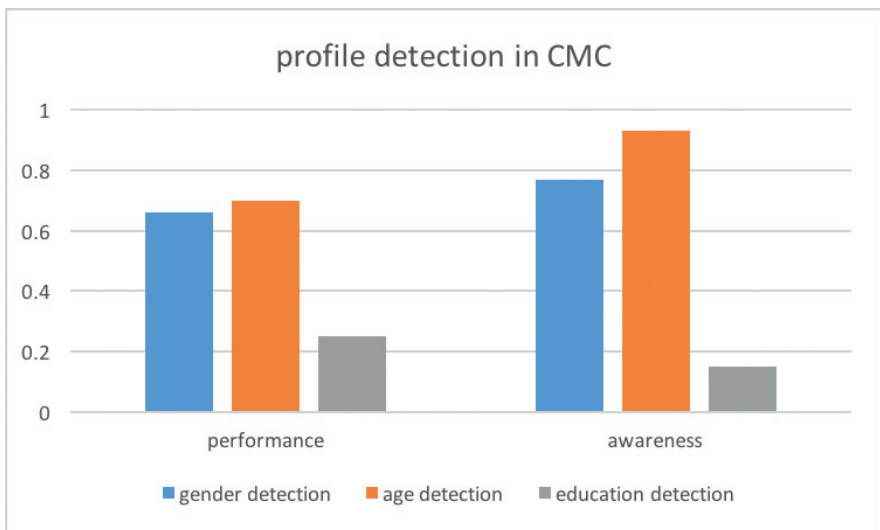

Figure 7: Survey results: Author profiling

As Figure 7 shows, respondents score much lower for education profiling compared to age and gender, in terms of both performance and awareness: the students do not

only perform worse in guessing authors' educational track, the awareness or belief with respect to education-related linguistic differences is much weaker too. These differences are highly statistically significant: as for performance, the number of correct answers (versus incorrect and 'don't know'-replies) correlated significantly and strongly with the nature of the task (i.e. age, gender or education detection) ($p <$ .00001, chisq. = 402.64, Cramer's V = 0.40). As for the awareness-statements, agreement with (versus disagreement with or a neutral opinion on) the existence of these sociolinguistic differences significantly and very strongly correlated with the nature of the task ($p <$ .000001, chisq. = 412.72, Cramer's V = 0.70). Below, we discuss the different tasks in a more detailed way.

4.1.1 Gender profiling

Most participants (77 %) agreed on the existence of linguistic gender differences in chat messages. Others (18 %) had no opinion – i.e. they checked the 'neutral' box in the middle of the scale –, and only very few disagreed (5 %). This rather strong sociolinguistic awareness was reflected in the performance in the detection task: 66 % of the gender assignments were correct (versus 12 % incorrect and 22 % 'don't know'-replies). Additional tests with generalized linear mixed models (GLMMs) revealed no significant impact of participants' age, gender or educational track on their performance in the detection task or on their awareness of linguistic gender differences.

In the detection task, the participants were free to list the cues they used in their decision-making. Table 3 summarizes the arguments. The validity of the arguments rendered in bold and italics could be confirmed by our corpus data: for these features, a statistically significant gender difference was actually found in the reference corpus.

Table 3: Survey results: Adolescents' intuitions on linguistic gender differences in informal CMC

FEMALE	MALE
Chatspeak:	**Chatspeak:**
– more emoticons, esp. hearts	**– fewer/no emoticons, esp. hearts**
– letter reduplication	
Correctness:	**Correctness:**
– correct language,	– incorrect language
incl. punctuation and capitals	**– slang, dialect**
Vocabulary:	**Vocabulary:**
– 'omg'	– some dialect words

Table 3: (continued)

FEMALE	MALE
Tone of the conversation: – sweet, soft, kind messages – polite	**Tone of the conversation:** – rude, short messages – impolite
Character/nature girls apparent in text: – enthusiastic, overly happy	**Character/nature boys apparent in text:** – short, practical
Content: – gossip – sleepovers	**Content:** /

The participants used both stylistic and content-related features in their decision-making. With regards to content, they considered utterances about sleepovers or gossip as typically female, as well as enthusiastic or overly happy messages, whereas short, practical messages were seen as typically male. In addition, they linked messages that came across as sweet, soft and polite to female authors and rude, short and impolite messages to male authors. While we have not investigated these content- and tone-related dimensions in our corpus, the validity of many of these features as gender markers is confirmed by related quantitative studies. Two studies may serve as main points of reference: both Schwartz et al. (2013) and Argamon et al. (2009) examine corpora of English blog posts and report the most prominent and distinctive lexemes for male and female authors. Many of the female authors' top lexemes express strong enthusiasm (e.g. *excited*, *yay*) or a positive sentiment (e.g. *wonderful, amazing*) (Argamon et al. 2009: 121; Schwartz et al. 2013: 8). A female preference for positive emotion words has been attested in spoken conversations too (Mehl & Pennebaker 2003: 866). Furthermore, intensifiers, which "amplify and emphasize the meaning of an adjective or adverb" (Stenström et al. 2002: 139), were found to be used significantly more frequently by women or girls than by men or boys (Stenström et al. 2002: 142, and references therein). Schwartz et al. (2013: 8) indeed report that *super* and *so* are used abundantly in female blogs. Furthermore, the (reported) 'sweet' nature of female texts has been attested in corpora too, as love- and friendship-related lexemes appear to be typically female (e.g. *sweetheart*, *bestie*) (Argamon et al. 2009: 121; Schwartz et al. 2013: 8). In addition, women generally use more polite linguistic forms (Newman et al. 2008: 213, and references therein). Similarly, the reported harsher character of male texts can be related to a male preference for curse words reported in several studies, or to a male preference for anger-related words (see e.g. Mehl & Pennebaker 2003: 866; Newman et al. 2008: 213–214, and references therein; Schwartz et al. 2013: 8).

As for stylistic features, the participants interpreted a more frequent use of emoticons and especially hearts as more typical of girls. In previous research, a higher frequency of emoticons has indeed been attested in female utterances (see e.g. Baron 2004: 415; Herring & Martinson 2004: 436; Kucukyilmaz et al. 2006: 282; Parkins 2012: 52; Schwartz et al. 2013: 8). Heart-emoticons in particular appear to be prominent in female CMC (Hilte et al. 2018c: 316; Schwartz et al. 2013: 8). The same tendencies prevail in our corpus: emoticons are used significantly more often by girls than boys (p < .0001, chisq. = 7101.96, odds ratio = 1.71), and this tendency is even more outspoken for heart-emoticons (p < .0001, chisq. = 3985.79, odds ratio = 2.27). The survey participants also perceived the use of letter repetition (e.g. *soooo nice*) as a typically female preference pattern that is manifest in our corpus too (p < .0001, chisq. = 1260.03, odds ratio = 1.73) and has been corroborated by previous research (see Hilte et al. 2018c: 311–312 for findings on older CMC-data; Schwartz et al. 2013: 8). With respect to the dimension standard versus substandard, the respondents considered the use of 'correct' standard language to be typically female, whereas substandard language (e.g. the use of dialect words) was characterized as male. In the corpus, the female chatters indeed use significantly more 'correct' standard Dutch words – although the effect size is not large – (p < .0001, chisq. = 410.58, odds ratio = 1.06) and the boys use significantly more non-standard Dutch lexemes (e.g. slang words or words that contain phonological dialect features) (p < .0001, chisq. = 1569.18, odds ratio = 1.15). In addition, sociolinguistic studies have reported on a male preference for 'old vernacular' or traditional non-standardness even amongst youths (see e.g. Hilte et al., forthcoming; Labov 1972; Labov 2001). Finally, the participants linked the acronym *omg* ('oh my god') to girls as well. *Omg* is one of the prominent female features reported by Schwartz et al. (2013: 8), and is strongly preferred by girls in our corpus too (p < .0001, chisq. = 603.55, odds ratio = 7.24).

4.1.2 Age profiling

Even more so than for gender, the participants showed a strong awareness of linguistic age differences in adolescents' online writing: most of them (93 %) confirmed the presence of age patterns, there were hardly any neutral (4 %) or negative (3 %) responses. This awareness was also reflected in the students' performance in the detection task: 70 % of the age assignments were correct, compared to 18 % wrong and 12.5 % 'don't know'-replies. The participants' profile did not significantly influence their performance.

The cues used by the participants are summarized in Table 4. Again, the relevance of the features rendered in bold and italics was corroborated by our CMC-data.

For the features that are struck through however, we found no support in the corpus (e.g. no significant differences could be attested or the opposite pattern was found).

Table 4: Survey results: Adolescents' intuitions on linguistic age differences in informal CMC

YOUNGER TEENAGERS (13–16)	OLDER TEENAGERS / YOUNG ADULTS (17–20)
Chatspeak: – *many emoji (+ reduplication)* – *laughter ('hahahah')*	**Chatspeak:** – *fewer/no emoji* – *fewer abbreviations*
Correctness: – *spelling errors,* "ugly/childish" *spelling,* often on purpose	**Correctness:** – *correct, unabbreviated* – ~~correctly spelled English words~~ – formal
Vocabulary:	**Vocabulary:** – ~~English words~~ – insults/curse words (often not meant negatively)
Character/nature younger teenagers apparent in text: – don't care about correct writing – laziness – desire to be cool	**Character/nature young adults apparent in text:** – think about what to say / how to say it
Content: – party less – care more about school	**Content:** – party more – care less about school

Again, the participants used both content- and style-related features in their decision-making. With regards to content, they considered chat messages about partying to be typical of older adolescents, as they claim that younger teenagers "do not go to that many parties / are hardly allowed to go to parties". They also perceived texts in which the author appeared to care about school as more typical of younger adolescents. These features correspond more or less to the prominent age-related words reported by Schwartz et al. (2013) and Argamon et al. (2009), although some caution with respect to the comparability of the studies is needed: while we compare younger (aged 13–16) to older (17–20) high school students, Schwartz et al. compare teenagers (13–18) to college students (19–22), and Argamon et al. teenagers (13–17) to young adults in their twenties (23–27). Yet, in spite of these differences in research design, some interesting parallel tendencies can be noted: in the teenage group, school-related words are indeed more abundant (e.g. *homework*, *math*), and for the older group, more words about partying occur (e.g. *drunk*, *hangover*) (Argamon et al. 2009: 121–122; Schwartz et al. 2013: 10).

As for stylistic features, the survey participants linked a more frequent use of emoticons, onomatopoeic renditions of laughter and chatspeak abbreviations to young adolescents. These intuitions correspond to research findings: from previous studies (Hilte et al. 2018c: 311–312; Verheijen 2015: 135–136; Verheijen 2016: 283–285) and our current corpus ($p < .0001$, chisq. = 11025.14, odds ratio = 1.82) it appears that younger adolescents show a stronger preference for emoticons than adolescents nearing adulthood. In addition, the younger group in our corpus uses significantly more renditions of laughter – although the effect size is small – ($p < .0001$, chisq. = 81.30, odds ratio = 1.08) as well as more non-standard abbreviations ($p < .0001$, chisq. = 338.55, odds ratio = 1.26). The survey participants also interpreted the occurrence of spelling "deviations" (both genuine errors and deliberate manipulations) as typical of younger chatters, and standard writing as typical of older ones. In related research, it is widely accepted that non-standard language use culminates around the age of 15–16 and then decreases as teenagers age – i.e. the 'adolescent peak' (De Decker & Vandekerckhove 2017: 277; Holmes 1992: 184). In our corpus the ratio of words that are spelled conform standard Dutch spelling is higher in older adolescents' CMC than in that of younger teenagers ($p < .0001$, chisq. = 2199.90, odds ratio = 1.15). However, the survey participants' intuitions are not always accurate. For instance, in our data, more English words are produced by younger adolescents and not, as the participants thought, by older ones.

Strikingly, the participants' replies for this task contained much more negative evaluative language compared to their replies for gender detection. The students appeared to have strong judgmental attitudes towards younger teenagers' online writing practices, calling their non-standard spelling forms "ugly" and "childish", often assuming that spelling errors were made on purpose. Some participants explicitly noted that younger teenagers do not care about correct writing, that they are lazy, and that they are exclusively focused on being "cool". These questions on linguistic attitudes thus also reveal attitudes on the *people* (in this case young teenagers) associated with certain language varieties or phenomena (cf. Lybaert 2014: 24, and references therein).

4.1.3 Education profiling

The participants did not seem to be aware of or even believe in linguistic differences in the online writing practice of teenagers with different educational backgrounds: 52 % explicitly denied the potential existence of such patterns, 33 % were neutral and only 15 % agreed. This general disbelief was also reflected in the performance in the detection task: only 25 % of the answers was correct, versus 35 % incorrect and 39 % 'don't know'-replies. Once again, the participants' social

profile did not significantly influence their performance or their overall aware-ness of educational differences. However, a difference could be found when split-ting up the three awareness questions (i.e. per pair of educational tracks). For two out of these three subquestions, gender was a significant predictor, with girls be-lieving (even) less in the linguistic educational difference than boys. This is a striking result, as more educational linguistic variation has actually been found in the online writing of teenage girls compared to boys (Hilte et al., forthcoming).

Table 5 summarizes the cues used by the participants in the detection task. The relevance of the features rendered in bold and italics was corroborated by the reference corpus, i.e. these features were used significantly more or less fre-quently by students in particular educational tracks. For the features that are struck through however, we found no support in the data.

Table 5: Survey result: Adolescents' intuitions on linguistic educational differences in informal CMC

GENERAL	TECHNICAL	VOCATIONAL
Chatspeak:	**Chatspeak:** – ~~emoticons~~	**Chatspeak:** – *many emoticons* – *repetition of punctuation marks* – ~~allcaps~~
Correctness: – *correct standard language /* *spelling* – Formal writing	**Correctness:** – *dialect* ~~✗~~ – ~~correct standard~~ ~~spelling~~	**Correctness:** – *("obvious") spelling mistakes* – *abbreviated* – *no standard Dutch* – incorrect/"weird" syntactic constructions
Punctuation: – correct (formal) use of punctuation marks	**Punctuation:** /	**Punctuation:** – *either no punctuation marks at all,* *or repetition (see chatspeak features)*
Capital letters: – correct capitalization	**Capital letters:** /	**Capital letters:** – ~~either no capital letters or allcaps~~
Character/nature students apparent in text: – inquisitive (school context)	**Character/nature students apparent in text:** – very social	**Character/nature students apparent in text:** – social – do not care about school
Content: – more planning – taking notes in class	**Content:** – cooking courses – asking for notes, checking timetable classes	**Content:** – cooking courses, skills, practice-rather than theory-oriented studying

Once again, the cues are both content- and style-related. With regards to content, the participants linked the topic of the messages to (their idea of) the courses and mindset in the different educational tracks. Students in General Education were thought to plan more and take more notes in class. Students in the less theory-oriented Technical Education were assumed to take notes and ask for notes too, as well as to check timetables for classes with their interlocutors. In addition, the more practice-oriented aspect of their education emerged as well: they were linked to chat messages about cooking, as cooking courses might be a part of their specific educational track. Other participants, however, linked the topic of cooking courses to the practice-oriented Vocational Education, along with chat messages about skills or practice-related issues rather than theory-oriented studying. Furthermore, inquisitiveness was linked to General students, whereas Vocational students tended to be associated with indifference with respect to school. Finally, students in the more practice-oriented tracks (Technical and Vocational) were attributed a greater social involvement.

As for the stylistic features, some typical chatspeak markers were mentioned. The participants considered the use of emoticons and the repetition of punctuation marks to be typical of Vocational students. This tendency is supported by our CMC-corpus data since these features occur more often in conversations by Vocational students (versus those produced by all other students) ($p < .0001$, chisq. = 28119.82, odds ratio = 2.46 for emoji; $p < .0001$, chisq. = 170.37, odds ratio = 1.29 for punctuation repetition). The rendering of entire words or phrases in capital letters ('allcaps') was also perceived as typical of Vocational students and, once again, this preference pattern is statistically significant in the reference corpus, although the effect size is very small ($p = .0021$, chisq. = 9.45, odds ratio = 1.06). Furthermore, the respondents correctly assumed that General Education students had a greater preference for standard writing ($p < .0001$, chisq. = 7386.24, odds ratio = 1.33 for the use of standard Dutch lexemes), whereas a higher ratio of non-standard lexemes (e.g. dialect words, or words containing spelling mistakes or other non-standard features) and non-standard abbreviated forms were correctly linked to Vocational students ($p < .0001$, chisq. = 351.85, odds ratio = 1.07 for non-standard Dutch lexemes; $p < .0001$ chisq. = 357.23, odds ratio = 1.28 for abbreviations). Concerning Technical students' language use, there was no consensus among the survey participants: while some thought that these students' messages contained more dialect words, others thought they were closer to the linguistic standard. Only the former assumption was supported by the reference corpus ($p < .0001$, chisq. = 6460.98, odds ratio = 1.31). Another assumption that was not supported by the corpus concerned a supposedly higher preference for emoticons amongst Technical students. The less accurate assessments of the characteristics of Technical students' CMC seem to reflect the actual

practice of this group: time and again we found that the writing practices of this group, which is in the middle of the educational spectrum, are more varied and unpredictable than those of the other groups (see e.g. Hilte et al. 2018a: 14–15).

While some negative evaluative comments could be found among the participants' responses, especially about Vocational students' writing (who were attributed "obvious" or avoidable linguistic errors and an indifferent attitude), other participants explicitly expressed their reluctance with respect to the assumed existence of educational linguistic patterns. Whereas linguistic age and gender patterns are generally accepted, educational differences are not. We have to emphasize, however, that this reveals a discrepancy between the perception on online writing practices and the actual production, as our corpus does reveal statistically significant and very consistent linguistic differences between distinct education groups (see also Hilte et al. 2018a, 2018b, forthcoming).

4.2 Block 5: Correction or conversion task

In the next part of the survey, the participants were instructed to detect, 'correct' (i.e. convert into the formal standard equivalent) and give their opinion on different features that do not occur in formal standard writing. The features were embedded in chat messages written by their peers. We note that we only report 'non-standard' items as 'detected' when they were also corrected adequately, since in some cases the respondents actually adapted words that in no respect differed from formal standard Dutch and left the item in question unchanged. Similarly, we only report intolerance scores for participants who succeeded in detecting and correcting the actual 'non-standard' feature. For all participants combined, 62 % of the 'non-standard' markers were both detected and corrected adequately. A low intolerance score (i.e. number of 'would bother me on social media'-responses) of 11 % could be noted. The other 89 % of these responses were very heterogeneous, containing replies by students who noticed the divergent feature but felt neutral about it or were not bothered by it, but also replies by students who simply did not notice it.

However, these average scores obfuscate highly diverging results for the distinct types of 'non-standard' features: while most prototypical CMC divergences from standard Dutch are detected well, classical (not CMC-related) spelling errors are not. The most striking example relates to a highly stigmatized morphological spelling error in Dutch verb conjugation (see e.g. Sandra et al. 2004):

(1) original: *Ja maar de klank verander**d** ook precies*
     correction: *Ja maar de klank verander**t** ook precies*
     translation: 'Yes, but the sound changes too, it seems'

Strikingly, only 34 % of the participants were convinced that the sentence contained a non-standard item and only 10 % of all participants saw the actual mistake and adapted it adequately[9]. Consequently, the other 24 % of the students who claimed to have spotted the mistake actually hadn't, but instead focused on (and 'corrected') another part of the utterance[10] (which was not incorrect and thus irrelevant in the context of this question).

As opposed to the classical spelling errors, typical chatspeak features (e.g. non-standard abbreviations) were detected and adapted very well: for these features, scores of 89 % or higher were obtained. These results suggest the existence of register sensitivity among the participants, as the adolescents appear to be very well aware of the non-standard nature of typical CMC-characteristics or at least know that these features can be no part of formal writing (see also Vandekerckhove & Sandra 2016).

Finally, for the attitudinal dimension, the participants were asked to give their opinion on the different 'non-standard' elements by indicating their (dis) agreement with the following statement: 'This "mistake" would bother me in a chat message on Facebook or WhatsApp'. A predominantly tolerant tendency could be noted: most participants claimed not to be bothered at all by most of the features in a CMC-context. The only clear exception was the non-standard spelling of *schattig* ('cute') as *sgattig* – a typical form of Dutch chatspeak spelling where the consonant cluster 'sch' (/sX/) is replaced by the phonologically equivalent (but non-standard Dutch) spelling 'sg':

(2)   original: *Jij bent* **sgattig**
      correction: *Jij bent* **schattig**
      translation: 'You are cute'

Surprisingly, 49 % of the participants claimed this mistake would bother them in a social media context. This is a strikingly high percentage, as none of the other non-standard features bothered more than 11 % of the participants. This specific spelling manipulation appears to be typical of young teenagers' chatspeak: while occurrences of *schattig* (i.e. correct formal spelling) in the reference corpus are quite evenly distributed among the age groups (54 % of all 529 occurrences are produced by younger and 46 % by older adolescents), *sgattig* is used much more frequently by the younger group (89 % of all 47 occurrences by younger and 11 %

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9 A clear education divide could be observed for this particular spelling error. While respectively 15 % and 13 % of the General and Technical students identified the error and adapted it adequately, none of the practice-oriented Vocational students did.

10 Some participants, for instance, replaced the word *klank* ('sound') with a synonym, such as *geluid*.

by older teenagers). The participants' negative attitude towards example (2) may thus be linked to their negative evaluation of younger teenagers' CMC (see Section 4.1.2).

Finally, additional GLMM-analyses revealed a significant influence of the participants' age and educational background on their performance in this correction task: higher probabilities for correct answers were associated with older teenagers and teenagers in General Education. These findings thus indicate a stronger proficiency in formal standard writing for students in the most theory-oriented educational track compared to students in more practice-oriented tracks, which might reflect the extent to which formal writing is focused on in different educational systems. In addition, regardless of educational background, all students' proficiency in standard Dutch seems to increase as they age. We can compare these results to the findings by Verheijen and Spooren, who provided Dutch youths with a similar correction task: their participants were instructed to detect and correct linguistic 'errors', which could either be CMC-related features or more classical spelling errors in Dutch (2017: 7). No information was provided in the paper on the types of errors that were harder to identify or correct. The youths' performance, however, was positively predicted by their educational level, and surprisingly, also by their gender: both higher educated and female participants obtained higher scores in the task. Unlike in the present survey however, Verheijen and Spooren (2017: 9) found no significant age differences.

4.3 Block 6: The relevance of standard Dutch and self-reported proficiency

In view of the concerns with respect to the impact of CMC on the formal literacy of youths, we included some questions that relate to the perception of standard language proficiency and the reflection of standard language ideologies. The answers show a broad consensus with highly similar attitudes amongst the different teenage groups.

Almost all participants (92 %) subscribe to the importance of standard Dutch in written school assignments. With regards to electronic communication, the students showed proof of register sensitivity: 95 % indicated to use another register when writing an email to a teacher than when doing this to a friend. Concerning their teachers, 79 % of the participants expected the *Dutch* teacher to speak in a standard register, whereas only 58 % did so for teachers of other courses. The responses for this last question, however, were significantly influenced by the participants' age: older adolescents attached more importance to the use of standard Dutch by teachers regardless of their subject. Furthermore, almost all parti-

cipants (92 %) believed a good proficiency in standard Dutch would increase their chances of finding a job. However, less than two third of all students (62 %) claimed to actually *be* proficient in the standard register. The potential use of standard Dutch in social media was generally met with indifference: while only a small minority of the participants (9 %) explicitly appreciated the use of the standard register in online chat conversations, an equally small minority (9 %) claimed to be bothered by it[11].

This discrepancy between the adolescents' overt granting of prestige to the standard register and the low assessment of their own proficiency in that particular register lays bare that standard Dutch in Flanders is largely a virtual ideal (see Grondelaers et al. 2011) that is generally acknowledged as the preferred variant but not at all generally acquired.

Finally, none of the reported tendencies – except for the question on teachers – were significantly influenced by the participants' profile. Consequently, Flemish adolescents with different backgrounds appear to have very similar attitudes on standard language use. Strikingly, the different focus on formal Dutch proficiency in the distinct school systems does not seem to influence the students' opinions on the importance of the register in particular contexts, or on their own proficiency in the register.

4.4 Block 7: The social indexicality of (CMC-)features

The seventh question block in the survey concerned potential negative or positive connotations of certain linguistic features in chat messages. For different chat utterances, the participants had to evaluate how friendly or kind they thought the author was. Several of these utterances were very similar except for one specific element.

Three groups of variations on the same sentence were presented to the participants. In the different variations, the original sentence either ended with emoticons or emoji, with a full stop, or with no emoji or punctuation whatsoever (see example (3) below). These related messages were not presented together to the participants, as the order of all utterances in this block was randomized. The following tendencies were observed: when the sentence ended with no punctuation marks or emoji, as in (3a), most participants had a neutral opinion on the author's

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11 We do not know which specific standard language features the participants had in mind when replying to this question. However, the finding that the majority of the participants are not at all bothered by the use of a standard repertoire on social media is remarkable, since the standard repertoire has been considered a potential trigger of "traditional superiority perceptions which are at odds with the local coolness demands" (Grondelaers et al. 2016: 138) – see above.

friendliness. When the message ended with a full stop, as in (3b), most participants considered the author to be unfriendly, whereas when it ended with emoji (either hearts or smiley faces), as in (3c), most of them considered the author to be friendly. These findings support the idea that full stops (and to a lesser extent the absence of punctuation marks whatsoever) may be perceived as unfriendly, and even rude or somewhat passive aggressive. Emoji, on the other hand, appear to mitigate the message expressed in a chat utterance.

(3a) *Ook goe*   '[That's] fine too'
(3b) *Ook goe.*   '[That's] fine too.'
(3c) *Ook goe* 💕   '[That's] fine too 💕'

Next, we examined the connotation of the thumb-emoji used as a reply to another chatter's message. Again, the same tendencies could be observed for the two examples included in the survey, with 'thumb-replying' authors being perceived as unfriendly by most participants. In example (4), especially, author B appeared to come across as highly unfriendly, with 78 % 'unfriendly' votes. This very outspoken non-appreciation could be linked to the fact that the thumb-emoji is used as a response to a fairly personal message, which may be a context in which such a short non-verbal reply is considered 'not done'.

(4)   Author A: *Sorry*
       Author B: 👍

Interestingly, the participants' profile interfered with their responses. Additional GLMM-analyses indicated that girls and students in more theory-oriented educational tracks are significantly more "sensitive" to the indexicality of particular non-verbal features in social media utterances (i.e. these youths are significantly more likely to perceive certain features as carrying a potential negative load). For all teenagers, however, this sensitivity appears to increase as they grow older, which suggests that teenagers gradually acquire CMC-norms.

4.5 Block 8: Ranking chat messages

In the final block of the survey, the participants had to rank 13 authentic chat messages (written by their peers) by preference or appeal. Since their own practices were the reference point, the results potentially point to the role of particular features in their personal online identity construction: which features carry enough positive connotations for them to be included in their own self-reported writing practices and which do not? Below, we focus on the extremes of the scales: i.e. the features that got an overall high or low ranking.

Most messages that were clearly popular among many participants contained English words or abbreviations:

(5) *Hellooooo xx*   ('Hello xx')
(6) *Thanks*   ('Thanks')
(7) *Wtf haha*   ('What the fuck haha')

Consequently, the incorporation of English in Dutch chat conversations seems to hold prestige in the eyes of many Flemish adolescents, regardless of their socio-demographic profile, and has much potential for identity construction.

Utterances containing an abundance of either new (example (8)) or old vernacular features (example (9)) were evaluated negatively by most participants. While e.g. the use of expressive markers such as emoji certainly tends to be appreciated by the adolescents, they generally dissociate themselves from the excessive use of them. In other words, proportions matter.

(8) 😂😂🖤🖤💖💖😊 *hahaha als ge rustig fietst komt alles in orde* 🖤😂🙈🙈😆
                          ('hahaha if you bike slowly, everything will be fine')
(9) *Vorwa da na wer??!!*   ('Now what is that for??!!')

However, there is a clear gender and education divide concerning utterances that are very typographically expressive, such as (8). These messages were evaluated negatively by most boys, whereas the girls' reactions were more varied. In addition, while such highly expressive messages were evaluated negatively by almost all General Education students, responses were more varied among Vocational and Technical students. We recall that a quantitative difference in emoticon use could be attested in the reference corpus and for gender in related research too. Girls use significantly more emoticons than boys ($p < .0001$, chisq. = 7101.96, odds ratio = 1.71) (see also e.g. Baron 2004: 415; Herring & Martinson 2004: 436; Kucukyilmaz et al. 2006: 282; Parkins 2012: 52). Students in General Education use significantly fewer emoticons than their peers in other tracks, although the odds ratio is very small ($p < .0001$, chisq. = 28119.82, odds ratio = 2.46 for emoji; $p < .0001$, chisq. = 127.50, odds ratio = 1.07).

These findings on adolescents' attitudes with respect to online writing can complement previous results on youths' production of CMC, as they show that teenagers with distinct socio-demographic profiles do not only use certain chat-speak features to different extents, but that they appear to do so out of a difference in appreciation of these linguistic markers.

5 Conclusion

This study analyzed adolescents' perception of their peers' writing practices on social media, reporting on a survey conducted among 168 Flemish high school students. The questions and tasks were designed to examine the participants' linguistic attitudes, their awareness of sociolinguistic patterns in online language use, and to a minor extent their (formal) writing skills. Consequently, the survey data may provide insight in how adolescents linguistically structure their social surroundings.

With respect to the awareness of social patterns in CMC, very different results emerged for the estimated effect of education compared to age and gender. The participants performed fairly well for age and gender detection. In terms of enregisterment, the conclusion is that particular features are enregistered as indexes of social group belonging and more specifically as male or female or as indexical of early adolescence or late adolescence. However, there is no such enregisterment as far as educational background is concerned: adolescents hardly believed in educational differences in online writing and performed much worse in the education detection tasks. In addition, the linguistic cues they used in their decision-making were less accurate for this specific social variable. These results are quite striking, since clearly distinct writing patterns for teenagers with different educational backgrounds can be attested in our social media corpus, which consists of online conversations produced by their peers. However, this discrepancy between teenagers' perception and production of CMC in terms of educational patterns might – at least partially – be related to the more sensitive nature of this topic: respondents appeared to be quite reluctant when confronted with questions on the impact of education, which may partly be due to the fact that classification on educational background involves hierarchization or may be perceived as such. An alternative explanation is that teenagers in different educational tracks truly live in different 'worlds', and are less aware of each other's (linguistic) practices due to the absence of frequent contacts across educational tracks. In other words, it seems very likely that (online) conversations among interlocutors with distinct educational backgrounds are much less common than conversations between boys and girls (they are in mixed gender school classes), or between teenagers of a different age (they may e.g. have siblings of different ages). This should be verified in further research, but support for this hypothesis may be found in the restricted social mobility that was attested for the adolescents in the reference corpus (Hilte et al. 2018a, 2018b).

The tasks that focused on the detection of divergences from formal standard writing, both in the form of chatspeak markers and common spelling errors, displayed a striking combination of a fairly high register sensitivity with poor spelling

skills: typical chatspeak markers were detected with high accuracy, whereas performance for classical spelling errors was much worse. This suggests that adolescents use typical chatspeak features intentionally, and that they are aware of the genre-specific (in)appropriateness of these linguistic markers. These results can therefore contribute to the debate on the potential negative effects of CMC on literacy, offering a more positive perspective by showing how teenagers are mostly unaware of classical language errors, whereas they do show awareness and register sensitivity when it comes to CMC-specific divergences from formal writing. Furthermore, the results clearly showed that most of the non-standard markers did not bother the participants when used in social media contexts. Additional questions on the importance of standard Dutch indeed revealed that the participants only considered this register to be vital in formal (e.g. school-related) contexts. With the latter attitude, while they clearly pay lip service to the classical standard language ideology, we cannot but conclude that they display some degree of indifference with respect to the standard language as well. Moreover, less than two third of all participants (with no significant distinction between the different educational tracks) considered themselves to actually be proficient in standard Dutch, which might also point to a certain dissociation from the standard register: while nearly all of them overtly acknowledge its formal prestige, more than one third does not claim proper proficiency, in spite of it being the variety of formal education. Obviously this raises questions with respect to its potential in terms of practice. In this respect the results align with previous studies pointing to a strong standard language ideology in Flanders versus poor practice (see especially the studies by Grondelaers et al. 2011, 2016 and Grondelaers & van Hout 2011).

Finally, although many linguistic variants and varieties – ranging from a very non-standard to a very standard register – seem to be 'accepted' on social media, they are not all appreciated to the same extent. The use of certain non-verbal elements in chat messages appeared to evoke negative connotations: for instance, authors who ended their chat messages with a full stop were often perceived as unfriendly. This points to the existence of alternative norms for online writing: it may be wise to avoid using full stops at the end of an utterance if you want to create goodwill. A moderate use of emoji for closing messages in many cases seems a preferable strategy, since both the responses to the survey questions and the analyses of online writing practices in our reference corpus reveal that adolescents appreciate the use of typical CMC expressive markers (e.g. emoji). However, it is crucial to use them in the right doses. Moreover, the right dosage tends to be different for different social groups: the tolerance level for e.g. the use of emoji is much lower amongst high educated adolescents and boys than amongst girls and lower educated adolescents. Interestingly, these differences in appreciation perfectly correspond to actual frequency patterns in adolescents' CMC as attested in

our corpus. Finally, with respect to the appreciation of particular features, another strategy for increasing media coolness appears to be the integration of English slang (i.e. English that is no part of Standard Dutch).

Strikingly, unlike the results for the appreciation of particular chatspeak features discussed in the previous paragraph, most of the survey responses were not significantly influenced by the participants' socio-demographic profile, which shows that when it comes to linguistic attitudes and perceptions, most Flemish teenagers share a common ground, regardless of their specific age, gender or educational track. However, some subtle but interesting differences could be noted. For instance, girls showed a significantly weaker awareness of or 'belief' in educational linguistic differences – although, as has been shown in previous research, more pronounced educational differences can be found in girls' social media writing than in boys' (Hilte et al., forthcoming). Consequently, the discrepancy between CMC production and perception in terms of educational patterns seems to be larger for teenage girls than boys. With regards to linguistic skills, we found that while all teenagers performed rather well in the 'correction' task, older teenagers and teenagers in the theory-oriented General Education were more likely to detect and adequately convert the divergences from formal standard writing. These findings suggest that although highly educated teenagers are more proficient in the standard register – which is likely to be an effect of their more theory-oriented education – *all* adolescents, no matter their educational track, become more proficient as they grow older. A final attitudinal difference consisted in girls and higher educated teenagers showing a higher sensitivity to potential negative connotations evoked by certain non-verbal features in chat messages. This sensitivity also appeared to increase as teenagers grow older.

We can conclude that this attitudinal study on teenagers' CMC can contribute to the debate on the effects of online writing on youths' literacy, and can be combined with variationist sociolinguistic studies to provide more insight in adolescents' production of CMC, answering not only the question of *how* teenagers write on social media, but also *why*. Whereas Flemish adolescents clearly appear to share a common ground concerning their attitudes and perceptions with respect to online language use, the subtle differences and nuances that emerged from the analyses show that, just like for adolescents' *production* of computer-mediated communication, their *perception* of CMC is more complex and fascinating than one might initially think. Finally, with respect to the question formulated in the subtitle of this paper, it seems there is no straightforward answer: Has non-standard become the new standard? We might say to some extent it has, at least in social media contexts, since there appears to be quite a lot of indifference with respect to the use of standard language in online writing. However, following traditional standard language ideologies, the importance of standard language in formal contexts is clearly ac-

knowledged. Moreover, both the appreciation and disapproval of particular CMC features and the way they are used or the proportions in which they are used, points to the existence of alternative norms for informal writing. These findings are in line with the observed norm fragmentation that marks processes of demotization, rather than straightforward destandardization, and illustrates that norms are not only implemented in a top-down fashion, but may also emerge in an unplanned bottom-up manner (see Grondelaers & van Hout 2011).

In other words, though they cannot always clearly be delineated, there are standards for online writing too and though there seems to be a broad consensus with respect to the appreciation of particular features, these standards are not completely identical for different social groups. This brings us back to the starting point of this paper: informal writing has indeed contributed to a pluralization of (written) language norms (see Androutsopoulos 2011).

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