

# Cultural Differences and Algorithmic Journalism: A Cross-National Study on the Perception of Algorithm-Generated News by Recipients

AYNUR SARISAKALOĞLU

## Abstract

The use of artificial intelligence technologies for algorithm-generated text production is one of the most controversial recent developments in journalism. Generally, studies on algorithmic journalism examine its challenges and risks for media organizations and journalists. Very few studies, however, analyse the perception of automated content by recipients. Knowing how cultural differences influence the perception of algorithm-generated news is also important, since culture has a significant impact on how information is perceived by recipients. The purpose of this study is to examine differences in recipients' perception of automated news using Hall's (1976) model of high-context and low-context culture. For this, semi-structured interviews with twelve participants — some from a high-context culture, Turkey, and others from a low-context culture, Austria — were conducted between September 2019 and February 2020, and analysed in a comparative perspective to explore their perceptions of news stories generated by algorithms.

The results of the study confirm the existence of cultural differences in the perception of algorithm-generated news between high-context and low-context cultures with regard to journalistic quality criteria. Furthermore, it can be noted that Austrian news readers generally looked favourably upon the use of algorithms in journalism and assessed automatically generated news more positively than Turkish recipients.

**Keywords:** Cultural Differences, Algorithmic Journalism, High-Context Culture, Low-Context Culture

## Research Paper

---

Received: 20.04.2020

Accepted: 17.06.2020

---

ORCID ID: 0000-0002-1166-7084

aynur.sarisakaloglu@tau.edu.tr

## Kültürel Farklılıklar ve Algoritmik Gazetecilik: Algoritma Üretimi Haberlerin Hedef Kitle Algısına Dair Milletlerarası Bir Çalışma

AYNUR SARISAKALOĞLU

### Öz

Gazetecilikteki en tartışmalı yakın dönem gelişmelerden biri de algoritma üretimi metinler hazırlamak için yapay zekâ teknolojilerin kullanımınıdır. Algoritma gazeteciliği üzerine yapılan çalışmalar genel olarak bunun medya organizasyonları ve gazetecilere dair risklerini ve zorluklarını incelemektedir. Çok az çalışma ise hedef kitlenin otomatik üretilmiş içeriklere karşı tepkisini ele almaktadır. Kültürel farklılıkların algoritma üretimi, haberlerin algılanmasını nasıl etkilediği de önemlidir çünkü kültür hedef kitlenin verilen bilgileri algılamasında önemli bir rol oynar. Bu çalışmanın amacı, Hall'in (1976) yüksek-bağlamlı ve düşük-bağlamlı kültür kuramını kullanarak hedef kitlenin algısındaki farklılıkları ele almaktır. Bunun için bazıları yüksek-bağlamlı bir kültür olan Türkiye'den, bazıları ise düşük-bağlamlı bir kültür olan Avusturya'dan olmak üzere on iki katılımcıyla yarı-yapılandırılmış görüşmeler Eylül 2019 ve Şubat 2020 tarihleri arasında gerçekleştirilmiş ve karşılaştırmalı bir biçimde analiz edilerek katılımcıların algoritma tarafından üretilmiş haber içeriklerini nasıl algıladığı incelenmiştir.

Çalışmanın sonuçları, gazetecilik kriterleri bakımından ele alındığında yüksek-bağlamlı ve düşük-bağlamlı kültürlerin algoritma üretimi haberleri algılamasında farklılıklar olduğunu doğrular niteliktedir. Buna ek olarak, Avusturyalı haber okuyucuları genel olarak algoritma üretimi haberlere daha açık olduğu ve otomatik üretilmiş haber içeriklerini Türkiyeli katılımcılardan daha pozitif bir şekilde değerlendirdikleri belirtilebilir.

**Anahtar Kelimeler:** Kültürel Farklılıklar, Algoritmik Gazetecilik, Yüksek-Bağlamlı Kültür, Düşük-Bağlamlı Kültür

### Araştırma Makalesi

Geliş Tarihi: 20.04.2020

Kabul Tarihi: 17.06.2020

ORCID ID: 0000-0002-1166-7084

aynur.sarisakaloglu@tau.edu.tr

## 1. Introduction

For many years, cultural differences in the communication and interpretation of texts have preoccupied researchers from various disciplines such as communication sciences, anthropology, linguistics, and psychology (Hall, 1959; Hofstede, 1980; Kluckhohn and Strodtbeck, 1961; Maletzke, 1996). Culture as a “collective programming of the mind which distinguishes one group from another” plays a significant role in the use of media (Hofstede, 1980: 25). In particular, digitalization and the Internet entail new opportunities and challenges in many areas, such as journalism. The continuous digitalization of journalism and the resulting automation of news processing has not only changed the production and distribution methods of news, but also the reception of recipients depending on their cultural context. In addition, similar to past technological developments, algorithmic journalism (also known as ‘robot journalism’ (Clerwall, 2014) or ‘automated journalism’ (Graefe, 2016)) has also rekindled the debate on journalistic quality. This new type of journalism can be described as a “process of using software or algorithms to automatically generate news stories without human intervention” (Graefe, 2016: 14). Consequently, this ‘computational turn’ is no longer simply a matter of digitizing information, but of creating new information based on existing digitized data sets (Berry, 2011). Algorithms make it possible to use the same digital data to generate news stories from different perspectives, in varying lengths, and in multiple languages faster than human journalists (Graefe, 2016). Results from previous studies state that recipients can hardly perceive any differences between algorithm-generated and human-written news stories (Haim and Graefe, 2018).

Initial studies on algorithmic journalism essentially refer to the challenges and risks for media organizations and for the professional profile of journalists (Van Dalen, 2012; Thurman et al., 2017). Research on the perception of algorithmic journalism is scarce. A small number of studies, however, analyse how algorithm-generated news are perceived by recipients with regard to journalistic quality criteria (Van der Kaa and Kraemer, 2014; Clerwall, 2014; Graefe et al., 2016; Wölker and Powell, 2018). As technological advances make it easier to use news materials from all over the world, with this advantage emerges the need to also understand how recipients from different cultures perceive news generated by algorithms — as the perception of the messages conveyed differ depending on a culture’s methods of communication and interpretation. In this respect, Edward T. Hall (1976) differentiates between high-context cultures, in which the messages communicated in conversation are indirectly and implicit, and low-context cultures, in which statements are communicated directly and explicitly. According to

Hall (1976) context can be defined as the background information associated with the message of, for example a text, that enables the communicator to relay information about which recipients have existing knowledge. Thus, recipients perceive information against the background of their own context level. Accordingly, these different styles of communicating information across cultures is also important in understanding recipients' perception of algorithm-generated news.

## 2. Purpose of the study

The purpose of this study is to examine how recipients belonging to a high-context and a low-context culture perceive messages and assess the quality of algorithm-generated news in terms of journalistic quality criteria.

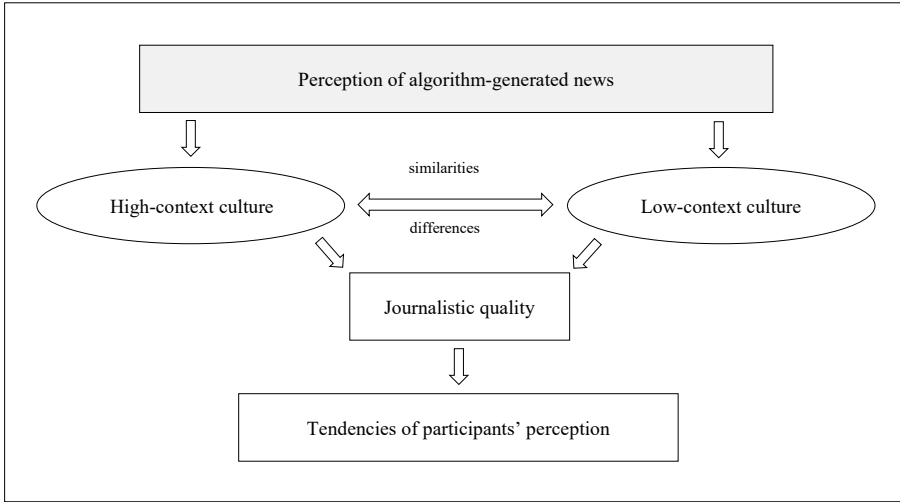
Many studies have attempted to divide national cultures into high-context or low-context cultures (Gudykunst et al., 1996; Kowner and Wiseman, 2003) based on Hall's (1976) theoretical concept. It should be noted, however, that both context levels can exist in one culture — though it is generally assumed that one predominates the other. High-context cultures, with their implicit and minimized content of messages, are common in Asian and Arabic cultures, whereas transmitting direct and explicit messages occurs predominantly in Germanic, Scandinavian and American cultures (Hall, 1976; Chua and Gudykunst, 1987; Gudykunst et al., 1996). When contemplating the divide into high- and low-context cultures, Turkey emerges as one of the most apparent high-context cultures; while Austria is on the contrary referred to as a preeminent low-context culture (Hall, 1976). Hence, this analysis of the perception of algorithm-generated news is based on Turkish recipients as representing a high-context culture, and Austrian recipients who represent a low-context culture. Against this background, the present study examines the following research questions:

RQ 1: How are algorithm-generated news perceived by Turkish and Austrian recipients in relation to journalistic quality criteria?

RQ 2: What kind of tendencies can be identified in the perception of algorithm-generated news between recipients from high- and low-context cultures?

The study has been conducted in two steps (Figure 1). Firstly, the study attempts to identify parallels and differences in the perception of algorithm-generated news between Turkish and Austrian recipients by comparing and contrasting them in terms of journalistic quality. It will be examined whether participants from a high-context culture assess quality criteria of automated news differently than those from a low-context culture, and vice versa. Secondly, the tendencies of cultural differences that play a major role in the perception of these news will be

deduced.



**Figure 1:** Research design

To this end, this study briefly describes its theoretical background, i.e., on the one hand the cultural context approach, and on the other hand the understanding of journalistic quality from the recipients' perspective. The method used for this study and the results are posed next. In a final step, the discussion and implication of the findings, as well as the limitations of the study are summarized in conclusion.

### 3. Theoretical framework

In order to examine the contrasts in different cultures' modes of reception with regard to the perception of algorithm-generated news and the assessment of journalistic quality criteria from the recipients' viewpoint, the theoretical basis of this study is presented hereinafter.

#### 3.1 High-context and low-context culture with reference to the interpretation of texts

The classification of cultures into high-context and low-context was proposed by anthropologist and cultural scientist Edward T. Hall (1976), who differentiated them in terms of the degree of complexity and directness of communication styles they contained. According to Hall (2000: 36) when it comes to understanding the message communicated, it is important to consider meaning and context together with the words, as the "meaning and context are inextricably bound up with each other". Hall's (1976) cultural context approach provides the basis for the present study's analysis, as it implies a set of categories whereby cultures can

be designated with regard to the interpretation of a message, for example, the words used in a news article.

In a high-context culture, significant parts of a message are determined by the coding implied in an indirect way through the context (Hall, 1976). Hall (1976) uses the term ‘contexting’ to describe the process of deriving missing information from the context and existing basic knowledge. In the implicit communication of information, paraphrases in the form of metaphors or other stylistic devices are used, since it is assumed that a large part of the information being communicated is already available to the interacting persons or recipients. Consequently, the actual message contains only limited information (Hall, 1976). Therefore, high-context cultures tend to exclude information on the basis that those do not have to be explicitly addressed in order for the recipient to understand the message as intended, since the excluded information is already known to them and does not need to be codified in speech or writing (Hall, 1976). Recipients from a high-context culture would therefore be expected to imply a message and interpret a text against the background of their existing knowledge. Similarly, information thought to be already known to recipients will also be excluded in writing.

Whereas in a low-context culture “the mass of information is vested in the explicit code,” in other words, the content of a message is explicitly conveyed in the message itself in a highly objective manner containing the maximum amount of information (Hall, 1976: 79). Significant background knowledge is not required to understand and correctly interpret the content. Thus, the reception of information is essentially carried out by the message itself, which also provides the point of orientation for understanding the message. For this reason, when writing in a low-context setting, for example, statements should be explicit and as direct as possible to ensure that recipients can grasp the message exactly as intended (Gudykunst and Nishida, 1986). Otherwise, recipients may interpret the text as ambiguous and confusing.

While the concept of high-context and low-context cultures can explain how recipients perceive news stories with regard to their own culture, it is also important to explore how they assess journalistic quality in relation to the culture to which they belong.

### **3.2 Journalistic quality from the recipients’ perspective**

In terms of media offerings or content, journalistic quality describes the value of news media or news in general, but no widely accepted criteria to determine the quality of journalism exists (Bucher and Altmeyden, 2003). Nevertheless, news

should provide comprehensive information and commentary, as well as unbiased reporting and supplying recipients with important background information and facts (Weischenberg, 2001). The quality of a media offering is determined, among other things, by the relationship between the offering and the needs of the recipients (Hasebrink, 2000). Thus, recipients' quality assessments are always based on their expectations and whether they find the news presented to them gratifying. The manner in which recipients communicate and interpret texts based on their cultural background can also have a decisive influence on the quality assessments of news stories. Therefore, recipients play an important role in the discourse regarding the quality of journalism, since they can contribute significantly to the maintenance and even the improvement of standards by assessing the quality of news (Jungnickel, 2011). In the context of the current study, an investigation of quality assessments by recipients would also make it possible to uncover deficits in automated news, which could in turn be examined by software producers in order to increase the quality of algorithmic journalism, since the quality could significantly affect whether recipients perceive such news stories favourably or unfavourably.

The assessment of news coverage from the recipients' perspective is usually based on quality criteria such as relevance, readability, independence, objectivity, credibility, thematic coherence, and entertainment value (Pöttker, 2000; Neuberger, 2012). For algorithmic journalism, previous reception studies have primarily identified readability, objectivity, and credibility as relevant journalistic quality standards (Clerwall, 2014; Graefe et al., 2016; Jung et al., 2017; Haim and Graefe, 2018; Wölker and Powell, 2018). As this research field is still in its initial stage, these criteria are taken as a basis for this study. The readability of automated news refer in principle to the journalistic form of presentation and the language used (Pöttker, 2000). The criterion of objectivity signifies, on the one hand, that explicit valuation should be avoided as far as possible, and on the other hand, that both negative and positive aspects of a subject should be taken into account to ensure the accurate reproduction of contents to achieve balance and a high level of credibility (Arnold, 2016). Credibility means that the news content, source, or medium are perceived as believable (Bentele, 1998). In addition to these journalistic quality standards, news should also provide features that encourage recipients to receive news with pleasure, since the breakthrough of this new technology is also dependent on recipient use (Arnold, 2016). Thus, for example, journalistic content should also be adapted to differing recipient requirements, particularly in terms of cultural context.

#### 4. Methodology of the study

A comparative qualitative content analysis was conducted using Hall's (1976) cultural context approach as the main parameter. This was based on interviews with six interviewees from Turkey, to represent a high-context culture, and six from Austria, to represent a low-context culture. In addition to being asked questions, the interviewees were also presented with news articles consisting solely of algorithm-generated texts distributed by the Associated Press — the first news agency to employ such technology. Every interviewee was presented with one news story, one sports report, and one financial article, each with a length between 67 and 394 words.

The empirical analysis was conducted using a category system, from the process of data collection to evaluation. The category system includes information regarding the social demographic of the interviewees, general use of news media, the essential criteria of journalistic quality, and the use and assessment of algorithm-generated news. As this is a qualitative study, a semi-structured protocol was utilized in interviews, as otherwise, in the case of a highly structured survey with formulated questions, only the quality criteria defined by the researcher could be analysed and undefined criteria would remain hidden. In addition, this makes it easier to understand the cohesion, as well as the differences and similarities, between high-context and low-context cultures.

The interviews were carried out in person between September 2019 and February 2020 with twelve participants — seven women and five men between the ages of 25 and 44 — who were selected from among 36 university-educated individuals (18 female, 18 male) who preferred online news media to printed newspapers. For the sample selection, the participants were questioned about their frequency of use of online news (Table 1). Assuming that many readers either do not know or do not pay attention to whether the news were written by a journalist or generated automatically, as well as that those recipients who frequently read online news would also come across automated texts more often, a daily use of online news was determined as a minimum criterion, in order to guarantee that the participants have a certain relatedness to the object of the investigation.



**Table 1:** Sample selection (n = 36)

Age	Nation	Frequency of use	Number of respondents
25 – 34	Turkey	occasionally	4 female, 5 male
25 – 34	Turkey	daily	2 female, 1 male
25 – 34	Austria	occasionally	3 female, 4 male
25 – 34	Austria	daily	3 female, 2 male
35 – 44	Turkey	occasionally	2 female, 1 male
35 – 44	Turkey	daily	1 female, 2 male
35 – 44	Austria	occasionally	2 female, 3 male
35 – 44	Austria	daily	1 female, 0 male

Interview data was coded utilizing the MAXQDA qualitative data analysis program and relied on a category-based analysis according to Mayring's (2008) structuring approach. The interviews were conducted in Turkish and German, and lasted 35 minutes on average.

## 5. Results

This study examined the recipients' perception of algorithm-generated news, further explicated in terms of high-context and low-context cultures, with regard to quality in algorithmic journalism. The primary question that guided the interviews was as follows: How are algorithm-generated news perceived by recipients from high-context and low-context cultures in relation to journalistic quality criteria? The interview analysis is divided into two parts, consisting of the news' assessments and the deducible tendencies in the perception of algorithm-generated news.

### 5.1 Similarities and differences in the perception of algorithmic-generated news

To explore whether and how features that determine high- and low-context cultures influence the perception of algorithm-generated news, interviewees were requested to read the news articles they were presented with. After reading the news articles, they were asked to state the criteria which they thought significant and to assess the quality of the text in order to ascertain the similarities and differences in the reception of said news articles.

The criteria employed by participants to assess the journalistic quality of news differed on an individual basis. According to the results of this study, and as the word cloud (Figure 2) demonstrates, the three descriptors most frequently used in interviews of both context levels in the assessment of algorithm-generated news by recipients were: readability, credibility and objectivity.



Figure 2: Word cloud

Criteria such as actuality (4 out of 12), diversity (3 out of 12), thematic competence (3 out of 12) and relevance (3 out of 12) were also mentioned, but only by a few interviewees. Due to the low number of mentions, these criteria are not particularly meaningful, which is why they were not included in the further analysis. Also noteworthy is the fact that no differences based on gender or age in the perception of algorithm-generated news could be identified. This may be ascribed to the limited number of participants, as this study is a small-scale study by design.

As mentioned in the theoretical framework section, recipients from high-context and low-context cultures generally communicate and interpret messages differently. Based on the distinction between high-context and low-context cultures as categorized by Hall (1976), the analysis also revealed some differences between Turkish and Austrian recipients when referring to the readability and credibility of algorithm-generated news; while no differences were identifiable regarding the objectivity of these news, which can be outlined as follows:

**Table 2:** Perception of algorithm-generated news by high-context and low-context culture

Quality criteria	High-context culture	Low-context culture
<b>Readability</b>	- News articles are too factual and detailed.	- Endorsement of factual and clear reporting.
	- Text style is too verbose and bland.	- In favour of the verbose linguistic style.
	- News articles include redundant information.	- News articles are comprehensible.
	- Text is not pleasant to read and not entertaining.	- Text is pleasing and easily readable.
<b>Credibility</b>	- News articles are less transparent due to the limited amount of text.	- News reporting is very transparent.
	- Sports and financial reports are credible, accurate and less biased.	- All kind of news articles are perceived as credible.
<b>Objectivity</b>	- No differences between HC and LC cultures.	
	- Algorithm-generated news are perceived as objective.	
	- Sports and financial news are more objective than news stories	

**Readability:**

The readability evaluation of the news is based on participants' differing methods of communication and interpretation. In 5 out of 6 cases, recipients from the high-context culture considered the news article presented to them to be very factual and highly detailed. The text layout and the level of formality seemed to influence their assessment of news stories, since recipients from this context level perceived the text style to be verbose and emotionally lacking, and therefore not very well written. In 4 out of 6 cases, Turkish participants were also of the opinion that the texts contained partially redundant information, and thus were not pleasant to read and not entertaining. This may be related to the fact that high-context cultures usually prefer to exclude information regarded as common knowledge. Also, in 4 out of 6 cases, members of the high-context culture regarded shorter texts such as sports and financial reports to be overly descriptive and containing an excessive amount of numbers; they categorized this type of writing as less creative and full of data. While interviewees from the high-context culture described all articles presented to them as lacking in readability, in 5 out of 6 cases participants from the low-context culture regarded them to be comprehensible, pleasing, and easily readable. Furthermore, in 4 out of

6 cases, Austrian participants found the verbose linguistic style, and the factual and clear reporting to be satisfactory and highly well-written, as this informative and descriptive form of reporting also meets the journalistic criteria of credibility and objectivity. This finding also coincides with the characteristics of a low-context culture.

### **Credibility:**

Credibility seems to be the most important assessment criteria for algorithm-generated news for both Turkish and Austrian recipients. All of the interviewees (12 out of 12) stated that in particular, information regarding the source, the plausibility of the message, and the overall quality of the message are significant features in their perception of a news article's credibility. In this context, transparency of the news especially was mentioned in nearly every interview (9 out of 12). Transparency refers to the obviousness, completeness, and clarity of information a news item is required to contain (Arnold, 2016). The importance of this criterion was highlighted in particular (6 out of 6) by Austrian recipients as members of low-context culture, as they expect news to be transparent and to provide detailed information regarding the subject of the article. Most (4 out of 6) expressed that the algorithm-generated news story presented to them was transparent enough to know for whom it was written and what was behind the headings or subheadings. This coincides with the features of a low-context culture, which embraces clarity of information and news that get the point across. In contrast, Turkish recipients (5 out of 6) described the news story as being less transparent due to the article's length and the message conveyed by the very limited amount of text. According to them, this news article included a less transparent overview of the message it contained. This finding also correlates with the peculiarities of the high-context level, which expects longer texts with more background information. When it came to sports articles or financial reports, however, those were generally perceived by both context levels to be credible, accurate, and less biased.

### **Objectivity:**

As demonstrated by the results, all of the interviewees (12 out of 12) perceive algorithm-generated news to be objective. However, sports and financial content are perceived by Turkish and Austrian recipients as being more objective than news stories. Thus, the objectivity of sports and financial reports can be assumed to be equal. The reason behind all of the interviewees' perception of algorithmic journalism as objective can be ascribed to the fact that news texts are generated on the basis of data sets and not with human intervention, which seems to ensure greater impartiality.

## 5.2 Tendencies of recipients' perception

In general, recipients within the same context level perceived the quality of algorithm-generated news very similarly. Differences in the evaluation of the texts were only ascertained when comparing the two nations.

Not all journalistic quality criteria in the various text categories were equally important for the interviewees. For example, for Turkish participants who are accustomed to a high-context culture, readability and credibility were far more important for longer news items than for sports articles or financial reports. Members of the low-context culture considered the criteria of objectivity and credibility to be vital for all types of news. This could relate to the fact that information is received and conveyed directly and explicitly by individuals from low-context cultures, and therefore objective and credible reporting as much as possible is considered highly important.

A further tendency can be determined regarding the readability of texts. For Turkish recipients, readability played a particularly important role in terms of a text's entertainment value, while for Austrian recipients this was of secondary importance, as they prefer short and detailed messages. Turkish interviewees, for example, assessed the criterion of readability of algorithm-generated news more critically with regard to narrative features, as they required supplemental background information to understand the message in the news article, which can also be traced back to the general attitudes of this context level. In contrast, Austrian recipients perceived the readability of automated news positively and did not have any difficulties in comprehending the key message. Here, too, there is a connection between readability and the context levels of the aforementioned cultures.

Furthermore, the tendency to positively assess the credibility of algorithm-written text prevails in low-context cultures, whereas in high-context cultures, regardless of the text category, they are ascribed a somewhat low credibility. However, it should be mentioned that these trends are not all-encompassing, due to the small number of cases. Nevertheless, it can be noted that algorithm-generated news usually consist of factual information with the potential to reduce untrustworthiness.

Overall, results of this study demonstrate that it is albeit vital that algorithm-generated news provide texts effectively adapted to the context level of the culture or nation of which recipients are a member to ensure accurate perception.

## 6. Conclusion

The current small-scale study explored the perception of algorithm-generated news by Turkish and Austrian recipients within Hall's theoretical approach of

high-context and low-context cultures. This study provides key findings to explain how recipients from different cultures perceive algorithm-generated news in relation to journalistic quality. The results of the study show that Hall's cultural-context approach is particularly relevant, as it lays an important foundation to understand how news are perceived by recipients. In a way, the findings also support what was ascertained in other perception studies of algorithmic journalism. The present study indicates that Turkish and Austrian recipients refer to the criteria of readability, credibility and objectivity when describing the quality of algorithm-generated news. This result corroborates to a large extent the findings of previous studies regarding recipients which analyse the perception of automated texts with regard to readability and/or credibility as important quality criteria (Clerwall, 2014; Haim and Graefe, 2018; Wölker and Powell, 2018). Furthermore, the results show that the perception of news varies according to culture, which also has an effect on the assessment of news articles. It can therefore be concluded that the assessment of algorithm-generated news depends on the context level of the recipient.

To sum up, as the implementation of artificial intelligence technologies has already transformed and will continue to transform many parts of our lives, the way we use news media and interpret messages of algorithm-generated news will also change. Although automation processes are still in the initial phase of prevalence in journalism, it can be assumed that there will be an increase in algorithm-generated news production and that, for long-term quality assurance, algorithms should be programmed with respect to the contexts of different cultures, as cultural differences have an influence on the perception of messages. It should be noted, for example, that Turkish recipients as representatives of a high-context culture need little input information, while Austrian recipients of a low-context culture need a wealth of information and many details in order to understand the message conveyed. The level of information or the context of the respective culture should therefore be taken into account when programming algorithms for text generalization to ensure that recipients perceive the news as clear, credible and objective. Thus, the results of this study can be taken into consideration by software engineers, who can, aided by journalists, program algorithms for text generation that take heed of the context level of the designated recipients' culture.

Nevertheless, there are some limitations that imply the need for similar studies. First, the results are based on face-to-face interviews with twelve participants who were either from Turkey, as an example of a high-context culture, or from Austria, as an example of a low-context culture. To ensure high representativity

of the results, supplementary research could be conducted with further participants from other low- or high-context culture countries, to explore the extent to which the identified differences and similarities prevail. Another limitation is the stimuli, as the results of this study refer only to a small number of selected algorithm-generated news from the Associated Press as one of the most important and powerful news associations worldwide. Forthcoming research could minimize this kind of limitation by analysing the perception of news articles generated by other news agencies and more articles from each category, in order to enhance the validity of the present results. Despite these limitations of the study, the results can be conducive to further research of cultural differences in the perception of algorithm-generated news.

### References

- Arnold, K. (2016). Qualität des Journalismus. [Quality of journalism.] In: Löffelholz, M. and Rothenberger, L. (Eds.). *Handbuch Journalismustheorien*. [Handbook theories of journalism.] Wiesbaden: Springer Fachmedien, 551–563.
- Bentele, G. (1998). Vertrauen/Glaubwürdigkeit. [Trust/credibility.] In: Jarren, O., Sarcinelli, U. and Saxer, U. (Eds.). *Politische Kommunikation in der demokratischen Gesellschaft*. Ein Handbuch. [Political communication in the democratic society. A handbook.] Opladen: Westdeutscher Verlag, 305–311.
- Berry, D. M. (2011). The computational turn: Thinking about the digital humanities. In: *Culture Machine* 12, 1–22.
- Bucher, H. J. and Altmepfen, K. D. (Eds.) (2003). *Qualität im Journalismus*. Grundlagen – Dimensionen – Praxismodelle. [Quality in journalism. Basics – dimensions – practical models.] Wiesbaden: Westdeutscher Verlag.
- Chua, E. G. and Gudykunst, W. B. (1987). Conflict resolution in low- and high-context cultures. In: *Communication Research Reports* 4, 32–37.
- Clerwall, C. (2014). Enter the Robot Journalist. In: *Journalism Practice* 8(5), 519–531. DOI: 10.1080/17512786.2014.883116.
- Graefe, A. (2016). Guide to automated journalism. Retrieved from: <https://pdfs.semanticscholar.org/c56d/609b3cb2ff85a3e657d2614a6de45ad2d583.pdf> (10. 04. 2020).
- Graefe, A., Haim, M., Haarmann, B., Brosius, H. B. (2016). Readers' perception of computer-generated news: Credibility, expertise, and readability. In: *Journalism: Theory Practice and Criticism*, 1–16. DOI: 10.1177/1464884916641269.
- Gudykunst, W. B., Matsumoto, Y., Ting-Toomey, S., Nishida, T., Kim, K. and Heyman, S. (1996). The influence of cultural individualism-collectivism, self construals, and individual values on communication styles across cultures. In: *Human Communication Research* 22, 510–543.
- Gudykunst, W. B. and Nishida, T. (1986). Attributional confidence in low- and high-context cultures. In: *Human Communication Research* 12, 525–549.

- Haim, M. and Graefe, A. (2018). Automatisch interessant? Der Einfluss von Involvement auf die Wahrnehmung computergenerierter Texte. [Automatically interesting? Involvement's influence on the perception of computer-generated texts.] In: Rössler, P. and Rossmann, C. (Eds.). *Kumulierte Evidenzen. Replikationsstudien in der empirischen Kommunikationsforschung. [Cumulative evidence. Replication studies in empirical communication research.]* Wiesbaden: Springer Fachmedien, 189–206. DOI: 10.1007/978-3-658-18859-7\_9.
- Haim, M. and Graefe, A. (2017). Automated news. Better than expected? In: *Digital Journalism* 5(8), 1044–1059. DOI: 10.1080/21670811.2017.1345643.
- Hall, E. T. (2000). Context and meaning. In: Samovar, L. A. and Porter, R. E. (Eds.). *Intercultural communication: A reader.* Belmont, CA: Wadsworth Publishing Co, 34–43.
- Hall, E. T. (1976). *Beyond culture.* New York: Anchor books/Doubleday.
- Hasebrink, U. (2000). Journalistische Qualität aus der Perspektive des Publikums. [Journalistic quality from the perspective of the audience.] In: *Medienwissenschaft Schweiz* 1, 6–9.
- Hofstede, G. (1980). *Culture's consequences: International differences in work-related values.* Beverly Hills, CA: Sage.
- Jung, J., Song, H., Kim, Y., Im, H. and Oh, S. (2017) Intrusion of software robots into journalism. The public's and journalists' perceptions of news written by algorithms and human journalists. In: *Computers in Human Behavior* 71, 291–298. DOI: 10.1016/j.chb. 2017.02.022.
- Jungnickel, K. (2011). Nachrichtenqualität aus Nutzersicht. Ein Vergleich zwischen Leserurteilen und wissenschaftliche-normativen Qualitätsansprüchen. [Quality in news journalism from the point of view of the audience. A comparison of readers' evaluation and normative quality standards.] In: *M&K – Medien- und Kommunikationswissenschaft* 59(3), 360–378.
- Kluckhohn, F. R. and Strodtbeck, F. L. (1961). *Variations in value orientation.* Chicago, IL: Row, Peterson and Company.
- Kowner, R. and Wiseman, R. (2003). Culture and status-related behavior: Japanese and American Perceptions of interaction in asymmetric dyads. In: *Cross-Cultural Research* 37, 178–210.
- Maletzke, G. (1996). *Interkulturelle Kommunikation. Zur Interaktion zwischen Menschen verschiedener Kulturen. [Intercultural communication. On the interaction between individuals from different cultures.]* Opladen: Westdeutscher Verlag.
- Mayring, P. (2008). *Qualitative Inhaltsanalyse. Grundlagen und Techniken. [Qualitative content analysis. Principles and techniques.]* Weinheim and Basel: Beltz Verlag.
- Neuberger, C. (2012). Journalismus im Internet aus Nutzersicht. Ergebnisse einer Onlinebefragung. [Journalism in the Internet from the user's perspective. Results of an online survey.] In: *Media Perspektiven* 1, 40–45.
- Pöttker, H. (2000). Kompensation von Komplexität. Journalismustheorie als Begründung journalistischer Qualitätsmaßstäbe. [Compensation of complexity. Using journalism theory to establish journalistic quality standards.] In: Löffelholz, M. (Ed.). *Theorien des Journalismus. Ein diskursives Handbuch. [Theories of journalism. A discursive handbook.]* Wiesbaden: Westdeutscher Verlag, 375–390.



- Thurman, N., Dörr, K. and Kunert, J. (2017). When reporters get hands-on with robo-writing. In: *Digital Journalism* 5(10), 1240–1259. DOI: 10.4324/9781315167497.
- Van Dalen, A. (2012). The algorithms behind the headlines. How machine-written news redefines the core skills of human journalists. In: *Journalism Practice* 6(5–6), 648–658.
- Van der Kaa, H. A. J. and Kraemer, E. J. (2014). Journalist versus news consumer. The perceived credibility of machine written news. In: *Proceedings from the Computation+Journalism conference, New York*. Retrieved from: [https://pure.uvt.nl/ws/portalfiles/portal/4314960/cj2014\\_session4\\_paper2.pdf](https://pure.uvt.nl/ws/portalfiles/portal/4314960/cj2014_session4_paper2.pdf) (10. 04. 2020).
- Weischenberg, S. (2001). *Nachrichten-Journalismus*. [News journalism.] Opladen: Westdeutscher Verlag.
- Wölker, A. and Powell, T. E. (2018). Algorithms in the newsroom? News readers' perceived credibility and selection of automated journalism. In: *Journalism*, 1–18. DOI: 10.1177/1464884918757072.