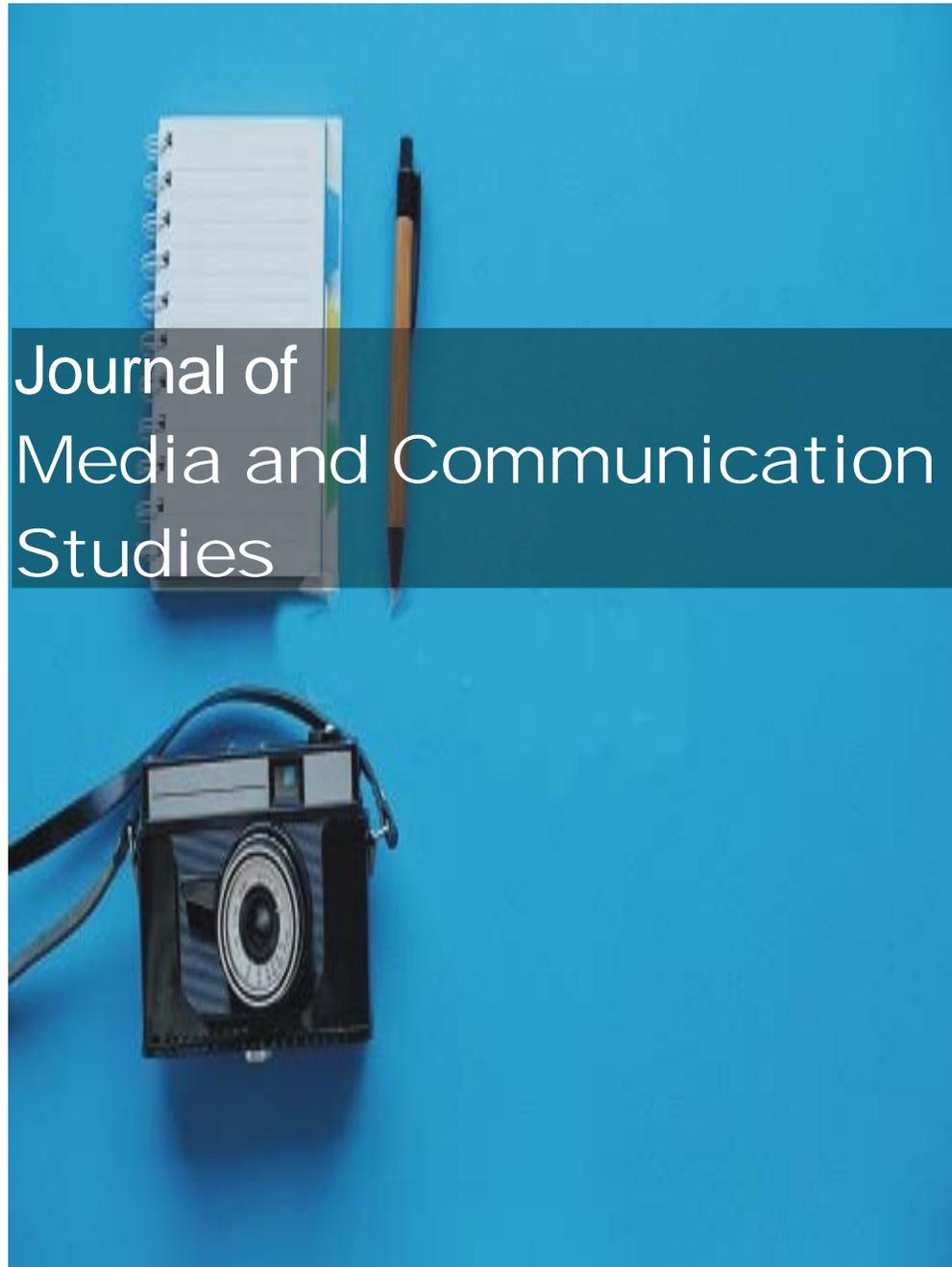


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Full Length Research Paper

A comparison of American and Chinese college students' media use: The amount and origins of international news and entertainment

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This study used a survey to explore American and Chinese college students' self-reported consumptions of international media. Specifically, a comparison was made between American and Chinese participants in terms of the time spent per week on news and entertainment, respectively, the estimates of international versus domestic media, and the countries of origin of the international media. The results suggested that American college students spent more time per week on entertainment but less time on news compared to their Chinese counterparts. Chinese college students reported a higher percentage of international news and entertainment than their American counterparts among the total media consumption. American participants reported more diverse countries of origin of international news and entertainment compared to their Chinese counterparts. Theoretical and practical implications were discussed in the context of college students' international media consumption and potential intercultural influences.

Key words: College students' media use, international news, international entertainment, country of origin.

INTRODUCTION

Amount and origins of international media consumption: A comparison of American and Chinese college students

The advancement in technology connected the world by providing communicative space and opportunities for those who otherwise would not have the chance to meet (Walther et. al., 2015). With more information traveling transnationally, media consumers are now able to consume both the content portraying other countries in their domestic media and the content produced by other

countries (that is, international media). Although the valence of information conveyed and following outcomes may be ambivalent, globalization does affect the operationalization of national and international media of various types including television, film, music, magazines, websites, social network sites, etc., which creates more chances of international and intercultural learning and understanding. Following the growth of international media, scholars have investigated various types of international media with different foci such as content of international news (Jones et al., 2013), operation of

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media outlets as business (Rutovic, 2016), media imperialism (Boyd-Barrett and Mirrlees, 2019), and traditional and new media platforms (Cunningham, 2016).

A rich body of literature has studied international media from both media production side and audience perception side. From media production perspective, majority of the studies were conducted around two major themes: a specific country and its national image in media or a significant social event that attracts international attention. For example, studies examined the image of the United States in Arab media (Galal et al., 2010), China's soft power enacted in international entertainment media (Flew, 2016) and the influences in African countries (Wasserman and Madrid-Morales, 2018), international media image of Russia (Repina et al., 2018), and the image of India and its rising in international media production (Thussu, 2013). Some other studies investigated how international and domestic media reported certain social events such as global food riots of 2007–2012 (Hossain, 2018), the 2014 World Cup in Brazil (Graeff et al., 2019), human-elephant conflict in India (Barua, 2010), and Irreecha Festival Tragedy in Ethiopia (Gabore and Xiujun, 2018).

From audience's perception, studies have explored audience's psychological responses, preferences, and international media effects on intercultural communication. The trajectory of research on international media changed from treating audience as passive recipients of messages to viewing them as active consumers who have agency (McMillin, 2007). For example, Rohn (2011) proposed different models about audience's psychology to understand what drives audience's enjoyment of foreign content. Compared to domestic media, international media also have their unique influences on intercultural communication. For example, Ramasubramanian and Kornfield (2012) studied U.S. audience's identification and parasocial relationship with Japanese anime heroines and discussed the positive intercultural entertainment effects.

While audience's psychological reactions and the following media effects have been studied, their actual consuming choices are rarely studied. What audience is interested in is often being treated equivalent to what is produced by media. However, media professionals' choices and audiences' interests are not necessarily the same. Lee et al. (2017) compared content analysis results from foreign news on television and survey results from audiences in twelve nations and calculated the content-interest correspondence. The results indicated that the countries and topics that are reported in foreign news on television do not always match what audience would like to watch. Similarly, Boczkowski et al. (2011) found a gap between thematic interest of journalists and audiences of online news sites in Western Europe and Latin America.

In addition to understanding how audience are affected by international media, it is also important to explore what

audiences are actually consuming as an initial step. The current study contributed to the literature by exploring consumers' international media use in the U.S. and China. Specifically, this short report compared college students' international media consumption in the U.S. and China to better understand whether American and Chinese college students consume international media products, how much international news and entertainment they consume, and which countries the international news and entertainment come from, respectively, or which countries are covered in the international news and entertainments, respectively.

International media in the US and China

The United States and China are the two largest markets for media and entertainment products. According to the *Media and Entertainment Top Market Report* from International Trade Administration (ITA, 2017) in U.S. Department of Commerce, the U.S. is the leading country that exports the most media and entertainment goods including film, music, publishing, video game, etc. Professionals from all around the world joined the media industry in the U.S. (for instance, Hollywood) and made the domestic industry quite globalized (Olson, 1999). However, professionals' diverse racial or ethnic demographics were not well reflected in the media products. Foreign cultures are rarely mentioned in American produced media products (Kumar, 2011) and few media products are imported to the United States from other countries (Martin and Nakayama, 2010).

China is the second largest media and entertainment market in the world (ITA, 2017). Media industry in China is gradually changing from a major importing market to an exporting market. Flew (2016) analysed the international media expansion of China and stated that with "an awareness that its relative lack of presence in global media content flows contributes to a negative perception of China internationally" (p. 290), China started to heavily invest on international expansion of both news and entertainment to develop its national/cultural soft power. According to an industrial report (Intelligence Research Group, 2019), the number of TV dramas imported to China drastically decreased since 2015. On the other hand, the exports of media products including film, social network applications, and web fictions have increased (Chinabaogao, 2017).

As the two largest markets that import and export media and entertainment products, international media production and consumption in the U.S. and China have massive influence on the global media, and further affect the audience and their mediated intercultural communication experiences. This study focused on college students in the U.S. and China and explored how much international content they consume and what countries produced the international contents.

International media content was further divided into news and entertainment because previous research indicated that international news and entertainment may show different patterns in terms of the content and the valence. For example, Cui (2015) conducted a content analysis of Chinese newspapers in the year of 2009 and 2014. The results showed that the stance held by Chinese newspapers towards the U.S. was significantly more unfavorable (for instance, feature negative U.S. image, but promote Chinese positive image) than favorable. In studying how product defects and recalls were covered in newspapers, Vilceanu and Murphy (2018) found that both The Washington Post and China Daily tended to generalize the problems to the entire culture/country. On the other hand, entertainment narratives are one of the most common and easy formats of media exported to other countries (Olson, 1999). Different from international news, entertainment was less explored given the complexity of the content, genre, platforms, origins, etc. Hence, this report separated international news and international entertainment and explored American and Chinese students' consumption of each. The following research questions were asked:

RQ1: How do American and Chinese participants compare on total amount of news and entertainment they consume?

RQ2: How do American and Chinese participants compare on the percentage of international news and entertainment they consume among their total media consumption?

RQ3: What are the countries that either produce the international news and entertainment or are covered in the international news and entertainment that American and Chinese colleges students consume?

METHOD

Participants

To answer the research questions, this study recruited college students from both the U.S. and China. For the U.S. sample, 227 participants were recruited from undergraduate courses at a large Midwestern university. The average age was 19.78 ($SD = 1.79$) and 67.4% were female. Among all the participants, 80.6% reported themselves as born and raised in urban and suburban areas and 19.4% in rural areas. For the Chinese sample, 143 participants were recruited from undergraduate students at a large university in Beijing, China. The average age was 21.15 ($SD = 3.64$) and 63.41% were female. Among the participants, 77.4% reported themselves as born and raised in urban and suburban areas and 22.6% in rural areas. Due to the different academic norms in the U.S. and China, American participants received extra credits to one of their communication classes while Chinese participants volunteered.

Procedures and measures

An online survey was conducted to explore participants' total media

use, international media use, and the countries of origin of international media. The survey was created in English. It was then translated to Chinese and back translated to English by researchers who are fluent in both languages. Both English and Chinese surveys were distributed online in Qualtrics with the assistance of instructors in two universities. In the survey, participants first answered their demographic information including gender, age, nationality, ethnicity, and the areas and regions they grew up or spent the most time. Then, they were asked to recall their consumption of news and entertainment, respectively. For news consumption, the questions include "About how many hours a week do you watch, read or listen to news? Consider television, newspapers, online news stories or other news sources." "Of the news content you consume, about what percentage do you think is foreign -- either created in a foreign country or specifically focusing on another culture?" and lastly, "Which countries are often reported in the foreign news you consume or what countries do the foreign news contents you consume primarily come from? List as many countries as is relevant for you. If you do not or barely consume foreign news, just write NA." Participants then answered their entertainment consumption in similar fashion. Questions include "About how many hours a week do you watch, read or listen to the media for entertainment? Consider television, movies, books, online content, or other entertainment media." "Of the entertainment content you consume, about what percentage you think is foreign - either created in a foreign country or specifically focusing on another culture?" and "Which countries do the foreign entertainment content you consume primarily come from? List as many countries as is relevant for you. If you do not or barely consume foreign entertainment, just write NA."

RESULTS

Amount of media use

To answer RQ1 and RQ2, independent sample t-tests were conducted to compare media use of American participants and Chinese participants. The results indicated that American participants reported consuming 6.92 hours ($SD = 9.86$) of news per week, which was significantly less than the 10.52 hours ($SD = 11.96$) per week reported by Chinese participants ($t(223) = -2.86$, $p = .005$). In contrast, American participants reported consuming 27.76 hours ($SD = 21.50$) of entertainment per week, which was significantly greater than the 21.35 hours per week ($SD = 14.72$) reported by Chinese participants ($t(337) = 3.28$, $p = 0.001$). Therefore, in response to RQ1, American college students consume more entertainment content than their Chinese counterparts while Chinese college students consume more news than their American counterparts (Table 1). In the survey, U.S. participants reported that on average 19.44% ($SD = 19.26$) of the news they consume is either produced by another country or covering another country, which is significantly lower than the 36.52% ($SD = 19.45$) of international news reported by Chinese participants ($t(341) = -7.94$, $p < .01$). U.S. participants reported that on average 15.66% ($SD = 15.99$) of the entertainment they consume is either produced in another country or portraying another country, which is significantly lower than the 49.70% ($SD = 23.33$) of international entertainment reported by Chinese participants ($t(206) = -$

Table 1. A comparison between U.S. and Chinese participants' media consumption.

Variable	American Participants		Chinese Participants		t	df	p
	M	SD	M	SD			
Time spent per week on news	6.92	9.86	10.52	11.96	-2.86	223	0.01
Time spent per week on entertainment	27.76	21.50	21.35	14.72	3.28	337	0.00
Percentage of international news	19.44%	19.26	36.52%	19.45	-7.94	341	0.00
Percentage of international entertainment	15.66%	15.99	49.70%	23.33	-14.79	206	0.00

14.79, $p < 0.01$). To answer RQ2, Chinese college students consume higher percentages of international news and entertainment among the total media consumption compared to their American counterparts (Table 1).

Countries of origin of international news and entertainment

To answer RQ3 asking the countries comprise the majority of international content consumed by U.S. and Chinese college students, a frequency of countries of origin was coded. Regarding news, American participants listed 34 countries/cultures. The answers that were mentioned most frequently are the U.K. (36 times, 16.5%), Middle East (31 times, 14.2%), China (25 times, 11.5%), and European countries (20 times, 9.2%). Chinese participants listed 18 countries/cultures. The most frequently mentioned answers were the U.S. (108 times, 49.1%), Japan (35 times, 15.9%), Russia (15 times, 6.8%), South Korea (13 times, 5.9%), and the U.K. (13 times, 5.9%) (Table 2). Regarding entertainment, American participants listed 25 countries/cultures. The answers that were mentioned most frequently were the U.K. (46 times, 22.1%), China (30 times, 14.4%), Japan (21 times, 10.1%), and European countries (21 times, 10.1%). Chinese participants listed 9 countries/cultures. The most frequently mentioned answers were the U.S. (98 times, 44.7%), South Korea (43 times, 19.6%), the U.K. (35 times, 16.0%), and Japan (31 times, 14.2%) (Table 2). In general, American participants reported more diverse countries of origin of international news and entertainment than Chinese participants.

DISCUSSION

The findings suggested that American college students spend more time on entertainment but less time on news compared to Chinese college students. Among the total amount of news and entertainment consumed, Chinese college students reported a higher percentage of international content than their American counterparts. Among the international news and entertainment consumed, American college student reported more

diverse countries of origin. The findings have theoretical and practical implications on international media and their effects on intergroup relations.

Theoretical implications

This study contributed to media studies and intercultural communication literature by illustrating American and Chinese audiences' international media consumption. Specifically, the findings indicated that American and Chinese college students have different preferences on international news and entertainment on both the amount and the countries of origin. Different patterns on international media consumption may affect audiences' perceptions of and attitudes toward the countries or cultures portrayed in media. What type of international media the audiences consume (news and entertainment), how much international media they consume, and what countries comprises the international media affect audiences' intercultural communication experiences and their willingness and ability to communicate with individuals from various cultural backgrounds.

The findings about countries reported in international news in this study overlap with the findings in previous studies. Lee et al. (2017) found that top three countries listed by American audience in international news on television were Afghanistan, the United Kingdom, and Iraq. Participants in this study most frequently reported the United Kingdom, Middle Eastern countries, and China. In the same study conducted by Lee et al. (2017), top three countries that Chinese audience reported to have watched in international news on television are the United States, Japan, and the United Kingdom. Top three countries reported in this study were the United States, Japan, and Russia. The United Kingdom was listed as the 6th in terms of the frequency.

As for international entertainment, Limov (2020) conducted a survey and found that American audience watch foreign entertainment content more frequently now after starting to the platform of Netflix. More studies could be conducted in the future to examine the increase of foreign content in American audience's international entertainment consumption and also to explore and compare Chinese audience's international entertainment consumption and the origins.

Table 2. Countries of origin of international news and entertainment reported by American and Chinese participants.

American Participants				Chinese Participants			
News	Frequency	Entertainment	Frequency	News	Frequency	Entertainment	Frequency
UK	36	UK	46	US	108	US	98
Middle East	31	China	30	Japan	35	South Korea	43
China	25	European countries	21	Russia	15	UK	35
European countries	20	Japan	21	South Korea	13	Japan	31
Mexico	16	France	13	UK	13	European countries	4
Iraq	15	Mexico	12	European countries	6	France	3
Russia	7	Spain	11	North Korea	6	Germany	2
Canada	6	Germany	9	Africa	4	Russia	2
Iran	6	Australia	7	France	4	Italy	1
Japan	6	Canada	7	Middle East	4		
Africa	5	Italy	5	Germany	2		
Asian countries	5	Brazil	3	India	2		
France	4	India	3	Pakistan	2		
Spain	4	South Korea	3	Afghanistan	1		
Israel	4	Russia	3	Israel	1		
Afghanistan	3	Africa	2	Malaysia	1		
Latin America	3	Latin America	2	Saudi Arabia	1		
Australia	2	Netherlands	2	Syria	1		
South Korea	2	Thailand	2				
Pakistan	2	Columbia	1				
Syria	2	Egypt	1				
Yemen	2	Iran	1				
Belgium	1	Iraq	1				
Brazil	1	Laos	1				
Germany	1	Singapore	1				
Greece	1						
Italy	1						
Laos	1						
Malaysia	1						
Netherlands	1						
Singapore	1						
Thailand	1						
Turkey	1						

The frequency and valence of the media content covering a foreign country may affect audiences' perceptions and attitudes toward that particular country. For example, as argued above, international news tends to report foreign countries in a more unfavourable way, which may constitute a negative mediated contact and lead to negative intergroup relations. On the other hand, consuming media content from other countries and cultures may cultivate audiences' intercultural communication awareness and enhance their intercultural communication competence. More studies could be conducted in the future from intercultural communication perspective and media effects perspective to further examine the media effects of international news and entertainment consumption. This

study could also be replicated in different countries and regions to explore international media consumptions.

The findings also implied a multi-layered perspective to understand media diversity and the corresponding media effects. The findings provided a baseline reference for future studies to explore international media consumption of American and Chinese audiences regarding the type of media they consume as well as diversity of media they consume (the ratio of domestic and international media and the countries of origin of international media/countries covered in international media).

Practical contributions

This study depicted international media use of the

audiences from the two largest media and entertainment market, the U.S. and China. The essential step of producing impactful media content is to analyse the domestic and global audiences. An investigation from audiences' perspectives is needed to increase the audience engagement. The findings from this short report are applicable to the practices of the international media industry on both their content production processes and ethical and societal consideration.

Limitation and future studies

Like any other studies that adopt self-reported data, participants' estimates are always subjective and may not reflect the reality. Future research could use both objective and subjective measures to show audiences' interests in international media. The relatively small sample sizes also limited the generalization of the findings. More studies could be conducted with larger number of participants with a more balanced sample. This study showed preliminary data about American and Chinese college students' international media use. More research could be conducted based on this study to further explore the content of international media produced and consumed, the specific genre of media products, and the effects of international media on intergroup relations.

Conclusion

This study investigated American and Chinese college students' international media consumption by reporting the amount of international news and entertainment they consume and showing the diverse countries of origin/countries covered in international news and entertainment, respectively. Findings of this study shed light on the body of literature on media studies and intercultural communication by bringing in audiences' perspectives. The findings also have meaningful practical contributions to the international media industry.

CONFLICT OF INTERESTS

The author has not declared any conflict of interests.

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Full Length Research Paper

Patronage of farm radio as an agricultural knowledge source for farmers: Experiences from Ghana

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Numerous studies have been conducted on farm radio programmes but there is limited information on farmers' level of patronage, utilisation and satisfaction with the information obtained. This study aimed to fill this gap. The research was carried out in the Bosome Freho District of the Ashanti Region of Ghana with 400 farmers selected using the multi-stage sampling technique. Data were analysed using means, standard deviations, and the chi-square test of independence. Results show that the farmers highly patronized the farm radio programmes. Although farmers were satisfied with the farm radio programmes, their utilization of knowledge from the programmes was low. Patronage of farm radio programmes is associated with radio set ownership, educational level and age of farmer. The study recommends that farmers should be encouraged to own radio sets and continue to rely on farm radio programmes for agricultural information. The reasons behind the low utilisation of information from farm radio programmes and why patronage and satisfaction are high need to be researched further.

Key words: Agricultural knowledge source, farm radio, Ghana, listenership, patronage, satisfaction, utilisation.

INTRODUCTION

Agricultural extension is a vital organ in the entire food security spectrum. It is a vital conduit for the transmission of information from researchers to farmers, scientists, and new technologies to farmers (Cloete et al., 2019). Agricultural extension aims at empowering and equipping farmers with the knowledge and skills they need to make wise decisions, solve problems on their own, and manage their farms (Vanclay and Leach, 2011). Individual approaches such as farm and home visits, telephone conversations, text messaging, and other channels are available to the extension agent. Field visits, result demonstrations, technique demonstrations and other group methods, as well as mass means

including print media (newspapers, magazines, newsletters, pamphlets, and posters) and electronic media (radio, television, and film schedules and filmstrips) have been widely employed to provide farmers with information (Olowu and Oyedokun, 2000).

Various routes are used to disseminate agricultural knowledge to farmers. The most traditional, but still widely employed among farmers in developing nations is face-to-face contact (Msoffe and Ngulube, 2016). Communicators can use a variety of modes (facial expressions, gestures, intonation, words, and body language) to convey a single message using this method of communication. Because the communicating parties

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are in the same physical location, it also improves immediate feedback. The channel, on the other hand, is notorious for altering messages as they are transmitted from one person to another (Velentzas and Broni 2014). According to Okwu et al. (2007), for active communication, information should be transmitted with minimal or no distortions from the source to the receiver.

According to Okwu et al. (2007), communication channels are essentially divided into two categories: non-interpersonal (radio, television, phone calls, posters, newspapers, meetings, film shows, internet, social media, and so on) and interpersonal (extension agent, contact/lead farmers, opinion leaders, friends and family, field demonstrations, and so on). The cost, availability/accessibility, and suitability of a communication channel, as well as the nature of the message and the farmer's expectation or desire, all, go into the decision.

Mass media methods are useful to farmers as sources of agricultural knowledge as well as techniques of informing them of new developments and emergencies. Depending on the aim and the number of farmers to be reached, the only way to get information to the target audience at the right moment is to use mass media (Nwachukwu and Onuekwusi, 2005). To a large extent, mass media serves as a veritable instrument for information dissemination in agriculture. Planners in developing countries recognize that effective use of mass media can speed the growth of agriculture (Purushothaman et al., 2003).

Radio is the most effective technique of disseminating agricultural information to rural farmers among the various forms of mass media. Radio can also help people overcome illiteracy and require less mental effort (Kuponiyi, 2000). It is regarded as a reliable, trustworthy and prominent source of information and mode of communication (Palvi et al., 2018). In terms of credibility, farmers must believe that the information is reliable, important, and weighty when it comes to adopting information and agricultural technology. Farmers' interest in implementing new strategies to increase their production activities is piqued when they have access to reliable information. A credible source of information stimulates farmers' interest in adopting innovative measures that aim at increasing their production activities (Kakade, 2013). Extension personnel play a critical role in bridging the gap between farmers and research institutions. As a result, agriculture necessitates a clear link between the availability of information and agricultural development. To reach their production goals, farmers need access to high-quality information, which they can only get if they are well-informed (Babu et al., 2011).

Rural radio and community radio are two terms that have become interchangeable to designate FM stations that broadcast to a local and largely rural audience (Chapman et al., 2003). The use of radio for rural

development has piqued the interest of practitioners and academics in recent years, who agree that this medium has enormous potential for improving the food security of smallholder farmers (Gilberds and Myers, 2012; Nakabugu, 2001). The rise of rural radio stations in recent decades reflects both advancements in information technology and a movement in the development paradigm toward a more participatory approach to information and knowledge sharing (Chapman et al., 2003).

Numerous studies have been undertaken to demonstrate radio's enormous potential for knowledge transmission and listener well-being. For instance, Chapman et al. (2003) investigated the use of rural radio in agricultural extension for soil and water conservation in Northern Ghana and discovered that there is an unusual mix of approaches in the use of rural radio for agricultural extension. Mubofu and Elia (2017), Spurk and Dingerkus (2017) and Sanga et al. (2013) investigated the level of use of radio and television as sources of agricultural knowledge among farmers and discovered that the use of radio and television as sources of agricultural knowledge was limited due to the low number of agricultural radio and television programmes broadcast each week. Zakariah (2008) investigated the possibilities of local radio for agricultural communication in Ghana and discovered that the rural farmer is more of a receiver or listener than a collaborator in radio communication.

However, there is limited information on farmers' patronage of farm radio programmes, their utilisation and satisfaction with the information obtained. Hence, this study is structured to assess the patronage of farm radio programmes as an agricultural knowledge source by farmers in the Bosome Freho District. The specific objectives are to ascertain farmers' level of patronage of farm radio programmes, the level of utilisation of knowledge gained through patronized farm radio programmes, the extent of farmers' satisfaction with the farm radio programmes and the factors that are associated with farmers' patronage of farm radio programmes.

MATERIALS AND METHODS

The research was carried in the Bosome Freho District. The District is in the South- Eastern part of Ashanti Region. In this study, the target population was drawn from the farmers in the Bosome Freho District. The District has 51,338 farmers according to the 2010 Population and Housing Census Report. The sample size of this research was calculated using a formula proposed by Yamane (1973). The sample size calculated was 397. However, it was adjusted to 400 farmers.

This study used the multi-stage sampling technique. In the first stage, purposive sampling was used in selecting the target district. This is because the district has 85% of its population as farmers and again eight radio stations are transmitting around the district. In the second stage, the simple random sampling technique was used to select ten communities out of the eighty-five communities. In the third stage, the proportional sampling technique was used to select farmers from the selected (10) communities: Adeito-40, Anyanso-

Table 1. Frequency of listenership of Farm Radio Programme.

Radio station	Never N (%)	Occasionally N (%)	Always N (%)	Mean	Std. Dev.
Kings Radio- Akuafo Kyefa	36 (9)	180 (45)	184 (46)	2.37	0.64
Virgin FM- Akuafo Mo	52 (13)	199 (49.75)	149 (37.25)	2.24	0.67
Asempa Radio- Akuafo Adanfo	77 (19.25)	192 (48)	131 (32.75)	2.14	0.71
Salt FM- Okuani Pa	77 (19.25)	182 (45.50)	141 (35.25)	2.16	0.72
Adanse FM- Akuafo Bedwa	73 (18.25)	197 (49.25)	130 (32.50)	2.14	0.69
Ahwenepa FM- Akuafo Adc a WC Bedi de3n	60 (15)	186 (46.50)	154 (38.50)	2.24	0.69
Dess Radio- Akuafo Mer3	117 (29.25)	181 (45.25)	102 (25.50)	1.96	0.74

Index: 2.18. Source: Field Data, 2021.

43, Anumso-42, Nsuaem-40, Abosamso-34, Duase-42, Korhyikrom-44, Tebeso II-32, Freso-39 and Dajanso-41. Data from the questionnaires were coded and entered into a computer. The computer programmes STATA and SPSS were used to analyze the data.

To ascertain farmers' level of patronage of farm radio programmes, farmers were asked to rate the content, the presenter, delivery time and language used for presentation using a likert scale. A three-point Likert scale was used to calculate the mean and standard deviation based on the number of minutes each respondent spent in listening to farm radio programme (Low = 0-140 min, moderate = 141 - 280 min and high = 281 – 420 min). This style of classification was adopted from the work of Zachariah (2008) who also used time spent by listeners as proxy to measure their interest in agricultural radio programmes. To assess the level of utilisation or adoption of knowledge gained through the farm radio programmes, a three-point Likert scale ranging from 1= Never, 2= Sometimes, 3= Always, was used to calculate the mean and standard deviation. To ascertain farmers' extent of satisfaction with the patronized farm radio programmes, the satisfaction index (Five-point Likert scale ranging from 1= Fully Dissatisfied, 2= Dissatisfied, 3= Indifferent, 4= Satisfied, 5= Fully Satisfied) was used to analyze farmers' extent of satisfaction of the farm radio programmes. To determine the factors that are associated with farmers' patronage of farm radio programmes, the chi-square test of independence was used. The Chi-square test of independence measured the relationship between the level of patronage (low, moderate and high) and the socioeconomic factors; age, marital status, educational level, type of farm, farm size, radio ownership etc.

RESULTS AND DISCUSSION

Farmers' Patronage to the farm radio programmes

Table 1 presents the frequency of listenership to farm radio programmes of farmers in the study area. Farmers' frequency of listenership of the selected farm radio programmes was assessed on a scale of 1 (Never) to 3 (Always). The various farm radio programmes were "Akuafo Kyefa", "Akuafo Mo", "Akuafo Adamfo", "Okuani Pa", "Akuafo Bedwa", "Akuafo Adc a wc Bedi de3n" and "Akuafo Mer3". These farm radio programmes are hosted by different radio stations in the study area. The highest mean score for the farm radio programmes was 2.37 (Kings Radio-Akuafo Kyefa) and the lowest mean score

for the programme was 1.96 (Dess Radio- Akuafo Mer3) respectively. This suggests that the most listened programme/station in the District was "Akuafo Kyefa" organised by Kings Radio while the least listened was "Akuafo Mer3" by Dess Radio. The overall means (frequency of listenership) was 2.18. This also shows that the frequency of listenership was occasional. Generally, farmers occasionally listened to all the farm radio programmes hosted by the radio stations. Similar results were found by Adamides and Stylianou (2018). In that study, it was found that out of those who listened to the farm programme, the majority responded that they listen to it occasionally. However, Okwu et al. (2007) and Zachariah (2008) found that farm radio was a very popular source of agricultural information to farmers and farmers' listenership to local radio was found to be high. Whites (2005) describes radio as the "Internet of Africa". Perhaps this assertion is even more valid in the case of rural farmers in Africa, who see the radio as a true companion. As a supplement to the work of agricultural extension officers, it has become an essential means to reach farmers especially in their off-farm leisure times. Okwu et al. (2007) underscored the importance of radio in agricultural development. They stated the need for farmers to be informed and educated about agricultural technology to enable them increase productivity. It can also be used as information multipliers capable of overcoming the pressures of time, population, geographical constraints, and shortage of trained extension personnel.

Farmers were asked about the number of minutes they listened to farm radio programmes within a week. This was used to calculate the level of patronage of the farm radio programme. Results show that out of those who listened to the farm radio programme, majority of the farmers (45.75%) spend between 281 to 420 min per week (high). About 34.75% of the farmers listened to farm radio programmes between 141 to 280 min (moderate) while 19.5% listened to farm radio programmes less than 140 min per week (low). This means that there is a high level of patronage (based on the number of minutes spent per week) of farm radio

Table 2. Level of Patronage of the Farm radio programme.

Patronage Level	Frequency	Percent
< 140 min (low)	78	19.5
141 – 280 min (moderate)	139	34.75
281 – 420 min (high)	183	45.75
Total	400	100.00

Source: Field Data, 2021.

programmes among the farmers (Table 2). Ordinarily, people patronize products or services that they find relevant to their needs. With a high level of patronage of farm radio programmes, it could mean that the farm radio programmes are serving as good sources of agricultural knowledge to the farmers. Similarly, Odira (2014) and Murumba and Mogambi (2017) found that a significant majority of farmers do patronize radio stations for farm information. In a study where Zachariah (2008) measured the audiences' level of participation in local radio agricultural programmes, it was found that whilst rural farmers' listenership to local radio was high; participation by way of involvement or contribution to the discussions was found to be very low. Contrary to the findings of this study, Adamides and Stylianou (2018) found that there is low patronage of farm radio programmes among farmers.

Extent of satisfaction with the patronized farm radio programmes

Table 3 shows farmers' satisfaction with the knowledge received through farm radio programmes. A satisfaction index of 4.0 shows that farmers are highly satisfied with the knowledge received through farm radio programmes. The three areas with the highest level of satisfaction were; "land preparation techniques" (M=4.29, SD=0.45), "method of fertilizer application" (M=4.29, SD=0.51), "fall armyworm identification and management techniques" (M=4.29, SD=0.48) and "anti-rabies vaccination" (M=4.29, SD=0.69). This shows that majority of the farmers were satisfied with knowledge on land preparation procedures, method of fertilizer application, fall armyworm diagnosis and management techniques and anti-rabies vaccine. Farmers' knowledge will rise if they listen to farm radio programmes and are satisfied with the knowledge they receive. The implication of this finding is that efforts to air farm radio programmes must aim at arousing farmers' interest. It must also cause them to take the lessons serious so that it can result in increased agricultural productivity and long-term sustainability. Farmer satisfaction with farm radio programmes will go a long way toward facilitating the use of radio agricultural information as a reliable source of knowledge and information (Agwu et al., 2008). This study's findings are consistent with that of Oyelade (2006) who also found that majority of farmers were very

satisfied with agricultural programme. These findings, however, contrast that of Agwu et al., (2008), who claimed that majority of farmers in Nigeria's Enugu State were dissatisfied with radio agricultural programmes.

Level of utilisation of knowledge gained through patronized farm radio agriculture programmes

Table 4 shows how farmers utilize farm radio programme information. Generally, they sometimes employ the knowledge gained from the programme into their farming practices. This is shown by the utilisation index of 1.97. The three areas with the highest utilization of information gained from farm radio programmes were; "prepare your suckers well by clearing all debris and disease infected areas before planting" (M=2.55, SD=0.50), "stop burning your field when preparing the field for cultivation" (M=2.46, SD=0.50) and "select different soil or land for specific crops" (M=2.36, SD=0.48). This indicates that utilization of knowledge gained from farm radio programmes was mostly for preparing suckers well by clearing all debris and disease infected areas before planting, stopping the burning of field when preparing the field for cultivation and selecting different soil or land for specific crops. Utilisation of information gained from farm radio programmes was relatively low. Zakariah (2008) assessed the potential of local radio for agricultural communication in Ghana. Inferences from that study could show the reason for low utilisation of knowledge from farm radio programmes. The rural farmer is primarily a receiver or listener, rather than a collaborator in radio communication/utilisation of radio information. Since they have no hand in the organisation of the farm radio programmes, they are likely to be passive. Farmers make firm and positive contributions to the pattern and pace of development if they will be more involved in farm radio programmes and utilize the knowledge they get from it (Berringham, 1979). Zakariah (2008) further showed some of the main reasons given by farmers who were not able to adopt [utilize] farm radio messages often: lack of money to buy agricultural inputs and machinery, messages are not often timely, messages are not understood. Kakade (2013) disagreed with the results of the study and stated that majority of respondents (56%) in her study fully used information in their day today farming while 31.92% used information partially and farmers who have not used the information were only 13.46%.

Factors associated with farmers' patronage of farm radio programmes

There is a statistically significant association between radio set ownership and patronage of farm radio programmes at 10%. With a statistically significant level of 10%, it means that farmers who own radio sets are more likely to listen to farm radio programmes than

Table 3. Farmers' satisfaction with farm radio programme information.

Statements	FDN (%)	DN (%)	NN (%)	SN (%)	FS N (%)	Mean score	Std. Dev.
Site selection techniques	-	6 (1.50)	48 (12.00)	297 (74.25)	49 (12.25)	3.97	0.55
Land preparation techniques	-	-	-	284 (71.00)	116 (29.00)	4.29	0.45
Use of recommended improved seeds for planting	1 (0.25)	-	28 (7.00)	359 (89.75)	12 (3.00)	3.95	0.35
Method of fertilizer application	-	-	39 (9.75)	296 (74.00)	65 (16.25)	4.29	0.51
Proper nursery management	-	-	5 (1.25)	275 (68.75)	120 (30.00)	4.07	0.48
Fall armyworm identification and management techniques	-	1(0.25)	1 (0.25)	280 (70.50)	118 (29.50)	4.29	0.48
Anti-rabies vaccination	-	43(10.75)	71 (17.75)	282 (70.50)	4 (1.00)	4.29	0.69
Vaccination of farm animals	2(0.50)	8(2.00)	64 (16.00)	283 (70.75)	43 (10.75)	3.62	0.62
Safe use of agrochemicals	-	-	2 (0.50)	369 (92.25)	29 (7.25)	3.89	0.27
Identification and management of crop pests and diseases	-	11(2.75)	-	310 (77.50)	79 (19.75)	4.07	0.54
Importance of farmer group formations	2(0.50)	31(7.75)	45 (11.25)	263 (65.75)	59 (14.75)	3.87	0.77
Storage of cereals and grains	-	12(3.00)	-	308 (77.00)	80 (20.00)	4.14	0.55
Vegetable production techniques	-	46(11.50)	66 (16.50)	237 (59.25)	51 (12.75)	3.73	0.83
Market information	6(1.50)	80(20.00)	62 (15.50)	213 (53.25)	39 (9.75)	3.50	0.97
Rice production techniques-pests, diseases management and harvesting	-	4(1.00)	8 (2.00)	322 (80.50)	66 (16.50)	4.13	0.46
Farmers accessing credit facilities	5(1.25)	48(12.00)	85 (21.25)	202 (50.50)	60 (15.00)	3.66	0.92
Reduction of postharvest losses	-	-	5 (1.25)	301 (75.25)	94 (23.50)	4.22	0.45

Satisfaction Index: 4.0. Source: Field Data, 2021. NB: FD-Fully dissatisfied, D-Dissatisfied, N-Neutral, S-Satisfied, FS-Fully satisfied.

Table 4. Farmers' utilisation of farm radio programme knowledge.

Statements	Never N (%)	Sometimes N (%)	Always N (%)	Mean	Std. Dev
Select different soil or land for specific crops	-	258 (64.50)	142 (35.50)	2.36	0.48
Stop burning your field when preparing the field for cultivation	-	215 (53.75)	185 (46.25)	2.46	0.50
Prepare your suckers well by clearing all debris and disease infected areas before planting	-	180 (45.00)	220 (55.00)	2.55	0.50
Take part in planting for food and jobs	24 (6.00)	234 (58.50)	142 (35.50)	2.30	0.57
Use certified seeds for planting	7 (1.75)	259 (64.75)	134 (33.50)	2.32	0.50
Buy your seeds from certified seed sellers	135 (33.75)	201 (50.25)	64 (16.00)	1.82	0.68
Stop using your grains from your farm as seeds for planting	42 (10.53)	342 (85.71)	15 (3.76)	1.93	0.38
Do the line and pegging before planting	106 (26.50)	223 (55.75)	71 (17.75)	1.91	0.66
Nurse your rice seeds before planting	15 (3.75)	304 (76.00)	81 (20.25)	2.17	0.46
Put on your PPEs to protect oneself well when applying any of the agrochemicals	172 (43.00)	200 (50.00)	28 (7.00)	1.64	0.61
Apply fertilizer to your crops	7 (1.75)	332 (83.05)	61 (15.25)	2.14	0.39
Place your fertilizer about 10cm away from the plant	90 (22.50)	291 (72.75)	19 (4.75)	1.82	0.49

Table 4. Cont'd.

Apply two different types of fertilizer to your crops	83 (20.75)	267 (66.75)	50 (12.50)	1.92	0.57
Apply the fertilizers separately	103 (25.75)	255 (63.75)	42 (10.50)	1.85	0.58
Stop using one particular chemical to control pests and diseases on the field week after week	62 (15.50)	316 (79.0)	22 (5.50)	1.90	0.45
Use the pic sacks for storing your grains and cereals to avoid postharvest losses	228 (57.0)	148 (37.0)	24 (6.0)	1.49	0.61
Take part in farmers group meetings and activities	29 (22.48)	93 (72.09)	7 (5.43)	1.83	0.50
Access credit facilities from the banks to farmers	234 (58.50)	162 (40.50)	4 (1.00)	1.43	0.52
Contact the extension officer for chemicals to control fall armyworms	45 (11.25)	323 (80.75)	32 (8.00)	1.97	0.44
Contact the veterinary officer to vaccinate your pets against anti-rabies	163 (40.85)	223 (55.89)	13 (3.26)	1.62	0.55
Vaccinate your small ruminants against diseases through the veterinary officer	158 (39.50)	229 (57.25)	13 (3.25)	1.64	0.55
Information on prices of food items from various markets before sales	2 (0.50)	331 (82.75)	67 (16.75)	2.16	0.38

Utilisation Index: 1.97. Source: Field Data, 2021.

farmers who share a family radio. Findings of this study are consistent with that of Okwu et al. (2007) who found out that farmers who owned radio sets used them for accessing agricultural knowledge and therefore, ownership of radio sets by farmers enhances farmers' exposure and interest in radio agricultural programmes. Radio is the most important mass communication medium in Africa (Table 5). As a result of this, there is high radio ownership and listenership among even illiterate rural populations. Radio ownership has been found to be equally high in Ghana. Chapman et al. (2003) reported that 59% of the farmers in Northern Ghana who were selected for a study on the use of vernacular radio for information delivery on soil and water conservation, owned radio sets and this greatly influenced their listenership of radio.

Association between patronage and educational level

The education level of farmers had a statistically significant association with a significance level of 5%, on farmers' patronage of the farm radio programme. Farmers with a JHS educational level

are more likely to patronize agricultural radio programmes than those with no education, those who had primary education and those who had senior high school education. The results of this study agree with that of Ango et al. (2013) and Khan et al. (2017) who reported that there is positive relationship between formal education and patronage of agricultural radio programmes for agricultural innovation. In general, it is expected that people with high levels of education are expected to learn more from mass media than those with low levels of education (Tichenor et al., 1970). This means they will be exposed to the mass media and learn news at a faster rate than the less educated (Price and Zaller, 1993).

In relation to local radio, it is expected that farmers in local communities who rate high on education will listen to radio and learn more from the radio news than those who rate low on education (Table 6).

Association between patronage and years in farming

There was a statistically significant relationship between years in farming and farmers' patronage

of farm radio programmes. This is because, one of the cells had a frequency value of zero (0) and so it did not fit into the criteria for chi-square calculation. The number of years a farmer has worked in the field has no substantial impact on their willingness to patronize farm radio programmes. Ordinarily, experienced farmers rely greatly on their farm experience in all their farming activities. In agreement, Ndagi et al. (2013) and Rehman et al. (2013) also found that farming experience was not significant in influencing farmers' patronage of farm radio programmes (Table 7). The number of years spent in farming does not influence farmers' patronage of farm radio programmes for agricultural information.

Association between patronage and marital status

Table 8 shows that there is no association between marital status and patronage of farm radio programme. This is because, one of the cells has a value of zero (0) and so it does not fit into the criteria for chi-square calculation. This means that one's marital status has no bearing on whether or not they patronize farm radio

Table 5. Association between patronage and radio set ownership.

Patronage	Radio set ownership		Total
	Own radio	Family radio	
Low (0 or < 140mins)	54 (16.95)	27 (28.12)	81 (19.64)
Moderate (141 – 280mins)	107 (35.55)	31 (32.25)	138 (34.76)
High (281 – 420mins)	143 (47.5)	38 (39.58)	181(45.56)
Total	304 (100)	96 (100)	400 (100)

Pearson $\chi^2 = 8.57$; $P < 0.07$. Source: Authors' Construct, 2021.

Table 6. Association between patronage and educational level.

Patronage	Educational Level				Total
	Non-formal	Primary	JHS	SHS	
Low (0 or < 140min)	2 (100)	24 (20)	47 (19.74)	5 (12.5)	78 (19.5)
Moderate (141–280min)	5 (12.5)	38 (23.33)	82 (34.45)	14 (35)	139 (34.75)
High (281-420min)	5 (12.5)	48 (31.66)	109 (45.8)	21 (52.5)	183 (45.75)
Total	12 (100)	110 (100)	238 (100)	40 (100)	400 (100)

Pearson $\chi^2 = 22.32$; $P < 0.03$. Source: Authors' Construct, 2021.

Table 7. Association between patronage and years in farming.

Patronage	Years in farming					Total
	1-10 years	11-20 years	21-30 years	31-40 years	Above 40 years	
Low (0 or < 140min)	44 (19.91)	16 (16.32)	14 (21.21)	2 (18.18)	2 (50)	78 (19.5)
Moderate (141 - 280min)	68 (30.77)	36 (36.73)	30 (45.45)	5 (12.45)	0 (0)	139 (34.75)
High (281 – 420min)	109 (49.32)	46 (46.49)	22 (33.33)	4 (36.36)	2 (50)	183 (45.75)
Total	221 (100)	98 (100)	66 (100)	11 (100)	4 (100)	400 (100)

Pearson $\chi^2 = 25.47$; $P < 0.06$. Source: Authors' Construct, 2021.

Table 8. Association between patronage and marital status.

Patronage	Marital status				Total
	Single	Married	Divorced	Widowed	
Low (0 or < 140mins)	0 (0)	68 (19.6)	9 (19.15)	1 (25)	78 (19.5)
Moderate (141 – 280mins)	1 (50)	127 (36.60)	9 (19.15)	2 (50)	139 (34.75)
High (281 -420mins)	1 (50)	152 (43.8)	29 (61.7)	1 (25)	183 (45.75)
Total	2 (100)	347 (100)	47 (100)	4 (100)	400 (100)

Pearson $\chi^2 = 12.49$; $P < 0.41$. Source: Authors' Construct, 2021

programmes. The results of this study contradict that of Ango et al. (2013) who found out that there is rather a positive significant association between the marital status of the respondents and patronage of agricultural radio programmes.

Association between patronage and age

Age of farmers had a statistically significant association farmers' patronage of farm radio programmes at a significance level of 5%. Farmers between the ages of 41

and 50 are more likely to patronize agricultural radio programmes than those in the other age groups. The results of this study disagree with that of Khan et al. (2017) who reported that there is no positive relationship between the age of the respondent and the patronage of farm radio programmes (Table 9).

Conclusion

It can be concluded that: the patronage of farm radio programmes in the District was high since majority of the

Table 9. Association between patronage and age.

Patronage	Age						Total
	Below 30	31-40	41-50	51-60	61-70	Above 70	
Low (0 or < 140min)	1 (5.56)	15 (20)	39 (22.81)	12 (14.82)	8 (16.67)	3 (42.86)	78 (19.5)
Moderate (141 – 280min)	10 (55.56)	25 (33.33)	61 (35.67)	30 (37.04)	8 (14.48)	5 (12.5)	139 (34.75)
High (281 – 420min)	7 (38.89)	35 (46.66)	71 (41.52)	39 (48.15)	27 (56.25)	4 (57.14)	183 (45.75)
Total	18 (100)	75 (100)	171 (100)	81 (100)	43 (100)	12 (100)	400 (100)

Pearson $\chi^2 = 38.49$; $P < 0.00$. Source: Authors' Construct, 2021

farmers listened to farm radio programmes between 281 to 420 min per week. Farmers were satisfied with the knowledge (land preparation procedures, method of fertilizer application, fall armyworm diagnosis and management techniques and anti-rabies vaccine) gained from farm radio programmes. However, their utilisation of information gained from farm radio programmes was relatively low. Utilisation of information gained from farm radio programmes were mostly for preparing suckers well by clearing all debris and disease infected areas before planting, stopping the burning of field when preparing the field for cultivation and selecting different soil or land for specific crops.

Radio set ownership, educational level and age of farmers were significantly associated with patronage of farm radio programmes. The study therefore recommends the following; farmers should be encouraged to own radio sets and continue to rely on farm radio programme as an agricultural knowledge source. Further research should be carried out to find out why farmers highly patronized the farm radio programme, were satisfied with the information gained through the farm radio programmes but were not utilizing the knowledge gained from the programmes.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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Full Length Research Paper

Whose stream is this anyway? Exploring layers of viewer-integration in online participatory videos

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Within this paper, we explore variants of user-integrating (live) videos as examples of collaborative practices in social media. We propose an empirically informed typology of layers of user-integration in terms of: (A) directness / 'bodiliness' of interaction, (B) Unfinishedness in the content at hand and (C) Productive tensions through streamer-audience-interactions. As an example of spontaneously emerging (virtual) communities of practices, we argue that analyzing IOPVs - integrated, online participatory videos - allows us to outline the conditions for such participatory formats to unfold, and how video-communities engage with them. In this analysis, we connect to methodical literature on online participant-videos, applying ethnographic research-methods to our main case-studies 'chAIR Speedtest', 'Snappy's Chain-Stich' and 'Miko's tormenting chat', explicitly exploring methods of tracing viewer-producer-interactions. Here, we also add to conceptual literature on participatory (live) videos by questioning the understanding of live-participation as fundamentally peaceful collaboration. Here, our analytical categories (A-C) help us to get a broader understanding of the dynamics that keep such formats going and the required translation-practices from both viewer and video-producer alike. We conclude by summarizing our results and by discussing the issue of responsibility regarding (video) contents that emerge from such an asymmetrical collaboration.

Key words: Video ethnography, IOPV, grounded theory, participatory media, virtual communities of practice.

INTRODUCTION

Nuke your favorite streamer!

2.222 Bitties - In 2022 and outside of Twitch, that's around 22,22€. What does that get you? In Miko's virtual world, this is enough to drop a bomb on her and ruin (or enhance?) whatever she is doing in her live stream in front of thousands of people at a given moment. Now why in the world would you do that and why is that even a

thing? To put it in a nutshell, the (online) video content producer from times past has entered in a symbiotic (or parasitic?, in any case, reciprocal) relationship with his or her audience to create something new, a content-format that not only allows for participation but actively demands it. This reciprocity comes in many shapes and sizes and does not start with V-Tubers' getting bullied by their followers on stream (like in the case of Miko, bombed on

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stream). It starts with rather low-key variants, for example YouTube-videos where content-creators commonly ask viewers to comment their videos – An invitation for participation and an implicit declaration of the content at hand as unfinished. As we ‘ascend the ranks’ of participant-integrating video-formats, we find live-streams that include, for example, voting polls to decide what should/could happen next and ultimately, direct means of engaging with a video-livestream. Be it in the form of changing virtual environments (like in Miko’s World) or in mediated, bodily interaction with the streamer him/herself such as remote electrocutionⁱⁱ or, - more pleasurable, yet no more safe for work – remote vibrations on sensitive body-parts (Martins, 2019).

What connects all these cases, is a re-configuration of the roles between content-producer (video-producer) and his/her audience: The passive relationship commonly associated with ‘kicking back and watching a video’ is continually being transformed toward an integration of the audience into the video itself via a variety of means that we seek to further explore. Thus, the viewer becomes a participant that can actively (albeit to varying degrees of integration) influence what is happening in the video for them and for every other viewer / participant.

Acknowledging this trend, in this paper, we seek to systematically introduce the emerging data-type that we identified as IOPVs (integrated, online, participatory videos) and to explore specific variants of how streamers / video-producers and their audiences / participants play off each other in their creation. Through a comparative analysis of three plus one IOPV case-studies and by contrasting those to pre-existing work on bodily streamer-participant-relationships on the streaming-platform Chaturbateⁱⁱⁱ (Martins, 2019), we demonstrate that the process of creating IOPVs is characterized by the introduction of various layers of user-integration that vary explicitly in the following regards:

First, in terms of how directly (‘bodily’) they impact the stream/video, in other words, how much space they leave for the streamer him/herself to interpret the participatory act.

Second, how they play off and create a sense of ‘unfinishedness’ and hence affordances for user-integration.

Finally, we investigate the role that productive tensions between participants play in this collaboratively shaped video-format.

After a short excursus into established ethnographic approaches toward (participant) video-material to contextualize the data type of IOPVs in terms of the specific challenges and opportunities they offer for ethnographers, we present an empirically informed typology to identify variants of IOPV-creation. We hereby show how the plurality of variants of user-integration is exemplary for user-oriented, asymmetrical collaboration

formats, affording a variety of means of participation to a variety of participants. We conclude by summarizing our results and by discussing the opportunities this new data type offers for collaborative formats. Furthermore, we reflect on the relationship between participant integration and responsibilities emerging from this collaboration.

VIDEOS IN ETHNOGRAPHIC RESEARCH: FROM ARCHIVE TO COMMUNITY-ENTITY

During the last years, the relevance of audio-visual material within ethnographic research has expanded from a means of conserving ethnographic accounts toward an entirely new way of making sense of community-interactions. What started as means of making ethnographic observations durable in a rich data-format that allows for detailed analysis long after the time of recording, by now, has expanded far beyond putting researchers in the video-creating role. With the widespread availability of video-capturing technology, implicitly ethnographic accounts may be created by participants/field-inhabitants without a researcher’s direct participation, allowing professional ethnographers to ‘dive in’ from a participant’s perspective by analysing and interpreting the video-material created by them.

The change in perspective on video-material from an ethnographer’s tool to a community-product should hereby not be understood as an overcoming and hence the obsolescence of established methods as, for example, video-ethnography is still a viable and important tool in the toolset of any ethnographer. Likewise, while our analytical approach focusses on the depth and means of community-integration into video-creation processes, established methods such as OPV-analysis (online participatory video analysis) remain fruitful for describing and analysing online participant videos in more general terms.

In this first contextualization, we provide a summary of ethnographic approaches toward video-material, highlighting key methodological considerations in bringing video-analysis from an ethnographer’s ‘conservation-tool’ to the analysis of dynamic, participatory accounts of community-members. We acknowledge that this summary is necessarily non-exhaustive and merely includes some of the various methods for conducting research on/with video-material within ethnographic research traditions. For this overview, we sketch a development from video-ethnography (Redmon, 2019; Bates, 2015; Iedema et al., 2006; Vannini, 2017; Strangelove, 2007; Spinney, 2011; Äijälä, 2021; Figeac and Chaulet, 2018; Pink et. al., 2017) over vernacular video analysis / video interaction analysis (Tuma, 2017; Tuma, 2018; Tuma, 2019) to the analysis of online participatory videos (Schmidt and Wiese, 2019).

Following this summary, we propose an analytical

approach towards participatory videos that builds on and extends beyond those three approaches. Our main goal here is to demonstrate how drawing on all three of these frameworks allows us to establish a methodical toolset that considers the specifics, the opportunities and challenges integrated online participatory videos offer to ethnographers and to highlight modes of user-integration within these participatory formats.

As a starting point, the broadest method of how to engage with video-material from an ethnographer's point of view is the employment of video-ethnography as "[...] a cinematic approach to recording ethnographic expressions of lived experiences" (Redmon, 2019). From a means of understanding lived care-practices in hospitals (Iedema et al., 2006) all the way to capturing interspecies-encounters (Äijälä, 2021), video-ethnographers create video-material as a resource to get insights into highly situational and complex practices, that could not be adequately transformed into ethnographical knowledge by traditional means of written or voice-recorded accounts. Unlike more traditional means of ethnographic research, the multimodality video-material offers, affords a 'conservation' of field-research in a way that remains open for interpretation and analysis even years after having been produced. This great advantage is, at the same time, video-ethnography's greatest potential shortcoming: As Redmon (2019) pointed out, video-ethnographic accounts are necessarily bodily and therefore 'bound up' accounts that, despite their richness, always represent a particular view, a distinct perspective on a given setting. Even though video ethnography has come a long way from putting up stationary cameras, for example through the introduction of body-mounted action-cameras that account for the situatedness and the specific practices of an ethnographer in the field (Woznica, 2020), the researcher's perspective fundamentally guides video-production. To account for this 'boundness', the interpretation of such video-material may be based on the perspectives of a variety of researchers within the context of data sessions (Knoblauch and Schnettler, 2012) to retrospectively question the perspective of a given video-account through a "video analysis of video analysis" (ibid.). Despite this potential shortcoming, the importance of video material for the creation of comprehensive ethnographic accounts, especially for complex settings (Woznica, 2020) cannot be overstated, still, critical reflection and analysis of their 'boundness' remains crucial for its use in scientific contexts.

Similar to the method of 'video-analysing the video-analysis' (Knoblauch and Schnettler, 2012), in which video-researchers take a step back to reflect on and analyse the video-making practices of fellow researchers, Rene Tuma's contributions to what he called "vernacular video analysis" (Tuma, 2017, 2019) puts a focus on how video-experts make sense of video-material. The method

he outlines is fundamentally one of 'observing the observer', to take the back seat in video-analysis and to analyse the practices that video experts – people that deal with video material in professional contexts – engage in and how they become such 'video experts' in the first place. Fundamentally, this shift in perspective may be compared to a shift from first- to second order observations (Luhmann, 1995) where the 'what' is subsumed by the 'how', focussing research-efforts not directly on the video-contents at hand, but on how they are being used / transformed within a professional setting. This subsumption is emphasized by Tuma's term of 'Methodicity' ("Methodizität") that he introduced in his 2018 work on video interaction analysis that, broadly speaking, aims at the analysis of video-material from 'natural situations' that have not specifically been constructed for research-purposes. Furthermore, this ethnomethodological approach also highlights the concept of interactivity ("Interaktivität") by (naturally) involved actors within such videos as a pre-condition to explore those actors' reflexive practices from a research-perspective. Here, the fundamental idea is that the ways in which involved actors make sense of the context of a video's production allows ethnographers to gain insights into what is happening in a given video and how those actors account for it.

While Tuma's approach changes the perspective on who interprets video-material, Schmidt and Wiese's approach of the analysis of participatory videos changes the perspective on who creates and shares video-material in the first place. In most uses of video-ethnography, videos are created with the intent of conserving interactions on film and making them available for later analysis. Schmidt and Wiese (2019) side-step this perspective by focusing their method of video-analysis on content that has been created specifically by participants within a given setting. The fundamental assumption guiding their method is that the very specific, situational sensemaking-practices of video-creators like panning of the camera, following (from the perspective of the video-creator) interesting events or even creating settings with the intent of being captured on film can be retrospectively analysed and, in their specificities, allow for deeper insights into practices 'through the eyes of a participant'. In terms of their hermeneutic practices, the roles of the video-expert (Tuma) and video-ethnographer (Redmon) could be understood as collapsing into one person in this approach, as the person filming is both situated within a setting as active participant as well as a video-producer that 'acts proficiently' toward the video material as well. As for the researcher's role in all of that, it is one of reconstructing and understanding the video-material in the context of the specific sensemaking-practices that the video-creators demonstrate. Here, the researcher engages with video-material created by participants to

explore the specific ways they make sense of the settings they find themselves in.

Drawing on all three of these approaches, we developed the basis for a methodical framework to analyse a very particular type of video-material that is becoming more and more prominent on social-media (Siapera, 2017)^{iv} platforms and live-streaming portals alike: The IOPV – Integrated, Online, Participatory Video.

Here, we use the term ‘integrated’ as a technical term that describes the assemblage of actors into an inseparable entity^v. In contrast to Tuma’s notion of ‘Interactivity’ (2013), we use the term ‘integration’ to highlight that, within IOPVs, users are not only interacting, but are becoming part of the video-material itself, that cannot be methodically separated from the practice of video-creation. Subsequently and given the expansion of video-sharing platforms (examples include YouTube, Twitch, Chaturbate, Periscope (discontinued), etc.), the line between video / content-creator and viewer becomes increasingly blurred. While one might still somewhat clearly differentiate between content-producer and (for example) viewers or commenters on platforms like YouTube, other, – especially live-streaming – platforms such as Twitch allow the video-creator to bind with their viewers in unique ways to collaboratively create video-content, further blurring the lines between who is producing video-content and who is consuming it.

Here, it should be noted that while, in the following, we still use terms such as ‘video producer’, ‘streamer’ or ‘video participant’ to highlight, for example, particular affordances that come with being the host of a stream, this vocabulary is based on a pragmatic, analytical approach that is not intended to suggest a return to a video-creator – viewer – dichotomy but to identify certain actors and their specific practices.

Comparing IOPVs to the previously explored video-types and investigation-methods, our understanding of IOPVs leads us to understand content-producers as both participants (Schmidt and Wiese, 2019) and as video-experts as being proficient with the medium they inhabit (Tuma, 2017, 2019). Also, we understand viewers / participants as video-experts in themselves, as well (ibid.) that not only display their own hermeneutic practices in interacting with video-material but, through their reflective perspective, add to the content at hand.

Furthermore, in the context of IOPVs, the researcher’s perspective is expanded as well: While, in Schmidt and Wiese’s work, researchers could refer to the particular practices of video-creators to guide and inspire their analysis, researchers engaging in the analysis of IOPVs need to also consider the hermeneutic practices of further participants (like, comments posted under videos, live interaction between streamer and participants, etc.) as well as how participants (or even the original video-creator) interact with those practices. This expansion is highly relevant for a sociological perspective on this

medium for two distinct reasons:

First, it advances the understanding of participant videos beyond mere participant documents toward a data-type in itself, as participants are fundamentally acting as lay ethnographers that already interpret and make sense of contents at hand. As such, analysis of IOPVs is not ethnography of one account but of community-accounts / a communities’ interpretation of a user’s account and vice versa. Secondly, it establishes a collaborative framework of content-creation that takes the burden of ‘presenting a finished product’ off the shoulders of the video-producer and replaces it with the burden of having to navigate tensions emerging from the integration of heterogeneous sensemaking-practices by participants. It is this very relationship and the means of interacting with / integrating oneself into video-practices that we will analyse below. We hereby put a particular emphasis on the coping with heterogeneity created in IOPVs by multi-layered interplays between video-producer and participants, analysing layers of integration and how they are translated into the video-material at hand.

CONCEPTUAL FRAMEWORK AND ANALYTIC TOOLS: COLLABORATIVE ONLINE-SENSEMAKING BEYOND PEACEFUL COOPERATION

Before going into detail in our case-studies, it is necessary to briefly address the fundamental concepts of *community*, *video* and *collaboration* as used throughout this paper.

First, in the context of ethnographic approaches toward video-analysis, we understand ‘communities’ as an umbrella-term to include all video-participants from streamers, video-creators, commenters and other people interacting within the creation-process of IOPVs. We hereby connect to the asymmetric and practice-focussed notions associated with ‘virtual communities of practice’ as presented by Zhang and Watts (2008) by acknowledging that, ‘video participation’ is a process that comes in many shapes and sizes and is not exclusive to a sub-category of streaming-participants or to a given video-hosting / streaming platform. Instead, it applies to all actors that associate themselves with a given video or channel even if their contributions are highly asymmetric and situational.

As for the V in IOPV, when speaking of ‘videos’, we refer to the data that is being co-created within such communities as a whole. This goes beyond the audio-visual data itself, also including ‘traces of participation’ such as chat-boxes accompanying live-streams or comments that have been added retrospectively by community-members. We chose to stick with the term ‘video’ for two reasons: First – in doing so – we connect to previous, methodically similar approaches like video sequence analysis that already opened up ‘videos’

beyond audio-visual material itself, albeit without considering, for example, parts of the virtual situatedness of a video as integral to the video itself. Secondly, we use 'video' as a term to sensitize for the 'finishedness' we introduce as ethnographers whenever we rip an IOPV from ongoing community-practices to make it accessible for research purposes. In that sense, using the term 'video' means acknowledging that we interrupted this ongoing process for research-purposes and, in doing so, already affected the content at hand. This is of particular relevance in contrast to the established notion of video ethnography as a method of conserving content that has been outlined above.

Generally, when it comes to understanding IOPVs as examples of viewer participation, we fundamentally follow previous scholars engaging with such content in their description as moments of community-collaboration. However, in aiming at a systematic introduction of IOPVs as a data-type in itself we question the notion of 'peaceful collaboration' that underlies the work of scholars such as Martins (2019) in his explorations of collective, intimate relationships on Chaturbate. Instead, we break with this latent assumption in proposing that tensions between, for example, streamer and people watching the stream ('chat') can be productive (or even essential; Kuhn, 1977) and need continuous practices of negotiation between involved actors, which also includes technical artifacts like, in Martins' case-study, remote-vibrators.

Furthermore, in focussing on the role that tensions play in IOPVs, we identified 'unfinishedness' as second main characteristic of this data-type that is being created by the implicit or explicit invitation/affordance toward participants to involve themselves as integral parts of an IOPV. It is this invitation (even implicitly) that affords the audience integration into in the creation process of video-contents at hand. This factor is crucial as both, the video-producer / streamer and (potential) participants, have to rely on each other for the creation-process of an IOPV and cannot do without each other. Here, we observe an interplay of opening up and closing opportunities of integration from a negotiation-process between those two parties. In this context, we also sensitize for the openness of user-integration as an important category: Not only do we look at the specifics of how users may influence a given IOPV, we also investigate the (technical) preconditions for this participation. As we will demonstrate in the case-studies below, this 'openness of integration' may, for example, be limited by paywalls or required subscriptions.

From a third perspective, we connect back to Martins (2019) by taking into account how directly/'bodily' user-integration impacts video-co-creation. In his example of Chaturbate, the mode of user-integration was characterized by a very much embodied, direct means of interaction (remote control of a vibrator on/ inside the streamer's body). This concept of 'bodiliness' will be of

particular interest when it comes to the affordance of negotiation-practices between streamers and participants and how / to what degree streamers can ignore or negate community-interactions.

After the following, methodical overview, we carefully investigate the relationship between those concepts and explore how they manifest throughout a range of IOPVs, as represented by the selected case-studies. We chose to present this variety of three plus one specific case-studies to sensitize for and analyse the diversity of user-integrating practices in terms of the previously identified concepts of productive tensions, unfinishedness and bodiliness.

METHODICAL CONSIDERATIONS ON IOPVs: BETWEEN OPVs AND GROUNDED THEORY

In this chapter, we provide an overview of our methodical approach based on the distinctions and contrasts introduced in "Videos in Ethnographic research –From archive to community-entity" above. Here, we highlight how we build on Schmidt and Wiese's (2019) as well as Tuma's (2017; 2018; 2019) methodical considerations toward online participant videos and video experts and show how and why we introduce changes to these frameworks. Furthermore, we go into detail on the individual steps we took throughout the process of IOPV-analysis and thereby give insights into our operational framework.

First, we explain our general deliberations on potential case studies and provide an introduction as to how they were made accessible for IOPV-analysis. In order to being able to provide a methodical framework to analyse the broad variety and diversity of different variants of IOPVs, we chose four examples across their integration-range for further analysis below. We will further elaborate on the reasons for why each example was chosen and how it relates to the other cases in detail below.

Analytically, we build on Schmidt and Wiese's categories of (1) 'Situatedness', (2) 'Situativity' and (3) the 'specific mode of video-creation' to initially open up the specifics of a given video-case-study. Here, the basic notion is that data-material generated by online participant video-material holds fascinating and relevant information for scientific analysis. Therefore, fundamentally, we followed a qualitative, inductive, grounded theory-approach (Charmaz, 2012) to allow our gathered data to guide us through the analytical process.

The live-streams we present (cases two and three) have been sourced from the platform "Twitch", which provides potential content creators with a platform on which they can live-stream from their devices and interact with their communities. The platform's terms of service do not stipulate in detail what content is and is not allowed to be streamed, they merely introduce a set of guidelines

(such as a ban of nudity) and enforce current law.

Therefore, all of our (livestream) case studies are non-nudity live-streams. The two non-live IOPVs we analyse (cases one and four) have been sourced from the platform YouTube, which (for our purposes) follows similar rules as Twitch (Conformity to current law, non-nudity-except from educational formats-, etc).

Because of live stream's temporal volatility, it has proven of crucial importance to record them for the purposes of any kind of socio-scientific analysis. We did this by recording these live-streams (including chat-interactions) by using screen-capture software ("OBS Studio" proved very helpful here). When it comes to non-livestream IOPVs, we used video-downloading tools such as "Free Video Downloader for YouTube" to get a hold of the audio-visual material itself in addition to transcribing the most prominent comments (if the amount of total comments exceeds what could sensibly be transcribed) using MAXQDA.

After archiving the video-contents on our devices, the next step in Schmidt & Wiese's proposed methodical outline is to repeatedly watch the videos to identify the sequential order of happening within the videos. Here, sequencing means dividing / structuring the video in regard to "situatedly meaningful sequences of the events shown" (Schmidt and Wiese 2019). Tuma describes this process as focussing on the „sequentially inter-related acting of the actors that constitutes the situation“ (Tuma, 2018) in his work on video-interaction analysis^{vi} ("Video-Interaktionsanalyse"). This consideration is of great importance for us, because it enables us to identify the segments of the material that are most instructive to understand (here) IOPVs and how participants are bound up in their creation.

In the next step, these sequences are being analysed in greater detail by transcribing video contents such as what is being said by video producers, how they position and use their bodies in the video and how the camera is acting. These transcriptions are then shared within the research-group and while the video is being re-watched in the context of a data session, associations and possible interpretations are being discussed to identify and explicate the criteria that guided the selection of sequences of relevance for further study.

Our approach here was also highly influenced by Rene Tuma's work on video-interaction analysis, especially the following two aspects:

First, he strives to analyse the resources, knowledge and practical considerations that are being used by the interacting actors in the situation. Applied to our study this means that we focus on finding out which (especially technical) resources participants in IOPVs use to interact and how they convey their knowledge and deliberations through the means of interaction as provided by the streaming platforms.

Secondly, Tuma emphasizes the „sequential order of the interactions“ (Tuma, 2018). To analyze this order, he suggests reconstructing the situations in great detail in order to find out how the actors orient themselves on each other and how they coordinate their interactions. This analytical focus is at the heart of our analysis, as we aimed to analyse how participants interact with each other and with the situation of the IOPV itself to find out how this data-type is being created.

In characterizing IOPVs by the integration of communities into the process of video-creation, we concluded, that their 'virtual career' (as Schmidt and Wiese describe it) does not start after the video's creation but is tangled up in it. Likewise, the specific modes of video-creation – for example, how a content-creator interacts with a camera, what purpose the video serves (like surveillance-purposes, etc.) or the cadrage of the video (ibid.) – directly impact the sense-making practices of community-members and therefore how they partake in the creation of (here) IOPV-material.

Therefore, we deviate from the previously outlined methodology (Schmidt and Wiese, 2019; Tuma 2017, 2018, 2019) by emphasizing the integration of the chats' interactions in the transcript. Especially when it comes to more technically mediated interactions – like subscription sounds for example – we treat these as part of the situatedness of the video-creation and therefore add them as a new category to the previously outlined approach. Within the transcription process, we hence furthermore traced integrative moments in the chat or in comments below by reading them while and after watching the recordings. Especially when it comes to live-streams, we stopped the video when interactions between the video-participants occurred that we found to be of interest to our analysis of the dynamics of participant-integration.

Following grounded theory, we then aggregated our observations into codes, increasingly enriching them with references to other video-sequences. In a next step, we conducted further data-sessions in which we re-watched the recordings, read the transcripts simultaneously and shared our interpretations and associations.

Based on this work, we analysed the transcriptions in terms of answering the research-questions that emerged from our dealings with the examples at hand. In the following, we present a summary of this analysis.

VARIANTS OF IOPVs – THREE PLUS ONE CASE-STUDIES TOWARD A TYPOLOGY OF INTEGRATIVE ELEMENTS IN OPVs

To give a sense of the variety of video-formats that may fall under the category of 'IOPVs' as well as to investigate what roles the relationship tensions play within the videos, how unfinishedness is created and communicated



Figure 1. 'Amazing' on his chAIR¹.

and how those two concepts relate to the 'bodiliness' / directness of community-integration, we selected four variants of IOPVs for detailed analysis. Temporally disconnected IOPVs: Amazing's chair and a communities' suggestions on how to improve it

The first IOPV we selected for a detailed analysis is a part of a series of YouTube-videos by the channel "AmazingDIYProjects" (in the following, 'Amazing' in short) of him building a manned multicopter (...or a 'chair' with many motors mounted to it – Hence, the 'chAIR') and, in this particular video, takes it out for a flight test of its maximum practical speed. According to the information provided within this and other videos of the series, the chAIR, as the channel-name suggests, is a DIY-project that has emerged out of a shed and Amazing's mind. The video itself shows Amazing bringing out and assembling his 'chAIR' on Laxå Flygfält, a private airstrip near the Swedish city of Laxå, and flying it alongside a driving car to estimate the chAIR's maximum practical speed (Figure 1).

When investigating the ways in which this video is being integrated into a video-community, we observe a temporal disconnect that has been identified as being characteristic for this variant of integrated OPVs: While the video's community interacts with it and, through comments and likes / dislikes adds to the content and its relevance at hand, this type of integration occurs retrospectively and therefore temporally disconnected from the production of the video itself.

Even though comments (and the subsequent replies by 'Amazing') explicitly connect to practices in the content uploaded by the creator and hence become integral to it, the temporalities in the comment-section remain disconnected from those created in the audio-visual

material itself. Unlike the following case studies two and three below, this video could be approached by taking on the established video-analytical framework as proposed by Schmidt and Wiese (2019), thereby treating audio visual contents (by the uploader) and community interactions as separate entities. However, by employing an IOPV-approach and hence treating the audio-visual material itself and community-interactions as inseparable entities, we sensitize for the co-creative potential that emerges in this very interaction. In the example above (Figure 2), this takes on the form of rather strictly technical advice to improve the 'chAIR' as shown in the video.

Even in a video (-series) like this one, that seems to have been created by 'Amazing' as a sort of video-journal, describing his journey in developing and flying the 'chAIR', was apparently not uploaded with any specific goal of direct community-integration in mind, we observed that very specific moments of unfinishedness are being created by comments such as the one above, questioning and investigating what could / should be changed about (here) the 'chAIR'. Again, this 'unfinishedness' is being created retrospectively and is therefore temporally disconnected from the video-creation, still, it hints at the possibility for (here) community-inspired multicopter-design, if the uploader and initial video-creator see it fitting to their vision of the craft. When compared to the following examples, we also observed an indirectness of integration that allows users to merely participate by 'taking the detour' of using comments / likes, lacking the possibility of directly / 'bodily' impacting the OPV. Despite the rather indirect means of viewer-integration in this case, it still affords viewers the opportunity to question their interpretations of

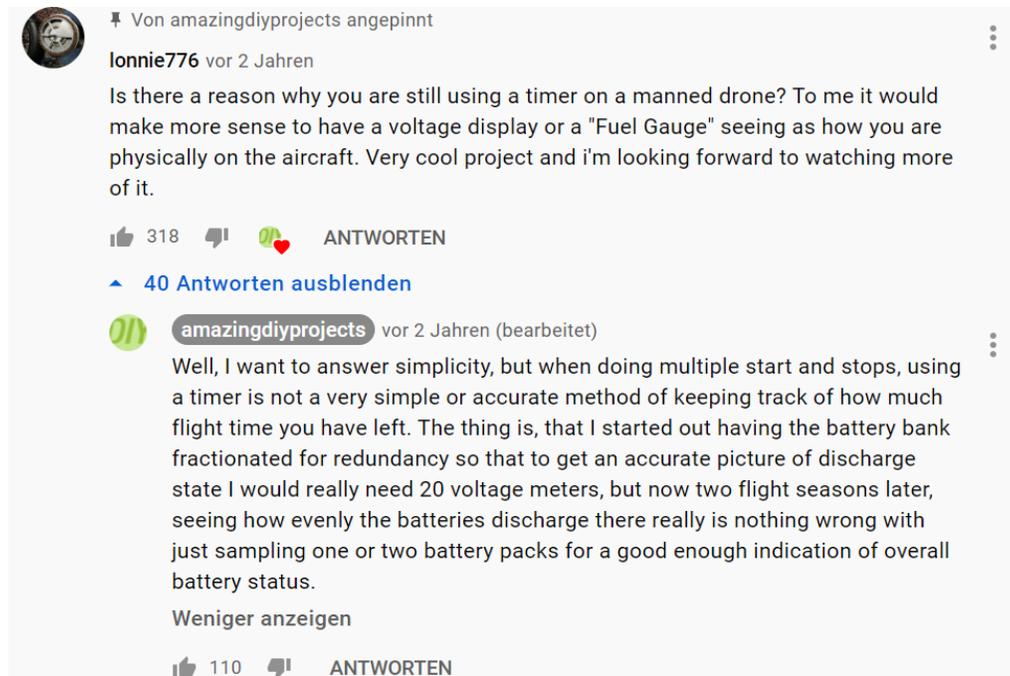


Figure 2. Comments suggesting a fuel-gauge.

the video by comparing their impressions with those of other people before them, as expressed in the comment-section, if they choose to do so. It is precisely this (potential) shift in perspective from viewer of a video (without the context of other viewers) to a viewer that takes the video at hand as a collaborative product, acknowledging the necessity to challenge and question interpretations of previous viewers that allows them to become lay video-ethnographers themselves.

Synchronous IOPVs: Snappy and the chain-stich

The next IOPV-type we identified is that of the 'synchronous IOPV'. As an example for such, we chose a live-stream by the German Twitch-Streamer "SnappyInc". Her Twitch-account^{vii}, as of January 2022 has around 6600 followers and the stream-recordings saved by Twitch usually gain between 1000 and 1600 views. She describes her streaming-schedule as her streaming everything she feels like streaming, mainly "CoWorking"-Streams in which she works on her stitching-projects. She mainly streams in the category "Just Chatting" and "Cooking and Food" up to four times a week.

In comparison to the first case we introduced, this type of IOPV is characterized by a continuous temporality between streamer and participants. Despite this synchronism, when contrasted to Martins (2019)' analysis of Chaturbate-streamers, the streamer herself remains the obligatory passage point for all integrative moments

occurring during the stream. Fundamentally, it is up to her, which comments she responds to, how she responds to them and which ones she chooses to ignore. Therefore, while her community is enabled to interact with her (the streamer) more directly and without enduring a significant temporal disconnect, interactions that are directly-bodily in nature are not available in this case.

Given those limitations, our focus in this example was therefore to investigate how 'chat' tries to affect the stream and under which circumstances this affection and hence viewer-integration is being 'allowed'. We put a particular emphasis on how aspects of unfinishedness popping up throughout the stream introduce tensions between streamer and 'chat' and how these tensions are being coped with by the streamer. In this case, the chat mainly interacts via text messages directed at the streamer, yet visible to all viewers, which enables us to analyse how the streamer copes with those attempts of impact in the ongoing stream.

The particular case we investigated was created in the "Just Chatting"-Category. This category is defined by streams in which the streamer mainly focusses on talking / interacting with the chat while streaming oftentimes rather unrelated contents.

In this stream, Snappy is working on a crochet-project while talking to her chat. In the beginning, the conversation centres on her and chats' experiences with siblings. Right after that conversation comes to an end, our chosen sequence starts at minute 10:10 with the chat

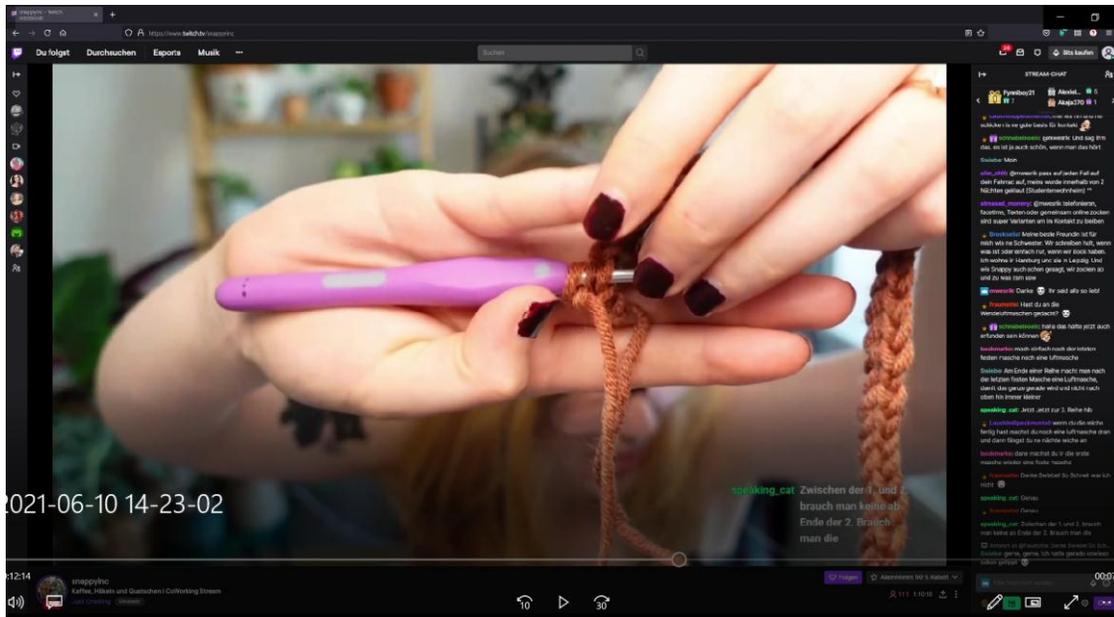


Figure 3. Snappy's Crocheting Project.

asking her if she had thought of something called a 'chain stitch' for her work. While looking at her project she reads the message in the chat, smiles embarrassed and asks "the what?", implicitly creating a window of opportunity for community-integration and declaring (here) her knowledge as incomplete/unfinished. She then continues with her project and starts asking the chat more specific questions about crochet-techniques. Since she did not know what a "chain stitch" was, she announced to google it. While she is entering the search request, she is still reading the chat messages. Here, the chat moves ahead of her and explains the technique to her faster than she can finish her search on Google, inviting Snappy to move from casual chat-interactions to a more direct exchange with the chat. When Snappy, through taking chat's suggestions seriously, follows this exchange, she voluntarily enters a collaborative relationship with the chat that is characterized by this rapid exchange and the necessity to work at the chat's pace instead of the chat accompanying Snappy at her pace. She then aborts her google-search and tries to follow the chat's explanations on how to do a "chain stitch". This sequence hints at the notion of 'peaceful cooperation' between streamer and audience during a live stream only applying to an extent: While Snappy's chat might try to help her; it does so by interrupting her Google-Search, bringing her to close her search-window and to return to the stream. This intervention by the chat therefore is not simply an act of cooperation, but introduces a layer of tension through the unfinishedness Snappy displayed in her project and her crocheting-skills (Figure 3).

After this scene, she tries to implement the tips and

suggestions she received from her chat directly in her project. She seems to be struggling a little bit with it and seeks confirmation from the chat that she is crocheting correctly. To do so, she holds her project directly in front of the camera, even covering her face, so the autofocus puts the project into frame correctly. She then shows the chat exactly how she is following the steps suggested by the chat, asking if she is working correctly and waits for the chat to answer. As soon as her chat confirms that the correctness of her work, she looks satisfied, takes her project back towards her lap and thereby out of the picture and continues crocheting 'by herself'. In this moment, she implicitly closed down the stream's 'unfinishedness' as she now knows about the chain-stitch. Subsequently, the tensions between her and her chat starts to ease.

Regarding our understanding of IOPVs, this example shows how a live audience may be integrated by the streamer voluntarily to cope with tensions emerging from a sense of unfinishedness, which is an essential aspect of this example. Not only is the crochet-project Snappy is working on far from being finished in itself, the very fact that she relies on the chat's expertise to work on the project shows that the aspect of unfinishedness is an integral part of this stream. This particular example therefore shows that the previously identified concepts of 'unfinishedness' and tensions between streamer and chat are not mere parallel or unconnected occurrences but instead emerge from and through each other – here, tensions emerged from the declaration of the streamer's project and project-related knowledge as unfinished / incomplete. Those tensions were coped with by an



Figure 4. Youna 'Technician' (left) and 'Miko' (right) side by side (taken from the CodeMiko Twitter).

embrace of this 'unfinishedness' and the acceptance of chat's knowledge as a part of the project.

As for the type of data that is being created here, viewers still face the challenge of making sense of the video at hand; however, working with other people's interpretations is occurring more situationally in this example. Unlike the first case where interpretations are occurring and being documented one after another in comment-form, sensemaking in this example is a much more involved process that requires the viewer to take into account the live-reaction of the streamer, other viewers and consider how to relate to these interactions oneself.

Bodily IOPVs: Miko and her 'tormenting chat'

As an example for a rather direct-bodily IOPV, we analysed one sequence taken from a live-stream by the V-Tuber 'CodeMiko', created by Youna Kang aka 'Technician'. Her Twitch-Channel (as of January 2022) has 847.000 followers and her archived videos usually gather between 50.000 and 300.000 views. Currently, she mainly streams in the category "Just Chatting", however (as in the example below) she also occasionally streams in various gaming categories. Being a V-Tuber, Youna frequently plays a set of virtual personae centred around the avatar 'Miko', a 3D model that she controls in real time via a motion-capturing suit and facial tracking (Figure 4).

What sets her video-format apart from the previous examples of IOPVs is the possibility for the audience/participants to directly ('bodily' when compared to Martins, 2019) influence the live-stream via coded interactions. While other levels of audience-integration like polls or chatting are usually also present in her streams, we focus this case in terms of highlighting

integrative aspects that – like in the case of the remote-controlled vibrator in Martins (2019) research – directly impact the streamer and therefore contribute to 'setting the scene' without the streamer being able to directly intervene.

To give a sense of the complex technical framework underpinning the viewer-streamer relationship in CodeMiko streams (especially when compared to the previous examples), we first highlight some of the integrative elements present before analysing a particular example in terms of how those elements contribute to creating tensions between streamer and viewership as well as what role unfinishedness plays in her streams. Figure 5 shows a rather common scenario from the interview-part^{viii} of a CodeMiko stream. Unlike the previous examples, this stream provides various, simultaneous means of participant-integration. We identified the following interactive elements in this example:

1. Chat-contents are being continually displayed on Miko's chest
2. In exchange for bits, people can write on Miko's face
3. Viewers can create and vote on polls (here: "change the scene?")
4. Viewers have a set of additional opportunities to influence/sabotage/enhance the stream directly ('bodily') via coded interactions such as throwing food at Miko, changing her eye- or hair-colour, or even nuking / exploding her (see the chart on the screenshot's left side)
5. Viewers can heat up or cool down an egg via coded interactions that, if too cool or too hot, breaks (on the very left side of the screen) Here, not one particular action (like, by contrast, nuking Miko) changes the stream but rather the collective of interactions directed toward the egg.
6. Similar to (5), there is a 'shart'-counter that keeps track

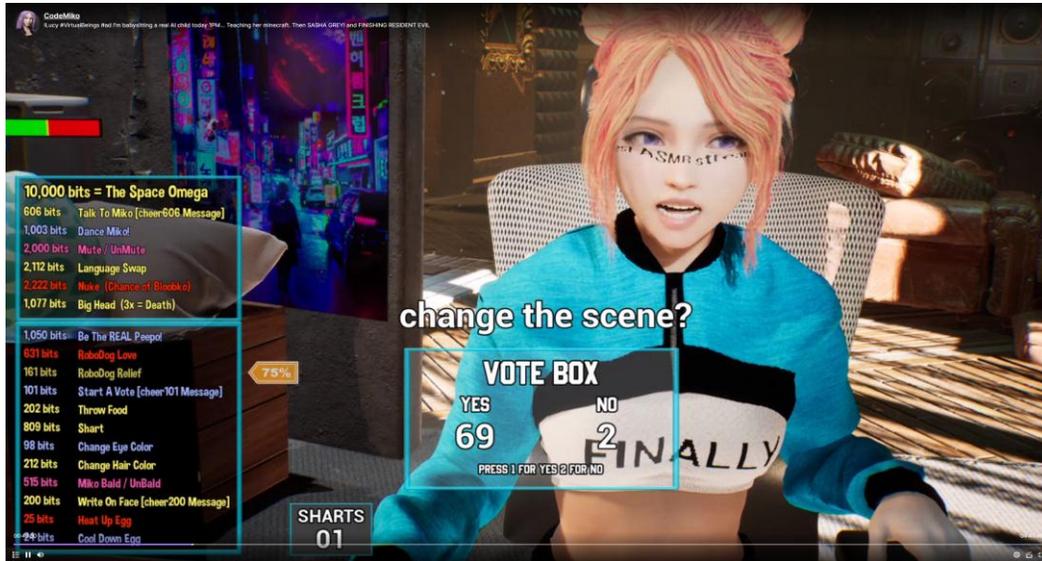


Figure 5. 'Miko' in one of her usual (virtual) environments

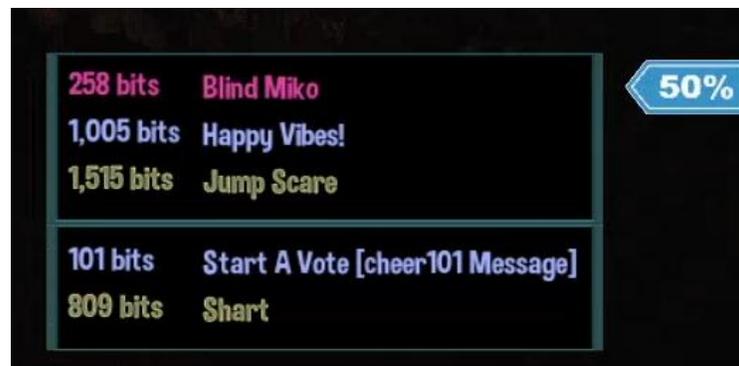


Figure 6. Context-specific coded interactions. Here: for Resident Evil 8.

of how often the coded interaction 'shart' has been triggered. (Here, the 'shart-counter' appears as a meta-artefact, abstracting from specific interactions)

7. Furthermore, throughout the stream, various 'discounts' on coded interactions are introduced (In Figure 5, 75% off for "RoboDog Relief"; in Figure 6, 50% off for "Blind Miko"), creating additional incentives for viewers to interact with the stream and highlighting the possibility to 'take action'.

The sequence we selected for analysis under this category of 'Bodily IOPVs' was taken from a CodeMiko stream from May of 2021. While the stream started off with a visit to the CodeMiko-subreddit, followed by an interview and some playing some Minecraft, Miko eventually turned to playing the game Resident Evil 8, a survival-horror videogame. For this gaming-session,

'Technician' set up a particular set of coded interactions for her chat to directly / 'bodily' interact with the live-stream (Figure 6)

As one may easily imagine, including the options of 'Blinding Miko' (creating an overlay over her game so, she cannot see what she is doing in-game for five seconds) and 'Jump Scare' (one second overlay of a scary face, accompanied by a loud scream) allows for substantial disruptions of the stream by the viewers without Miko being able to mediate them mid-stream. While such disruptions were a common occurrence throughout the entire gaming-stream, the sequence we selected for detailed analysis represents a high-point for stream-interrupting / sabotaging: Within four minutes of gameplay (centring around the 'Urias' boss fight), Miko was blinded twelve times and jump-scared three times, leading her to the escalating statements "[...] guys, stop, I

3:56:28   **DannyDracarys88**: This is so cruel
but interesting

3:56:29  **singuwularity**: you guys are so mean

3:57:08  **DrewzThunder**: we're just balancing
out the aim-assist PepeLaugh

3:57:21   **doritosburger**: I mean you did this to
yourself miko you can't give thousands of
strangers on the internet access to
something and think it won't be abused


Figure 7. A selection of chat-contents during the boss-fight.

try to fight! [...] Guys, stop it! [...] God damnit you guys, this is not hard mode right now! [...] Fuck you!" (3:54:53-3:55:26).

From a purely cooperative perspective, it is not apparent why 'chat' would decide to make Miko's gaming experience more difficult than it needed to be. However, when considering the previously introduced concept of 'unfinishedness', it seems that the combination of affordances introduced by game-specific, coded interactions (Figure 7) and possibly a sense of Miko having chosen too easy of a difficulty-setting for the game (see viewer comments below) lead to a scenario where additional tensions were introduced as a response to a perceived unfinishedness throughout the stream.

The tensions introduced by the chat by means of directly bodily / coded interactions (and one viewer poll) made this boss-fight much harder for Miko than it would otherwise have been. Only when – despite those additional challenges – Miko was able to complete the boss-fight successfully, the excessive disruptions stopped. On an abstract level, coping with these tensions (both in verbal acknowledgement by the streamer as well as embodied in the gameplay) seemed to be the way back for Miko from a state of 'unfinishedness' (here, possibly as a lack of difficulty in the game) to an equilibrium between 'expected disruptions' like the occasional blinding, etc. and streamer autonomy. From a viewer/participant's perspective, this type of stream is even more complex to interpret than previous examples: Not only do participants need to consider the interplay between 'Chat' and (here) Miko in terms of who says/writes what and therefore reflect on their own

interpretations as challenged by this interplay, means of participant-integration beyond (live) comments (such as the direct-bodily interactions above) also have to be made sense of. In this case, watching CodeMiko-streams is an exercise in discovering means of participant-integration and understanding under which circumstances and how they are being made use of by participants. In comparison to the first and second case above, the role viewers take on here could be described as that of media-experts that are not 'just' participating in a collaborative video-format but are implicitly asked to navigate a very complex web of means of user-integration and the implicit rules of when which form of interaction is allowed or – such as in the case of the Urias boss fight – apparently even called for.

Re-integrating IOPVs: From a live-format back to temporally disconnected sensemaking

As a fourth and final case, we chose an example from a category of videos that has been very popular for several years, the reaction video. Unlike the first wave of reaction-videos on YouTube, 'back in the day', what sparked our interest in this case are the specifics of how an integrative video-format such as a live-stream can, in turn, be re-integrated into other forms of integrative content, like comment-able YouTube-videos. As such, this case transcends the previous cases as it is a study into how 'integrating the already integrated' is possible in the context of participatory video-creation.

As the name of the format 'reaction video' indicates, the

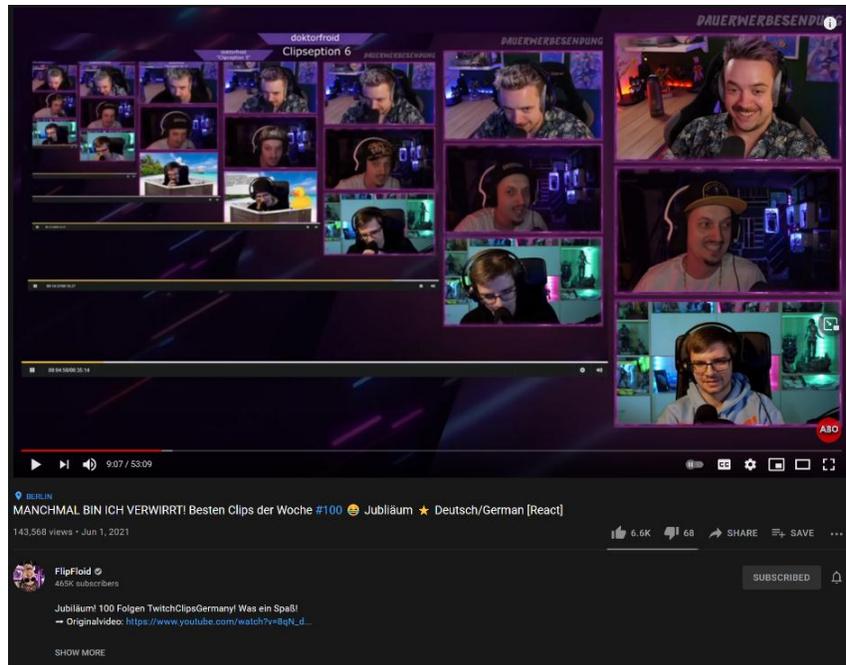


Figure 8. The integrated, integrated, integrated OPV.

theme of it is to react to something else, most of the time other videos or - in this case - to stream-recordings.

Those reactions are commonly recorded live and mostly uncut, to be able to provide the audience with a reaction to the given content that is as genuine as possible. It seems to be for this reason, that most of the currently circulating reaction-videos are actually recordings of live-streams in themselves. This format of live-streams offers a few rather important advantages: On one hand, it is possible to react to a form of content and simultaneously interact with the chat, thereby creating a shared experience of reacting. On the other hand, streaming one's reaction to a live audience further strengthens the notion of authenticity and genuineness of the streamer's reaction. This enables the creators to further play with the format of reaction-videos by implementing, for example, so called "try not to laugh challenges" when watching presumably funny content. In order to win this challenge, one has to be able to verify that one has not laughed while watching. Therefore, the live-stream inherently offers a number of judges and witnesses in the form of the chat.

Our specific example is the recording of a live-stream that was streamed on the Twitch-Channel "DoktorFroid"^x, which is run by the same three creators as "FlipFloid". It is a 53 min long extract from the original live-stream and otherwise not edited in any way. During the stream, the three streamers reacted to a video, uploaded by the German channel "Twitch Clips Germany", in which the original creator created a compilation of funny snippets

from live-streams of German streamers that occurred the week before.^x

In a nutshell, the three men of "FlipFloid" react to a compilation of funny moments from live-streams, while streaming live themselves. This stream is then being cut into a video and uploaded on YouTube. Here, the integrated character of IOPVs is taken to its extreme: Streamers react to their colleagues and their interactions with their audience, which have been recorded, cut and compiled in a video, while being live themselves and interacting with their audience. This whole reaction-process is being recorded and then uploaded as video again. This example shows how strong and essential the aspect of integratedness and the resulting implementation of tensions between streamer, stream and audience in IOPVs can become.

As an allegory for this integrated character of IOPVs (Figure 8) we present one very specific moment from this example. It occurs approximately around 9:05 and lasts only for a few seconds. We see the three men through their face-cams on the very right side of the video, the compilation they are watching is in the centre of the screen. At this point in time, a strange sight occurs: The three men see themselves reacting to themselves, reacting to themselves, reacting to themselves, reacting to themselves. While this is very confusing at first, it actually illustratively shows, what we mean when we talk about integrated IOPVs. To clarify: The video we chose is not the first time "FlipFloid" has reacted to one of "Twitch Clips Germany"s videos during

a live-stream. In one of their reactions they randomly started to hum and mumble rather incomprehensible noises in their microphones. “Twitch Clips Germany” found that so funny that he included their humming in the next compilation. “FlipFloid” reacted to that again and repeated their humming in their live-reaction, trying to copy what they did the last time as accurately as possible. This was again included in the next compilation to which they reacted by copying. The whole process was repeated five times which produces the result shown in the screenshot.

What this example shows is a re-integration of an already in itself integrated OPV. “Re-Integration” in this context means that an IOPV, in form of a recorded live stream, is (here) then again shown in a live-stream setting, by watching and (in this case) reacting to it, thereby integrating it in the newer stream. In other words: An integrated video-format is integrated again into the participatory format of live-streaming and is afforded new possibilities to interact with (for the streamer as well as for the viewers). We use the term ‘re-integration’ to sensitize for the continuous re-cycling, ‘clipping’ and re-connecting to ‘already integrated formats’ in other, overarching formats. While the case we chose surely is a bit on the extreme side of this integrated integration, it stands exemplary for the trend to re-use IOPVs and add an additional layer of participant-integration on top of them. While this commonly takes the shape of live-streams being cut / ‘clipped’ and uploaded to websites such as YouTube, quite frequently, Twitch-streamers commonly re-integrate those formats in their IOPVs as well.

IOPV-VARIANTS AS NEW PARTICIPATORY MEDIA

In this paper, we analysed variants of Integrated Online Participatory Videos in terms of the community-integration-practices they afford. By contrasting existing work on video-ethnography, video interaction analysis and the analysis of online participatory videos, we showed how IOPVs bring together elements from all of these traditions, creating a participatory format that both serves as a data-type for ethnographic work – providing accounts of how participants make sense of such video-formats - as well as a means to drive collaborative content-creation. In this context, the three variants of IOPVs we identified give a sense of the layered nature of IOPVs and the ways in which communities are bound up in their creation. From post-hoc suggestions on how to improve contents at hand all the way to direct ‘intrusions’ into live-streams, it is this heterogeneity and variety of participant-integration that affords creative moments and, overall, the emergence of highly inclusive community work in these virtual spaces. Additionally, we presented a fourth case that showed that (live) IOPVs are not necessarily ‘how the journey ends’ but instead can be re-configured toward new forms of viewer-participation.

Throughout the first three case-studies, we investigated the relationships between ‘bodiliness’, ‘unfinishedness’ and the role that ‘productive tensions’ play in the creation of IOPVs. We identified that the display of unfinishedness, be it through implicit (for example, Miko choosing too easy a difficulty) or explicit accounts (for example, Snappy admitting to not knowing the chain-stich) creates affordances of unfinishedness for viewers to participate. This ‘invitation’ goes hand in hand with the concept of ‘productive tensions’: In contrast to Martins (2019) work on what we would consider IOPVs, participation is driven not only by peaceful and, in a sense, streamlined viewer-integration but thrives off divergences in expectations and in spontaneous interventions into live-settings.

Furthermore, we demonstrated how, throughout our case-studies, participants are expected to make sense of not only what the streamer does at a given point in time but how it relates to the sensemaking-practices of other participants. Here, we regard participants not only as parts of a specific online video culture, but as video-experts in themselves (Tuma) and therefore suggest to view them as lay-ethnographers rather than mere participants.

COLLABORATIVE RESPONSIBILITIES AND THE FUTURE OF IOPVS

As a little outlook, we would like to draw your attention to a further opportunity for inquiry that addresses ethical issues associated with the responsibilities in asymmetrical, situational participatory formats. While examples like our first case-study (the ‘chAIR’) are rather clear-cut in terms of who is responsible for each type of content (the video-creator being responsible for the video, participants being responsible for their comments), with increasing directness of viewer-integration, this line is continually being blurred. While, in practice, the video-producer is still held primarily responsible for the content being co-produced when it comes to TOS (terms of service) -violations, the negotiation of these responsibilities increasingly becomes a part of IOPVs themselves. For example, this may take the shape of streamers reminding their participants of what is and is not considered TOS-friendly or participants testing the waters by provoking with potentially problematic contributions. This interplay becomes particularly relevant to those IOPVs that feature direct, ‘bodily’ means of viewer integration, as – in this case – the ways in which a streamer may react / intervene are necessarily highly restricted and boundaries of what may and may not be considered acceptable behaviour needs to either be agreed upon beforehand or needs to be moderated either by explicit moderators (people that co-participate but may intervene when something goes wrong) or by additional technological infrastructures such as limits on how often/

how a given interaction may impact the stream. The latter approach is however necessarily limited as IOPVs live off the spontaneous and original interactions between streamer and audience and, as such, it seems like creative participants will always find a way to bend or break the rules of TOS-friendly streaming, one way or another. Therefore, it is exactly the dynamic and open collaboration between streamer and participants that is this video-format's biggest advantage and biggest potential issue at the same time: Such collaboration allows for unique and entertaining interactions but also allows for misuse and potentially problematic participant-action. Maybe it is this very interplay and the negotiation-processes that underline it that makes IOPVs such interesting formats.

Looking into the future, it is not a stretch of imagination to assume that the means of interaction between streamers and participants will become increasingly complex – What started off as retrospective commenting has, as shown above, already evolved into more direct means of affecting a video-stream in real-time. Especially considering advances in augmented reality and, more broadly speaking, the blurring of lines between virtual and concrete worlds (Shields, 2005), it seems like it's just a matter of time before new means of stream-participation arise. When V-Tubers (such as CodeMiko) first entered this participatory format, it changed how we thought about live-interaction in the first place. We (the authors) are very much looking forward to what new means of participant-integration streamers will come up next and to see them challenge the classification of IOPV-variants we introduced above.

CONCLUSION

Finally, while this trend in increasing complexity primarily concerns the video-content at hand, we would also like to sensitize for advanced means of conducting ethnographic research on such new emerging formats. Throughout this paper, we took on a rather passive, analytical approach, which served us well in providing a typology of IOPVs. Still – being participatory formats – it is not a stretch to imagine researchers setting up their own stream to further investigate streamer-participant-relationships or to actively 'intrude' into other streams, creating little crisis-experiments to test the waters of what is and is not possible in this weirdly amazing world of collaborative video-production.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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ENDNOTES

ⁱ ‘V-tuber’ is an umbrella term for streamers that stream in a virtual environment. In contrast to ‘normal’ streamers that are situated in the non-virtual world (for example, somebody streaming from their house or room), V-tubers oftentimes take on virtual avatars and stream those avatars and their interactions in virtual environments.

ⁱⁱ For Example, see: <https://gamerant.com/stream-shock-electrocute-sushidragon/>

ⁱⁱⁱ A live-streaming platform for erotic content; Portmanteau of ‘to chat’ and ‘to masturbate’.

^{iv} Being a form of ‘new media’ (Siapera, 2017), we hereby focus on the specific social interactions that this video-type, the IOPV, affords.

^v Referring to this technical understanding of integration – like, for example, technical circuitry -, our goal is not to facilitate a specific mode of integration, for example between a pre-determined set of actors, but to describe the assemblages that emerge throughout IOPVs on social media platforms.

^{vi} Tuma suggests to first divide the analysed video in sequences, which are then being studied in great detail with regard to the research question at hand. In order to generate knowledge about factors that are

consistent across specific situations, he then suggests to combine his video-analysis with ethnographic approaches which he then calls „videography“ (Tuma P.438). Here, we clearly can see a connection to what Schmidt and Wiese suggested in their paper.

^{vii} <https://www.twitch.tv/snappyinc>

^{viii} CodeMiko frequently interviews various guests like other streamers on her stream.

^{ix} <https://www.twitch.tv/doktorfroid>

^x This habit of re-using stream recordings may be understood as a given video’s ‘career’ within the online video culture, as defined by Schmidt and Wiese in their work.

Full Length Research Paper

The transformation of media economy paradigm based on time value and decentralization

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As an important underlying structure of the Internet and economy, the media economics is undergoing structural changes. It is in urgent need of a more original and forward-looking academic vision and theoretical framework to refine its basic problems to study and solve more challenging practical problems in a larger picture. First, this study critically analyzes the current serious problems of media economics basic problems and the absence of necessary unified value scale. Also, the study discusses how to construct a unified value scale of media economics based on time value theoretically. The reason is that, time value could completely reflect the production and consumption process of media content products better than monetary value, which is much closer to human culture and spiritual life in reality. Under the limit of life length, time value is also much closer to the absolute or final value transaction which contains more complex forms and laws of value transaction. Furthermore, it discusses the theory frame of multi-dimensional value analysis on media content products and how to elaborate the dynamic evolution mechanism labeled by deceneration according to the relative changes of organization cost and transaction cost, in order to promote the paradigm innovation of media economic research.

Key words: Media economics, time value, platform economy, paradigm innovation.

INTRODUCTION

Media Economics (also known as medium economics) is a cross-disciplinary discipline formed by the application of economics to the field of communication (Alexander et al., 2003), and the object of study is mainly the economic issues related to communication and media. Theoretically, media economics draws on the research methods of economics, communication and management, and has gradually developed some unique theoretical paradigms and analytical methods (Singh and Cui, 2012). Based on critical analysis, this thesis argues that media

economics lacks the core issue and the necessary unified theoretical value scale in its development process as an independent discipline. It is possible to construct a unified theoretical value scale based on the time value because time value is much closer to the spiritual and cultural life of human beings and ultimate value transaction in reality with more complex forms and rules than monetary value. On this basis, media economics can establish a theoretical framework for multi-dimensional analysis of the value attributes of media content products, and

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according to the relative changes of organizational cost and transaction cost, it can expatiate the dynamic mechanism of innovation and iteration of media economics research paradigm and the gradual development path of decentralization.

LITERATURE REVIEW

At the present stage, the media economics marked by increasing marginal efficiency (Young, 1928) and super-scale sharing-model monopolies (Zhou, 2011) is characterized by platform economy and two-sided market (Rochet and Tirole, 2003) has been fully penetrated into all areas of human society. At the same time, the media content products as a special 'time consumer goods' with the rigid constraints of scarce resources, 24 h a day equally for everyone, presents the property in the form of ultimate value in some ways and the unique value scale to compare and analyze the transaction between the diverse content products, different forms of media and non-media organizations. Therefore, time value is the most important value form and theoretical scale in media economics.

At the same time, the Long Tail economy based on super-scale sharing -model monopolistic platforms (Anderson and Gabszewicz, 2006) is accelerating to breed more diversified business innovations. It is a very good case of live online-shopping bred by WeChatⁱ and Tik Tokⁱⁱ, which plays a very important role in the special social decompression caused by COVID-19. Those new media economy creations with the media economics has become a great power in the contemporary human society economic system and an engine of social change. It's distinct advancement and pioneering is worthy of further study.

The study of media economics follows the rapid development of media technology and maps the changing track of technology. Albarran (2019) reviews the history of media economics and divides the development of western media economics into four typical stages according to the corresponding technical forms: media economics research on printing, television, and film as main objects (1950-1975).

Media economics was first originated in North America and Europe in the 1950s, when economists applied economic methods to the management and economic problems of media enterprises. Early research was mainly devoted to the study of newspaper competition (Ray, 1951) and broadcasting industry structure and regulation (Coase, 1950a, b). Most of the early studies on media economics were fragmented and did not form a complete system. Their areas of concern were not only the economic problems of media enterprises themselves, but also include ownership (Nixon and Hahn, 1971; Sterling, 1975), regulatory policies and laws (Owen, 1975), advertising and consumption (Telser, 1968;

Nelson, 1974), media political economy (Schiller, 1969), etc.

Research on media economics with cable and satellite TV as main objects (1976-1995)

Due to the commercialization of media and the increasing cost of content production and licensing, media companies moved towards acquisitions and mergers, and most media industries begun to consolidate, followed by studies on media concentration, which attempted to quantify the level of concentration within and across the media industry (Bates, 1993; Albarran and Dimmick, 1996). During this period, the theory on the basic issues of media economics was more refined: Picard (1989, 2014) systematically elaborated the duality of media products (Dual Goods). Media products and services have a complex duality that is they are both artistic and commercial, serving both audiences and advertisers. The latter two have quite different needs, often leading to conflicts of multiple objectives.

Research on media economics with theme of the transforming from traditional media to new media (1996-2010)

It focused on how a general company-level approach can be applied to the study of media and communications companies. It explored the differences between the two in terms of corporate mission, strategy, organizational choices, and other business decisions. Albarran (2019) identified five major developments that have affected the media industry during this phase: the transition from analog to digital media; the rapid growth of the Internet and digital platforms; the emergence and popularization of smartphones; the rise of social media; and the introduction of streaming media. The continuous technological revolution drive the rapid development of technology-driven media enterprises (Apple, Facebook, Amazon, etc.), which aroused scholars from all over the world to the universality of media economics research, among which a considerable part of the focus was on the most urgent practical problems, that was, understanding how the development of these new technologies affected the integration and development of traditional media and related industries (Rawolle and Hess, 2000; Lawson-Borders, 2003).

Media economics research based on platform media and mobile media (2011-Present)

As the Internet and new technologies are deeply embedded in the media industry, the comprehensive popularization of mobile Internet, the accelerated iteration of smart devices (smart phones, tablets, wearable

devices, etc.), the development of 5G, VR/AR, IoT technologies, artificial intelligence and other technologies, media has transformed from an industry to a social infrastructure, at the same time, the research scope of media economics has been greatly broadened. Digital technology has made it possible to “platformize” infrastructure and “infrastructurize” platforms, researchers like Plantin believed that Google is both a platform and a social infrastructure (Plantin et al., 2016). More questions about media economics around “platform media” or “media platforms” also arise. For example: How do platforms affect researchers and scholars’ understanding of traditional media markets and industries? How will these new innovations further affect consumers’ attention and consumption habits? How will the business model evolve? What new theories and methods are needed to conduct research in this constantly evolving technological environment? What about the regulation of media platforms, privacy and security issues? (Nechushtai, 2018; Voramontri and Klieb, 2019; Jullien and Sand-Zantman, 2021).

Scholars, Cunningham and Flew (2015), summarized five new trends in the media economy in the era of platform media: the generalization of converged digital media platforms across all media; the growing interest in the socioeconomic value of networks; the disruptive impact of digital media technologies on traditional media business models; the rise of mass user-generated media content (UGC) on social platforms and the need to redefine the nature of media audience/consumer. The growth of creative industries policies and programs that focus on media and cultural departments as important sources of social wealth creation and economic innovation. In short, from the development context of Western media economics, the structural changes in the media economy driven by new technologies have not only greatly broadened the scope of media economics research, but also brought a strong impact on the basic paradigm of media economics.

In the traditional media economic system, dual product attributes are the basic attributes and rules of media value: media sells content products to consumers (readers, TV viewers, Internet surfers, etc.) and sells advertising products to advertisers at the same time; thus, the media benefits from the above two media products. The audience/consumers are lack of proactive choices, such as the proactive choice of broadcast content, broadcast time, broadcast order and also the advertising. Similarly, it is difficult for advertisers to effectively select the target audience. Instead, they strive for the most audience at a higher cost. Those value attributes and transaction patterns lead to the lack of necessary diversity and personalized content in the media economics (Anderson and Gabszewicz, 2006), so the intermediary and coordinating role of traditional media enterprises as “platforms” is not as prominent as the real platform media is today, like Facebook, Wechat and

Google etc.

In contrast, the platform media companies in a new technology ecosystem further develops their dual product nature into a bilateral market. On the basis of the achievements of Jean and Jean-Charles (2003) and Lindstädt (2010) tried to further explore the possibility of applying the bilateral/multilateral market theory in economics to media markets. The article pointed out that the traditional media economics methods also identifies two related markets for media companies—the advertising market and the audience market—by defining the relevant markets (which is also the scope of the discussion of traditional dual product attributes). However, in the past, the two markets were defined and analyzed separately and were not sufficiently linked to each other. The bilateral market theory emphasizes that the two markets are interdependent due to potential network externalities. The audience and the advertising industry are interrelated, and as the media’s platform attribute continue to become prominent and user sovereignty expand, the interrelation continues to rise. However, the two follow different goals and must be coordinated by media companies (platforms) in order to complete various transactions, thus forming bilateral (or even multilateral) markets. In recent years, many scholars of media economics have analyzed and solved various economic and managerial problems in media enterprises and media industries from the perspective of bilateral/multilateral markets (Evans and Schmalensee, 2013; Guo and Lai, 2014; Jia et al., 2019).

At present, there is still not a sufficiently broad academic consensus on the basic concepts of media economics itself and the fundamental issues of its research, which began in the 1950s, in both traditional and new media ecologies. Most of the relevant information available stop at the phenomena and influence of media economics, rather than the basic issues and concepts.

MATERIALS AND METHODS

Basic problems of media economy from the perspective of time

According to Albarran (2019), as a field of study, there is more interest in the field than ever before. On the other hand, there has been little progress in the way of theory development of media economics for many years. The development of new technologies and media platform provides new opportunities for media to provide personalized services, utilize digital content stock and the dynamics of social media. At the same time, it calls for the innovative development of basic issues and paradigms in media economics.

Basic issues of media economics: The theoretical perspective based on the value of time

In Chinese academia, the generally consensus is that media

economics is built on different economic theories and analytical methods dedicated to the study how economic and financial forces affect media systems and media organizations. Another general consensus that coexists with it focuses on the specific attributes of media content products, which are considered to be different from general industrial goods and general commodities and have strong non-commercial social attributes. However, how this special attribute is reflected in the general law of media economics has always stuck in the academic vision of economist Ronald H. Coase nearly a century ago, and no significant progress has been made. Coase won the Nobel Prize in economics for his book *The Nature of Firm*, which answers the basic question: "Why and under what conditions should we expect firms to emerge?" Coase's answer was that when the transaction costs (social costs) of solving the problem of value production by the market using the price mechanism are higher than the organizational costs (private costs) of producing value through collaborative management within the enterprise, the enterprise will inevitably emerge. This is also known as Coase theorem. Coase became the founder of new institutional economics and legal economics with this theoretical basis. Since then, he has published two other masterpieces, namely in *Radio and Television Broadcasting Journal of Law and Economics* (1950) and *The Federal Communications Commission Journal of Law and Economics* (1959). Both of these works are trying to extract and answer the important questions of media economics from an economic perspective, namely how did a natural monopoly in broadcasting come into being? How does legitimacy manifest itself? To a certain extent, Mr Coase's three aforementioned books can be regarded as a relatively complete and enlightening prototype system of media economics theory, which indicates that we should explore more essential questions such as why does the media exist and What special value attributes does it have? These important questions, similar to those in *The Nature of the Firm*, together with Coase's original study of the Federal Communications Commission and the American broadcasting industry, led Ronald Reagan. Coase become the founder of media economics. The research direction he opened up for the study of media economics gave it necessary characteristics to become an independent subject.

Nowadays, the development of 5G, blockchain, artificial intelligence and other technologies have brought the media economy into an accelerated transformation period. Media economists are faced with more urgent responsibilities and missions to deeply explore and extract the fundamental issues of the media economy in order to better explore the future path of the development of the media economy.

A straightforward interpretation of why the media exists is based on Coase theory, namely due to the production and dissemination of media content products, there are relatively high market transaction costs (or fees), and when the media (media enterprise, utility-type media or We media) production and dissemination of the contents of organization cost is lower than the market transaction cost, the media must exist. Otherwise, when the market transaction cost is lower than the internal organization cost of the media, the media will change its existing form or even disappear. So, what is the value criterion or the measure scale of the change of form? In other words, what is the internal logic and value law of the media that changes its form or is replaced in order to reduce organizational costs? A further question is: when social and platform-based media continue to expand, the market transaction costs (social costs) and the internal organization cost of the media increase and decrease in the same direction and continue to narrow the gap, especially at the same time and infinitely approach to zero, will the basic issues and research paradigm of media economics change? How will it change?

To study and answer these questions in-depth, we need to abstract and refine a theoretical fulcrum based on the value of most users and have the most extensive value applicability for the media economy, which can summarize the main value phenomenon and

value law in media economy and is conducive to a more accurate and more profound description for basic questions and the basic definition of media economics.

The authors believes that one of the greatest characteristics that distinguishes media content products from industrial products is that content products are time-consuming consumer goods, that is, the production, dissemination and consumption process of media content products are highly related to the time value.

The application of time value in media economics can be traced back to 1995. The American economist Goldhaber (1997) proposed that the new economic model brought about by the Internet should be called "the attention economy" rather than "information economy", because information is not a scarce resource in the Internet era, what is truly scarce is the attention of consumers. The media's competition for consumers' attention is essentially the competition for their media usage time. In Western media economics research, Albarran and Arrese (2003) compiled *Time and Media Market*, which contains 9 articles on the time value, emphasizing that time production is a limited and important resource for the media market. For the first time, the value of time in the study of media economics was elevated to a theoretical level. Both the production and consumption stages of media products are greatly constrained by the time factors. Their differences are not only in time elasticity –which is somewhat persistent as far as consumption is concerned- but also by other time factors that affect their production and distribution (Albarran and Arrese, 2003). Albarran and Arrese (2003) believed that time should be an important issue of media economics while it didn't get enough attention and scholarly examination at that time.

In the era of platform media, time has attracted more researchers' attention as the core attribute of media products. With the rapid rise of platforms, the competition for consumers' "exclusive eyeballs" among media is rapidly intensifying. Compared with traditional media, the platforms can draw more accurate pictures of consumers, thus providing more accurate advertising and gaining more advantages in advertising pricing (Anderson et al., 2018). Picard (2003) made a supplement to the attention economy of media: Today's competition among media companies is driven by the amount of time and money consumers spend on media, and the focus of the competition is on the two cores of the attention economy and the experience economy. The former lies in the media, marketers, politicians and others competing for consumers' limited time, while the latter is based on the idea that media companies need to organize satisfying and memorable experiences for consumers to generate loyalty and repeated engagement.

At the same time, the scope of media economics on the time value is also expanding, and the research on time value is no longer limited to the "attention economy" or the media's competition for the allocation of time. Information scheduling efficiency of the platform (Kanuri et al., 2018), platform's control of personal time of the (Wajcman, 2019), real-time information processing and decision-making of (Jabbar et al., 2020), users' media usage efficiency (Leftheriotis and Giannakos, 2014; Song et al., 2019) and other research topics related to time value have attracted more attention and consideration from researchers.

However, after the emergence of online platform media and bilateral market forms, the value of time can be effectively linked to users, media platforms, and various platform application design groups, and reasonably eliminate the non-essential differences between different content products such as news, firm and entertainment, information products, and different media forms such as TV, radio and Internet, and integrate them into a value whole organically. In fact, when we pay attention to and talk about the secondary transaction of content products, distribution efficiency, and user utility in the media economy, they all involve the usage and consumption of time. In other words, the value of time is intertwined in all value chains links of the media economy. However, because we have not raised the value of time to the

theoretical level of the special value form of media economics to considerate, the research on media economy has always lacked necessary and unified value scale or value currency, and has been reluctantly applying the value scale in general economic theory, and is trapped in the research paradigm of industrial economy. As a result, it is difficult to conduct direct and sufficient comparative research among different media forms, different communication forms and different content products. Moreover, it is also difficult for media economy and other industrial economies to truly synergize, leading to the evolution and innovation of the paradigm.

In this study, we set the basic problem of media economics as how to achieve the maximum user utility of information dissemination and interactive communication with the least time and the highest efficiency. In addition, the value objective of media economics is revised from "optimal" to "relatively good" in order to be more in line with the "bounded rationality" of economic human design.

Constructing a unified value scale and value system for the media economy: The currency of time

With the unified theoretical scale of "time value", we can deeply explore the important and special phenomena and problems in media economics. To the majority of the public, news is neither a rigid necessity nor a general consumer product, so, for a long time "news" has been regarded as a classic media content product, but it is not a typical tradable and priceable product (Marx, 1847; Lidan, 1986). Typically, it is either "headline news" under the specific unit price mechanism or "news agency mass production news" under the undifferentiated wholesale pricing mechanism, because news is based on the continuous extraction of the largest common divisor of recent social facts, in order to construct and consolidate the macro value system of a specific society, maintain normal social metabolism, and provide the necessary basic social order. This is far beyond the scope of the value attributes of the general industrial products and industrial economy, and it is also difficult to measure in terms of normal monetary value.

Of course, it is undeniable that news has a strong bearing function for commercial information such as advertisements in the process of mass communication, so that it has tradable commodity value and commercial attributes, therefore, people use the theory of "secondary transaction" as an intermediary, and directly borrow "currency" to understand and study the value transaction in the field of media economy, or use the idea of separating social value and economic value to separate monetized transaction and non-monetized transaction in the field of media economy. The idea of separating social value and economic value will be used to divide monetized and non-monetized transaction in the field of media economy into two.

In fact, the use of "currency" as the value currency of the media economy makes it impossible to explain many phenomena and behaviors of media economy that are not monetary transactions. Moreover, the sharing economy and bilateral markets brought about by digital network platforms have shown us that more and more mainstream facts and future trends of the media economy are beyond the scope of monetary transactions. More than ever, we need a unified value scale to synergize the old pattern and new forces in the field of media economy, so that more objective economic facts can be theoretically explained and reasonably predicted, and to gradually construct an innovative theoretical framework and research paradigm with deeper and wider explanatory power and applicability.

The digital online media under the time perspective, especially platform-based Internet media under the super-scale monopoly structure, creates a realistic opportunity for people to intuitively observe and analyze the special characteristics of media economy, namely how to intermediate the value of time to accomplish large-

scale and multi-form value transactions in the media economy, including: monetized and non-monetized transactions. Examples of transactions in which users pay more time to view commercialized information as an alternative to replace monetary transactions are widely available; market-based and non-market-based transactions. A typical of non-market-based transaction is the large number of self-produced programs and their internal transactions in the media industry. The increasingly prevalent personalized customized content service is personalized transactions; equivalent and non-equivalent transaction. Platform medias take advantage of economies of scale and information asymmetry to obtain users' personal data for free and then apply it to paid media products, which is a widespread non-equivalent transaction; futures and spot transaction. The "membership" trading model on major video platforms, especially monthly, quarterly and annual members, is a kind of futures transaction in the media economy: wholesale and retail transactions. The "multichannel television service" provided by cable TV networks are a wholesale transaction, while the "on-demand service" on video websites is a retail transaction. Of course, the above are relatively more normalized and important transaction forms, there are other forms of value transactions, which can also be completed with time currency, because time is owned by everyone, and like life, it has the same absolute finiteness and scarcity of value carrier. In a sense, its uniqueness, irreplaceability and limited transaction nature are not possessed by currency, and it is a more complete and advanced form of value transaction.

RESULTS AND DISCUSSION

Value system and structural gradual change in media economy

In addition to the intuitive value transaction analysis, the time value scale can also help us observe and analyze a large number of important value attributes and their value laws that are not directly related to value transactions in the media economy.

Analysis system of media content products based on time value

Firstly, the special value attribute completely and directly affected by time value is used to analyze the synchronic and diachronic characteristics of media content products in the consumption process, especially the relative or absolute rigidity of content products in the consumption of time. Secondly, the general value attributes completely or indirectly affected by time value is used to analyze the effects and influences of media content products on users in the process of communication and consumption. It mainly includes:

The value externality brought by the attributes of media content products

Media products of different categories, especially news content products, bring uncertain value externalities to both individual users and the society as a whole. For

example, the news of real-time data of COVID-19 prevention and control, which helps to alleviate public anxiety and fear, shows some positive externalities. However, the financial crime news which contains many specific details may induce the potential financial crimes and show some negative externalities.

The value ambiguity brought by the attributes of media information products. Because the content products themselves are made of the specific information, all the different categories of media content are a kind of information media content products. Their economic value and social value, as well as a blend between them, are difficult to distinguish effectively, and when people pricing and trading based on their economic value, they tend to find the profound influence of social value of media information product. While this influence is difficult to clearly and precisely reflected in pricing and transaction, showing a high degree of ambiguous flexibility. For example: financial news and information products that play an important role in the capital market.

The value lag brought about by the attributes of media experience products

As a typical experiential product, media products are characterized by content product value that is non-standard and lagging due to user's perception which only happens after spending time on products. Advertisement is a very typical media experience product with value perception lag.

The uncertainty of utility brought about by the attributes of media public goods

Public goods or quasi - public goods are the basic attributes of media content products. However, due to the value perception lag and negative externalities, both the personal utility and the social utility of media content products as public goods will have great uncertainty. For example, the algorithmic recommendation of news media on various platforms, as a kind of implicit public product of media, causes information cocoon in the whole society, and thus brings a high degree of social utility uncertainty.

Conflicting goals brought about by the attributes of media culture products

All kinds of media products are cultural product because they have to deliver messages and comments by cultural symbol carriers such as letters, images, sounds and videos. Conflicts between the social value of cultural products as public goods and the economic value of cultural products as information products often occur. The typical example is the media products of culture and

education for elementary education. At present, a large number of online education programs for elementary and intermediate schools in China prominently exist such conflicts. Lacking necessary role differentiating management, these cultural and educational media products excessively dilute the high-quality resources of mandatory primary education and turn them into market-based resources.

The value of media copyright goods is not closed

Not all media products are copyrighted, even for those copyrighted media products, it is difficult to accurately identify the value form of copyright due to products' multi-meanings and various forms, so products' value can only be defined as a collection of values. For example, the copyright of a character modeling of a media product, including hair style, color and costume design etc. is feasible, but the texture and color matching of costume design can hardly be regarded as independent part of copyright. As a result, the non-complete or to say non-enclosed value form and power beam become a prominent and universal characteristic of culture media products. For example, "ghost-animal area" a large number of secondary editing and processing of short video on Bilibili website, a platform media in China, is a typical example, and it has even become a symbol of Bilibili's cultural brand. Each of the relatively independent and interrelated value attributes and their actual performance mentioned above is directly or indirectly related to time value. They are all worthy of further research, including the research on the differences of similar content products in different media forms and communication regions. They jointly construct the theoretical framework of media content product value attribute analysis and provide the necessary basic concepts and theoretical knowledge for media economics. In fact, from the perspective of time value, media economics, with the help of the unified scale of time value, can not only deeply study the relatively abstract and static attribute characteristics, but also can try to analyze the relatively concrete and dynamic structural gradient problems. Among them, there is a very important problem, that is, under the unified perspective of time value, using the relative change of transaction cost and organizational cost mentioned in the Coase Theorem, to study and explain the existence of media and how it will grow and change.

When organizational costs and transaction costs decrease simultaneously

Albarran (2019) study of traditional media found that the American media industry moved toward centralization during 1970s- 1990s. Under this background, media companies were able to engage in economies of scale

(reducing their cost of ownership) and economies of scope (reducing cross-industry cost structure). This trend coincides with "simultaneous reduction of organization and transaction cost" which is discussed in this thesis.

At this stage, platform-based media is the primary driver of the evolution and expansion of media economy, and the main logic is to gradually eliminate the need for centralized production and large-scale dissemination of information in order to achieve a simultaneous reduction of organizational costs of media organizations and transaction costs in the process of social dissemination. The paradigm of media economy research will be continuously innovated and iterated in this process until both of them are infinitely close to zero, finally realize structural paradigm innovation and paradigm shift based on social communication platform and same value of time, where each highly personalized network node has maximum communication benefits.

The platform media in this thesis refers to a social media based on digital network, with peer-to-peer interactive communication and social platform service as the core model and value-added driving force, achieve survival and profitability based on platform economy and bilateral market, have at least one socialized large-scale first-choice user portal and successfully achieve a user scale of over 100 million. The first-choice user portal refers to the first-choice interface where users contact and disseminates information, and it is not only used relatively frequently, but also has an entrance that accommodates and leads to other information interfaces. It could be an application or website, such as WeChat or Facebookⁱⁱⁱ, Baidu^{iv} or Google^v. It could be a smart hardware that combines content and software, such as an iPhone or Google glasses, a Tesla^{vi} self-driving car, or a DJI^{vii} drone. Baidu, Alibaba^{viii} and Tencent^{ix} in China and Facebook, LinkedIn^x and Google in the United States all are the largest user portals and are most representative platform-based medias in their home markets.

When the internal organizational costs of media organization change in the same direction as the market transaction costs, it means that media platforms are the main driving force behind a positive media economy, and they not only reduce the transaction costs of market-based division of labor and collaboration through social information dissemination and bilateral markets, but also reduce the organizational costs of content production and dissemination through technical assistance such as user content production and artificial intelligence. This will lead to a simultaneous reduction in transaction costs and organizational costs both inside and outside the enterprises, promoting the optimization of the media economy and the entire Internet + economic system, and enhancing the effectiveness and profitability of each participant.

Within this trend, we need to further examine the relative development speed of transaction and

organizational costs: If transaction costs decrease faster, the space for media to survive and grow will shrink, otherwise media will get more space to survive and development. If the two keep decreasing year-on-year, what does it mean to approach zero infinitely? Will it be a pan-industrial development of media, or will media gradually and completely disappear? Of course, when studying the simultaneous reduction of transaction costs and organizational costs, we cannot completely ignore the possibility of simultaneous increase, although it would mean a regression of the media economy. However, hegemonism and unilateralism, which were once in a state of intensification during the deterioration of Sino-U.S. relations, have further lead to technology blockades and restricted capital flows, which may simultaneous increases transaction costs and organizational costs in the media economy. When studying the above trends, we need to theorize the specific connotations and conceptual boundaries of transaction and organizational costs in the context of media economics in order to further explore the more complex non-same direction changes.

When organizational costs and transaction costs change in different directions

Technological changes have reduced the production cost of media products, connected consumers via the Internet, and expanded the market size, but this does not mean that transaction costs are also reduced (Anderson and Waldfoegel, 2016). On the one hand, the fixed (organizational) costs of media relative to market size continue to decrease with the development of Internet and platforms, and at the same time, media products contact with consumers is no longer confined to geographic locations and may mitigate the emergence of preference externalities. On the other hand, however, while new technologies reduce the production cost of basic products, media companies today need to compete for targeted consumers from all over the world, and reaching many consumers may lead to increased (transactional) costs.

Thus, due to technical, capital or institutional reasons, organizational and transaction costs inside and outside the media may show overall or partial changes in different directions, mainly including the following two situations:

Organizational costs decrease while transaction costs increase

Take the development of social networking platforms as an example. WeChat, which is developing in the direction of a fully functional platform, is an example of a significant reduction in organizational costs. Social media platforms represented by WeChat have made a fusion

and continuous structural innovation of conventional interpersonal, intergroup and mass communication, and constructed a new communication field where public and private intermingle and complement each other: a digitalized, networked public-private domain, thus organically combining government services in the public domain and personal financial services in the private sector, therefore, significantly reduce the coordination and organization cost of information production and dissemination within WeChat platform. However, the intensified competition among platforms has led to increased transaction costs of business users and individual users, for market-oriented selection, collaboration and migration between platforms, to the extent that the rule of law has to be adopted to curb unreasonable development or unjustified gains in the process of achieving super-scale monopoly by platform media, to prevent unfair competition and to effectively stimulate innovation.

Growth of organizational costs and reduction of transaction costs

Take the development of online video platform as an example. The online video platforms, which are continuously promoting the vertical integration of the value chain of the video industry, are all learning from Netflix^{xi} in the United States, and are trying to integrate all the value chain links, such as video creation, production, dissemination, distribution and consumption on one platform. To this end, Netflix has invested heavily in video production and content recommendation algorithms, reversing the ratio of self-produced content to outsourcing content from 1:9 to 9:1, while achieving a virtuous circle of content production and content consumption through constantly optimization of algorithmic recommendations, significantly reduce the market risk of the traditional video industry and improve the return on investment ratio. However, at the same time, as it has internalized a large amount of human and material resources for film and television production, organization costs are continuously increased. Will this trend lead to a critical point of deterioration, that is, for large-scale investment in content production, it is difficult to obtain matching high returns through highly vertically integrated platforms, but it will drag down or even bring down this type of highly integrated online video platform?

RECOMMENDATIONS AND SUGGESTIONS

Paradigm alternation and innovation: progressive construction of decentralized network platform

When we assume that organizational and transaction costs are infinitely close to zero as the premise of reality, we can prospectively discuss the paradigm alternation or

innovation of media economics research. with the infinite realistic premise, we found that the new media economy with "Internet +" as the underlying logic and main structure is in essence to distribute the power of information production and dissemination to every socially active individual, who can work together with entity institutions to establish a new type of continuous decentralized communication system and its economic form. Regardless of the specific practice path, its ultimate goal is "highly personalized custom economy", one of the most important necessary prerequisites is "to remove the denial and weakening of personalized demand from the source of the value chain one by one, namely continuous decentralization: the integration of de-marketing, de-technology, de-socialization, from the starting point of the high respect for individuality, reshaping the construction process of society. At present, we are still far away from this goal, but the possibilities are slowly gathering.

Paradigm reconstruction based on the return of personal data sovereignty: Decentralization based on micro level

At present, both personal data and socialized data are distributed in the hands of governments and enterprises, and not in the hands of users. This is a global fact, which is inconsistent with Coases theory of property rights in the new institutional economics, which states that clear property rights facilitate the optimal allocation of resources and the continuous improvement of efficiency. In other words, in the modern media economic system, the lack of clarity of property rights over large amount of personal data inevitably leads to inefficient, high-risk and widespread misuse of personal data assets. This is obviously not conducive to the sustainable development of the media economy.

China, a global leader in the online economy, is taking the initiative to promote the return of personal data sovereignty and allowing every user to own their own personal data assets as soon as possible. In the long run, it will be more conducive to the sustainable development and advantage expansion of China's media economy and even the entire Internet + economy. From a theoretical perspective, this means from micro-level of the media economy the process of decentralization or multi-centralization is fully initiated to reconstruct the traditional economic structure, with enterprises or the government as the core interest system, and to form a user-oriented new system of the media economy, as well as a new paradigm and new process of media economic research.

Paradigm reconstruction based on the economics of law: The de-homogenization of rule of law bases

As each individual user starts to have more and more complete data sovereignty, the privacy of personal data,

social dissemination and transaction methods of personal data, etc. no longer applicable to the uniform legal standards and legal basis. It is more reasonable for each individual user to define his/her own data privacy according to his/her own personal preferences, and to set the structure and boundary of personal data privacy at the specific application level with the assistance of technical tools. For example, some users believe that name and gender should be included in the scope of privacy, while some users are willing to make their measurements and home address as public data, and become public instead of personal privacy data. Traditional legal thinking and legal tools are unlikely to respect the individual will of each of them and tailor the structure and boundaries of personal data privacy for everyone. However, on the intelligent digital network media platform, it is entirely possible to realize personalized personal data transactions and management according to the different data privacy boundaries of each person in the future, and no longer disregard individualized differences and simply use a unified value scale as a legal basis and standard. In this way, it will undoubtedly bring about a paradigm reconstruction of media economics based on the perspective of legal economics: to reconstruct the value transaction mode and law of media economy based on highly personalized data sovereignty.

Paradigm reconstruction based on research methods: Network analysis based on relevance

With the advancement and universalization of the decentralization process at the micro- level the media economy and the gradual weakening of homogeneity in the mainstream law, the research methods of media economics will inevitably shift from the quantitative analysis around causality to the network analysis focusing on correlation. As each individual in the media economy will have the ability and opportunity to participate in the formulation and implementation of value rules, and use relevance as the main logic to form the macro value law of the media economy.

Conclusion

From a historical point of view, the development of communication paradigm has long been in a lagging state of empirical observation and summary, and is seriously far away from interpretation of reality. This thesis tries to explain and discuss the reality of media economy, but it should go further to explain the content product attributes analysis framework based on the time value, as well as the fundamental change of our society and economy in coming future brought by the new technologies of block chain and artificial intelligence, especially the effect of artificial intelligence for humanity

and ethics. Moreover, the paradigm innovation of media economics research will be affected significantly by the national system and cultural differences to some extent (Noam, 2009), and this is barely discussed here. McLuhan's great masterpiece *Understanding the Media* has created a wonderful example: not only explained the reality, but also explored the future theoretically. After a critical analysis of media economics, this thesis points out that the core issue of media economics in the new media technology environment is how to achieve the maximum user utility of information dissemination and interactive communication with the least time and the highest efficiency. At the same time, this thesis also proposes to construct a unified theoretical value scale based on time value and a theoretical analysis framework based on the value attributes of content products. On this basis, this thesis elaborates on the media economics research paradigm innovation and iterative dynamic mechanism and gradual decentralized development path according to the relative changes of organization cost and transaction cost in the media industry, focusing on the return of the sovereignty of personal data, the revolution of the law related to individual differences and the changes of research methods based on the correlation analysis.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interest.

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ⁱ WeChat is a free application for instant messaging services launched by Tencent on January 21, 2011. It supports cross-communication operators and cross-operating system platform services. Users can quickly send free voice messages, videos, pictures and texts through the network. Good access to shared streaming media profiles and location-based social plugins such as 'Shake', 'Moments', 'Public Platform', 'Voice Notepad' and other service plugins. As early as the third quarter of 2019, WeChat has covered more than 96% of smart phones in China. The combined monthly active accounts of WeChat and WeChat have reached 1.151 billion, up 6% over the same period last year, and the daily active accounts of small programs have exceeded 300 million.

ⁱⁱ TikTok as a social software for short videos of music creativity was incubated by Toutiao in September 2016. Launched on September 20, 2016. Now it is a social platform for short videos for all ages.

ⁱⁱⁱ Facebook was founded on February 4, 2004, headquartered in Menlo Park, California, USA. Facebook Messenger, a desktop chat software for Windows, was released on March 6, 2012. On November 12, 2019, Facebook announced the launch of Facebook Pay, a mobile payment service. In July 2020, the Forbes 2020 Top 100 Global Brands by Value was released, and Facebook was ranked fifth.

^{iv} Baidu is an artificial intelligence company with a strong Internet foundation. Its strategic vision is to become the world's top high-tech company that understands users best and helps people grow. "Baidu" originated 800 years ago from a poem written by Xin Qiji, a poet in the Southern Song Dynasty: "Baidu is a symbol of founder Li Yanhong's dream of using search engine technology to change the world. At present, Baidu has become a high-tech enterprise in China that has mastered the core technology of the world's cutting-edge science, and has made China, together with the United States, Russia and South Korea, one of the four countries that have the core technology of search engine in the world.

^v Google Company was founded on September 4, 1998 by Larry Page and Sergey Brin. It is recognized as the world's largest search engine company [1]. Google is a multinational technology enterprise based in the United States. Its business includes Internet search, cloud computing, advertising technology, etc. Meanwhile, Google develops and provides a large number of Internet-based products and services. Its main profit comes from advertising services such as AdWords. No. 2 on the list of the world's 100 most valuable brands in 2019.

^{vi} Tesla is an American electric vehicle and energy company. It was founded on July 1, 2003 by Martin Eberhard and Mark Tarpenen. Headquartered in Palo Alto, Tesla mainly produces and sells electric vehicles, solar panels and energy storage equipment. The strategic vision is to provide pure electric vehicles within the reach of the average consumer and accelerate the global shift to sustainable energy. On May 13, 2020, Tesla was ranked No. 586 on the 2020 Forbes Global 2000 list.

^{vii} Founded in 2006 by founder Wang Tao, DJI is a UAV brand owned by Shenzhen DJI Innovation Technology Co., Ltd. In 2012, it introduced the DJI Phantom 1, the world's first all-in-one aerial camera. On June 11, 2019, DJI was selected as one of the "2019 Forbes China's Most Innovative Companies". In December 2019, it was selected into the model 100 brands of the 2019 China Brand Power Ceremony.

^{viii} Alibaba Group Holding Co., Ltd. was founded in 1999 by 18 people in Hangzhou, Zhejiang Province, led by Jack Ma. It operates a number of businesses in multiple fields, including: Taobao, Tmall, Juhuasuan, AliExpress, Alibaba International Exchange Market, 1688, AliMama, AliCloud, Ant Financial, Cainiao, etc. On September 19, 2014, it was officially listed on the New York Stock Exchange, creating the largest IPO in history. On November 26, 2019, Alibaba listed in Hong Kong stock market, with a total market value

of over 4 trillion yuan, becoming the "new king" of Hong Kong stock. In 2019, it was ranked 10th in Forbes Global Top 100 Digital Economy.

^{ix} Tencent, whose full name is Shenzhen Tencent Computer Systems Company Limited, was founded in November 1998 by five founders Ma Huateng, Zhang Zhidong, Xu Chenye, Chen Yidan and Zeng Liqing. At present, it is one of the largest integrated Internet service providers in China and one of the Internet enterprises with the largest number of service users in China. Its diversified services include: Social and communication services such as QQ and WeChat /WeChat, social network platform Qzone, QQ game platform under Tencent Games, portal website Tencent, Tencent news client and online video service Tencent Video, etc. Tencent was listed on the main board of the Hong Kong Stock Exchange in 2004. In July 2019, it ranked 237th in the Fortune Global 500 list.

^x LinkedIn (LNKD), founded in May 2003, is a professional social network based in Sunnyvale, California. The site is designed to let registered users maintain contacts they know and trust through their business contacts. As of May 2020, the total number of LinkedIn users has reached more than 690 million, with more than 50 million users in China. In October 2019, Interbrand ranked No. 98 in the Top 100 Global Brands.

^{xi} Netflix (NASDAQ NFLX), founded in 1997, is a subscription streaming media company headquartered in Los Gatos, California. It used to be an online DVD and Blu-ray rental provider. Users will be able to rent and return a large number of physical DVDs from Netflix's inventory via free express envelopes.

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