

Why do people watch others eat? An empirical study on the motivations and practices of mukbang viewers

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ABSTRACT

We present a mixed-methods study of viewers on their practices and motivations around watching *mukbang*—video streams of people eating large quantities of food. Viewers’ experiences provide insight on future technologies for multisensory video streams and technology-supported commensality (eating with others). We surveyed 104 viewers and interviewed 15 of them about their attitudes and reflections on their mukbang viewing habits, their physiological aspects of watching someone eat, and their perceived social relationship with mukbangers. Based on our findings, we propose design implications for remote commensality, and for synchronized multisensory video streaming content.

Author Keywords

video streams; mukbang

CSS Concepts

• Human-centered computing~Human computer interaction (HCI)

INTRODUCTION

Video streams increasingly dominate internet data traffic. Popular video sharing services, such as Twitch and YouTube, generate a lot of traffic: Twitch has more than 15 million unique daily visitors [1], and one billion hours of YouTube videos are watched daily [19]. Video streams can either be recorded “live” using relatively low-budget media (i.e., a webcam) and streamed online using streaming media services, or they can be pre-recorded (i.e. not live) so viewers can watch them anytime. In these hosted streams, the streamer often narrates or discusses what is happening in the



Figure 1: Mukbanger *ThatCho* introduces a Korean snack to his audience during a mukbang video stream.

video, with topics ranging from video games, day-to-day, cooking, and eating.

One possible reason behind the popularity of video streams may be that the platforms enable social engagement. Hamilton et al. [15] observed that viewers of live gaming streams use these streams as a gathering place. Viewers share a common experience around in-game events, using the stream as a focal point for social interaction despite watching independently. However, it is unclear whether this observation holds true for other video stream content. Different genres of video may attract viewers with distinct motivations and viewing habits. Uncovering these genre-specific motivations and viewing practices could inform the design of new tailored viewing interfaces.

While prior video stream research has focused on video game content [13, 33, 44], we turn our attention to *mukbang*, a genre of video where streamers—known as *mukbangers*—devour food, frequently with high-definition audio of chewing, crunching, or slurping noises from the eating experience (e.g., Figure 1). Similar to video game streamers, mukbangers sometimes talk with their audience, commenting on the multisensory experience of the foods being consumed—its taste, its smell, its textures, in addition to its appearance.

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To understand the practices and motivations of mukbang viewers, we present findings from a survey of 104 mukbang viewers and interviews with 15 of the survey respondents. Our findings reveal that while most mukbang viewers watch alone and often during mealtimes, they do so for three relatively distinct reasons. Some seek a sense of connectedness with others, a finding consistent with prior work on video game streaming. Other viewers watch mukbang for vicarious pleasure of the multisensory experience, and still others watch purely for the performative spectacle. Addressing these latter motivations points to a need for video viewing interfaces that highlight or recreate multisensory experiences beyond visual and auditory modalities.

We make two contributions in this work. First, we contrast the practices and motivations of mukbang viewers with prior research on the social aspects of video streams. Second, we offer several design implications for video streaming experiences that go beyond streamed game content.

MUKBANG: “EATING BROADCAST”

Mukbang is an online broadcast phenomenon from South Korea, whose term is a portmanteau of the Korean words *meokneun* (eating), and *bangsong* (broadcast). Both pre-recorded and live mukbang video streams are common. In South Korean culture, mealtimes are inherently social, and food plays an important role in relationships: the Korean word for “companion” means “person who eats bread with someone else.” Beyond Korea, mukbang is gaining an increasing foothold globally, and the socio-economic and cultural conditions of its rise set the stage for our work.

In South Korea, Hong [43] links the popularity of mukbang to the increase in single-person households. In 2015, single-person households were the most common household type in South Korea (27.1% of all households); this proportion is expected to reach 34.3% by 2035. The reasons for this trend include South Korea’s modernization and high education standards, which has resulted in more young adults moving out of their family homes, delaying marriage, and living alone [49]. Thus, Hong argues that the inherent social value of eating, together with the entertaining and interactive nature of mukbang, help single dwellers pursue intimacy from social interactions, and fulfill the sentimental hunger associated with eating [43].

Song [46] views mukbang through the lens of Korean youth Internet culture, *Ying-Yeo* (잉여). Ying-Yeo is characterized by trivial or extreme activities online. Youth engagement in such activities is seen as a way to express their frustration and pessimism towards the socioeconomic situation in South Korea. The online world serves as an ideal alternative for this generation to achieve success, giving rise to the number of streaming activities on the Internet, such as mukbang [46].

Finally, Lim [23] discusses mukbang in terms of the second-hand, visceral pleasure of watching others eat. Mukbang videos provide gastronomical pleasure and substitutive

satisfaction through the performance of the mukbangers, who indulge not only in various types of food but also often in an enormous quantity of food. Lim argues that the showcase of unlimited appetite in mukbang videos gives a sense of liberation from the psychological and physical repression that exist around eating, especially in South Korea, where there is considerable societal pressure to maintain a slim body and a healthy diet [23].

Many creators from different cultural backgrounds now produce social eating videos in English. For instance, the Twitch live streaming platform introduced a Social Eating category to highlight growing streams in this genre [42]. Previous work has focused on the broader cultural and social connections of mukbang within society. Our work helps to understand the motivations and practices from an individual viewer’s perspective. With the rise of the international popularity of mukbang, we look to mukbang culture as a way to inform the design of future video viewing experiences.

RELATED WORK

Recent research on live streamed video games offers a lens into the practices and motivations of streamers and viewers. Within the food context, technology surrounding food and food practices also requires an understanding of how to capture both multisensory experiences as well as commensality. We outline some of this prior work below.

Live Streamed Video Games

Much has been written about live streaming practices, including studies of emerging internet streaming services (e.g., YouTube Live, Twitch) [36], mobile live streaming apps (e.g., Meerkat, Periscope) [52], and the production of civic contents in live streaming activities [8]. Hamilton et al. [15] specifically explored the social interaction between live game streamers and viewers that leads to the formation of stream communities on Twitch. Streaming platforms play a key role in facilitating social needs, such as a sense of belonging and communality among the users [44].

Given the performative nature of live video game streams and streamer-viewer interactions during live streaming, streamers and viewers are engaged in what are called *para-social interactions* (PSI) [18]. Viewers feel a strong sense of perceived intimacy due to how performers behave, such as speaking in conversational tones directly to the camera. These actions allow the viewers a sense of “intimacy at a distance.” Indeed, both video game streamers and the Twitch platform have capitalized on these viewer relationships through a variety of technology incorporated into live streaming experiences [45]. For instance, a viewer’s donation of “bits” (Twitch virtual currency which can be exchanged for real currency by streamers) can appear as an animated graphic on the stream, be accompanied by the viewer’s personalized text message, and be displayed prominently in the associated chat window [53]. In a live streaming context, a viewer can insert themselves into the content and potentially get a response or acknowledgment from the streamer. Given that mukbang video streams are

also frequently pre-recorded, we expect these para-social interactions are enacted differently.

Video game streams primarily emphasize the visual aspects of gameplay while the streamer verbally provides insight into their thought processes. The usual set-up involves two overlaid video feeds overlaid: one feed shows the video game, and the other shows a webcam feed of the streamer. While one feed focuses on a streamer's game performance, the webcam view shows viewers the physical actions of the streamer, including where they are looking. Viewers communicate with the streamer and other viewers through a text chat. Viewer communities around gaming emerge from the viewers' shared experiences of in-game events or major events like tournaments, which result in a shared emotional connection [15].

Based on a study of StarCraft [7] viewers, Cheung and Huang developed nine personas for video game viewers. These personas include viewers who want to understand the game, want to be entertained, or want to influence the game in-progress by giving advice. While these motivations likely resonate with those who watch non-StarCraft video game streams, it is unclear which of these motivations resonate in streams of other content, such as videos on food and eating.

Recent work has started to explore the variety of activities other than video gaming that occur on live streaming platforms [11, 24, 25]. For instance, Lu et al. [25] observed participation within niche streaming communities pertaining to Intangible Cultural Heritage (ICH) activities. ICH-related streams seem to gravitate towards knowledge dissemination and advertising of artefacts for sale. In our work, we want to explore the inherent social aspects of eating and vicarious multisensorial experiences in mukbang to design richer viewer experiences through technology.

Multisensory Aspects of Eating

The proliferation of online portrayals of cooking and eating food is the product of the "participatory culture" in new digital media that is sustained by an ethos of sharing [26]. Contemporary food culture has contributed to the widespread practice of portraying attractive qualities of foods, emphasizing on their appearance over other qualities to incite feeling of desire [26].

Mukbang is an apt example of today's contemporary food culture, whose participatory, visceral and affective natures contribute to its multisensorial experience. The videos frequently showcase an exaggerated sense of voracity through the amplification of eating sounds and a close-up images of food.

There have been numerous studies on digital simulation of the five human senses: sight, touch, taste, smell, and hearing. Much of the work on virtual food interfaces has focused on digital flavour stimulation through taste (gustation) and smell (olfaction). Ranasinghe et al. [37-41] have developed numerous prototypes that digitally actuation of taste and smell experiences using electrical stimulation. For instance,

in Virtual Lemonade [39], the system captures the acidity of lemonade, and transmits this to an actuator at the lip of a glass; when a drinker tastes lemonade from glass, the lip of the glass electrically stimulates the drinker's tongue to approximate the acidity of the source liquid. Other studies have addressed haptic qualities of food such as simulating biting force [20] and touch [30].

Designs for Remote Commensality

Commensality is the act of eating with others. It also alludes to the social integration, reinforcement of common identities, and cultural aspects of eating together [10]. However, the rise in the number of single-person households globally [58] has made traditional commensality a challenge. As such, solitary eating has increasingly become the norm [2], which has also been infiltrated by the use of social media platforms to convey a sense of connectedness during mealtimes. Digital remote commensality thus describes remote individuals who share eating experiences with others through a virtual connection.

A number of prototype systems explore digital remote commensality. Wei et al. [55] explored the effect of multi-channel interactions (touch, smell, and taste) on remote same-time dining experiences among remote family members. Tsujita et al. [54] explored whether co-temporality matters, and how time-shifted video might work for asynchronous meal times. Most recently, Takahashi et al. [51] developed a virtual co-eating system with a 3D virtual character as a meal companion, reducing the constraint of a synchronous meal time. Grevet et al. [12] developed EATProbe, an ambient display that promoted social awareness around mealtimes to invoke a sense of connectedness among remote individuals. Our work also addresses the role of technology in promoting remote dining experiences through the consumption of interactive and multisensory video streams.

Summary

While prior research has explored some of the motivations of video game stream viewers [13, 15, 35], it is unclear whether these observations hold true for other streaming genres such as mukbang. For example, video games streams are usually enjoyed actively, where viewers contribute to the ongoing discussion; video games are also fundamentally competitive, and are primarily visual. In contrast, mukbang video streams are enjoyed more passively in that viewers seem to comment less frequently; are relaxing in nature, and involve experiences whose subject matter (food) is inherently multisensory. Our research examines how viewers interact with each other as well as with mukbang streamers. While we know that mukbang alleviates loneliness during mealtime for Koreans who live and eat alone [43], it is not clear whether mukbang serves a commensality role, and whether the social interactions in mukbang streams create a sincere bond.

STUDY OF VIEWER PRACTICES AND MOTIVATIONS

We conducted a mixed-methods study to understand the practices and motivations of mukbang viewers. This involved a preliminary analysis of 20 mukbang video streams, followed by a survey of 104 respondents who reported as being mukbang viewers. From our survey respondents, we recruited 15 participants for follow-up interviews. Our mixed-method approach allowed us to understand practices and motivations at scale, and to iteratively improve our understanding over the course of the research.

Preliminary Observations

To sensitize ourselves to the nature of mukbang content, we observed 20 pre-recorded and live mukbang streams on YouTube and Twitch (over 20 hours of video). We coded each video based on the food that was being consumed, the nature of the mukbang (e.g., how central the food was to the video stream), and qualities of the conversation (e.g. was the streamer talking to an audience member directly, etc.). For example, some mukbangers would talk about the food they were consuming; others would chit-chat with viewers; others simply ate in silence. These observations informed the design of our survey instrument and interview protocol.

Survey and Interview Participants

We recruited 104 survey respondents who reported watching mukbang video streams. Invitations to the survey were circulated through social media, online forums and word of mouth. Our respondents, 70% females and 30% males, represented ages ranging from 18 to 44 and were mostly students and working adults. Our sample comprised mainly single individuals (94% of the sample), and largely from the 18-24 age group (66% of the sample).

We recruited 15 survey respondents for a follow-up interview (5 males, 10 females, age = 17-41, average \cong 25). These participants came from a variety of countries (8), with the largest group coming from the United States (6). Further, 10 of these participants were students, while the remaining respondents came from different work backgrounds (e.g., sales consultant, teacher, human resources, and technician).

We entered survey participants into a draw for a \$20 gift card, while each interview participant received a remuneration of a \$10 gift card.

Methods

Survey. Our survey instrument included 20 questions, plus nine demographics questions. The questions comprised a mix of 5-point Likert and short answer questions, which our respondents completed in about six minutes. The survey asked about their mukbang watching practices (e.g. what platforms they used, when they watched, and who they watched the videos with), and what factors influenced their choice of mukbang video to watch. It also asked several questions about their motivations for watching mukbang. Based on prior work and our own preliminary observations of mukbang video streams, we developed these survey questions around five categories of motivation:

entertainment, socialization, interaction, information, and hunger.

Semi-Structured Interview. Our semi-structured interview delved deeper into practices and motivations by asking in-depth questions about participants' experiences. Our interview questions were guided by the participant's open-ended survey responses and responses during the interview itself. For instance, if the participant noted in the survey that they loved the sonic presentations of some mukbang streams, we asked follow-up questions related to the audio experience. All interviews were audio-recorded and transcribed for analysis.

Analysis

Survey Data. We used principal components analysis (PCA)[56] as an exploratory technique to visualize and summarize survey responses. This technique reduced the dimensionality of the survey data set and highlighted relationships between participants' responses to survey items. These exploratory visualizations helped us see which items were similar and dissimilar, as well as which items helped discriminate between respondents.

Interview Data. We used an iterative, grounded theory approach [29] to analyze the interview data. This technique mirrors prior work that addresses data sets involving personal habits and behaviours [16, 57]. While we were collecting interview data, we continually open coded incoming interview transcripts and modified our interview questions to follow-up on emerging themes and ideas. As we continued to collect and analyze interview data, we revised our codes and recoded existing transcripts as necessary. Once we reached theoretical saturation from the interviews, we began a process of axial coding. Here, we organised the codes into broader abstractions and generalised meanings to answer questions such as who, where, when, why, and how about each category [48].

Since the survey and interview data were collected simultaneously, we allowed our ongoing analysis of each data set to influence our interpretation of the other. While we kept the survey instrument fixed, our interview protocol evolved over time as we came to a richer understanding of the practices and motivations of the participants.

In reporting our findings, P1 through P15 are interview participants that had also participated in the survey.

FINDINGS

We describe two major findings. First, we discuss the practices of mukbang viewers, and second, we describe three major categories of motivations of mukbang viewers.

Mukbang Viewing Practices

Our viewers watched mukbang videos in many contexts such as during mealtime, before bedtime, or during free time. However, across these contexts, mukbang viewing was a solitary activity for our participants. Viewers commonly selected which videos to watch based on preferences for the

food being eaten. For some, the personality of the mukbangers played an important role in content choice. From our analysis, three major themes emerged around when viewers chose to consume mukbang content: mukbang streams as a primarily private activity, as a mealtime companion, and as a leisure activity.

Mukbang Video Streams as a Private Activity. The exaggerated act of devouring food and the loud gustatory sounds in many mukbang videos seem to go against conventional norms around mealtime. As such, one common theme among the viewers that we interviewed was the idea that watching mukbang is a very personal and private activity. Of our survey respondents, 63 out of 89¹ indicated that they watched mukbang alone, and two interview participants specifically described how they kept their mukbang viewing habit private or secret.

"I might have recommended a [mukbang] YouTuber once to a friend, but for the most part I kind of keep [my mukbang watching] private." -P2

"I feel like [watching mukbang is] one of those secret hobbies that nobody really wants to talk about..." -P10

When asked why they chose to watch alone, participants reported feeling embarrassed about the hobby; P4 even likened their mukbang watching practice to watching an erotic show.

"Yes, I do [watch alone in private]! It's almost like porn. I cannot watch it with somebody else." -P4

Participants who had shared their mukbang interest with others rarely found kindred spirits to watch with and continued to watch mukbang video streams alone. These participants felt that the people with whom they shared the videos did not have the same level of fascination and enthusiasm towards mukbang videos. While they felt some level of comfort discussing their mukbang activity, the actual practice of watching videos was left as a private endeavour.

"[I watch] pretty much alone every time. I watch [mukbang] alone, but sometimes I send it to my friends, but they're not as addicted as I am. They [say] "Oh [the video's] so good!"; but they're not as crazy as I am. I'm really crazy about [mukbang video streams]. So, I watch it alone because nobody understands." -P13

"I watch [mukbang] alone because my family usually laughs at me when I watch it when they are there. They say I am wasting my time with this nonsense." -P15

Mukbang Video Streams as a Mealtime Companion. In *Gastrophysics: The New Science of Eating* [47], Spence postulates that, "with the decline of the family meal and more people living alone because of divorce, old age, and changes in society, we look for something else to do if we're dining by ourselves like turning to the TV or the laptop." This trend

was reflected by our survey data: 66% of respondents live in single households. Additionally, 64% of respondents indicated *Agree* (21.3%) or *Strongly Agree* (42.7%) for the survey item "I have the habit of watching videos (online / on TV) while eating" (5-point Likert scale).

Twelve out of the fifteen interview participants also indicated eating alone as part of their daily routines. Of the twelve participants, half watched mukbang videos during mealtime. These habits emerged due to a multitude of life circumstances. For instance, P4 moved with their family to the US from Iran, and shared that it had become challenging to have a communal meal after the move, because family members, "Had more [to do in our lives], so it was definitely harder to get everybody together to have lunch or dinner together."

To fill the time, five interview participants specifically noted that they would seek entertainment from TV or social media platforms when eating alone.

"Usually if I'm eating alone, and I'm all by myself, usually I'll watch TV." -P3

"When I'm eating alone, I normally read the news on my phone, or sometimes do a quick surf on Instagram, sometimes YouTube." -P12

Many mukbangers converse with the audience, even in pre-recorded video streams. Our participants saw this as a central part of the experience. The video stream provides a sense of dialogue and shared experience that went beyond simple digital media distractions during meals.

"If I eat alone, I tend to watch mukbang, because it feels like I'm eating with someone else. It feels like I'm actually interacting with them even though they can't really see me in a way, especially when they talk about something and ask for a response." -P8

"I found this one person, which her name is Stephanie Soo. She's my favourite because she talks mostly about conspiracy theory and unsolved mystery, that's fun to have a story time when you're eating, like virtual conversation I'd say." -P9

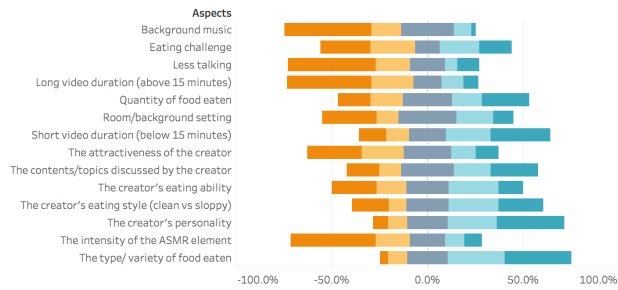
For this group of viewers, mukbang videos played the role of a mealtime companion, evoking a sense of togetherness that remedies a lack of a shared meal with peers or family.

Mukbang Video Streams as a Leisure Activity. Five of our interview participants either indicated that they felt relaxed after watching mukbang, or they watched mukbang videos while they were relaxing, such as before bedtime. Again, this viewing behaviour was solitary.

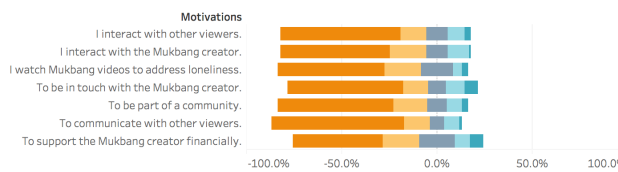
"...sometimes when I'm going to bed I'm actually just watching mukbang videos." -P4

¹ Not all participants responded to all items in the survey.

Relative Importance of Mukbang Video Aspects

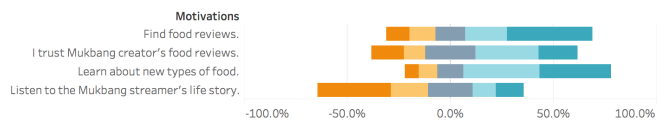


Socialisation

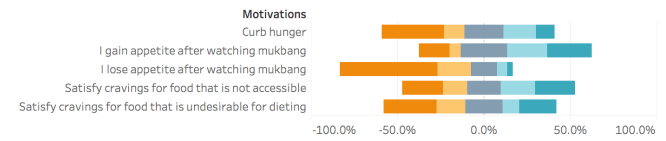


Strongly Disagree Disagree Neutral Agree Strongly Agree

Information



Hunger



Entertainment

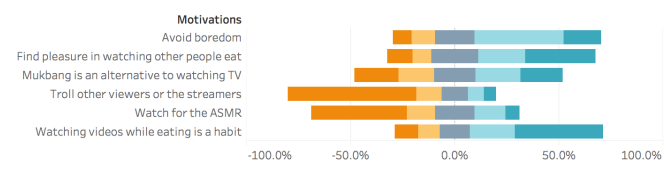


Figure 2. Aggregate survey response data based on items asking participants to describe their motivations for watching mukbang video streams. Bar widths represent proportion of participants responding.

“At night, [I watch mukbang video streams] when I’m supposed to be sleeping and I’m hungry.” –P7

The calm, relaxing nature of many mukbang streams engendered positive feelings for participants. For instance, P8 discussed how watching mukbang videos made them happy and relaxed.

“Sometimes I feel very happy watching [mukbangers], because they have such a good life, they can eat this much, and they can be this happy, why can’t I. Watching mukbang is also relaxing for some people, it’s actually a mental treatment for some people. But for myself, it’s a good experience. [...] Watching mukbang actually makes me sleepy in a way. For me, watching them eat is very relaxing. I don’t eat that much but seeing someone eat that much makes me happy.” –P8

When asked to describe a perfect mukbang experience, P8 and P10 similarly described feeling more relaxed when watching mukbang videos.

“I would totally watch mukbang on my TV screen and put some speakers on and watch it on my luxurious sofa because I feel it’s a really relaxing activity.” –P8

“Maybe I would upgrade my room so I can be more relaxed when watching [mukbang video streams].” –P10

These positive feelings also helped to address boredom. P4 described mukbang as an antidote to boredom, or something they watched right before sleeping. Similarly, P9 used mukbang video streams as a meditation tool to relax after the stresses from work.

“Usually [I watch mukbang video streams] after I’m done with work. [I also watch] whenever I’m bored. Usually [this is] around 8 when I have not much to do.” –P9

Among the five participants that indicated feeling relaxed when watching mukbang videos, three followed specific mukbangers and discussed some degree of attachment to them. For these participants, the relaxing aspects of the mukbang videos could be derived at least in part from their perceived intimacy and familiarity with mukbangers. This resonates with prior work that showed that popular vlogs encouraged a high level of intimacy with the creators [5].

Motivations of Mukbang Viewers

Figure 2 summarizes aggregate survey responses on viewers’ motivations to watch different kinds of mukbang video streams. For every item, there were participants who responded “Strongly Agree” while others responded “Strongly Disagree.” This suggests that mukbang viewers are not a homogenous group—instead, a variety of viewer motivations and needs are being fulfilled by mukbang video streams.

In our analysis, we found three major themes that describe viewers’ motivations for watching mukbang streams: sense of connectedness, vicarious pleasure, and spectacle. The first theme encapsulates viewers who watched mukbang videos because of the perceived intimacy that they have established with the mukbanger. The second theme addresses viewers who achieved satisfaction through the audio-visual stimuli and actions of the mukbanger. The last theme describes viewers who watched mukbang for the spectacle represented by the video. We describe each theme based primarily on the comments from interview participants, supported with

aggregated survey data, and filling in gaps with our understanding of mukbang content based on our preliminary observations.

Motivation Theme 1: Sense of Connectedness

The vast majority of survey respondents had little to no interest in interacting directly with other viewers or the mukbanger (see Figure 2 – Socialization). Instead, the social aspect of the mukbang viewing experience seems primarily derived from a perceived intimacy with specific mukbangers. Six interview participants reported feeling a sense of intimacy with mukbangers in pre-recorded mukbang videos. For these participants, mukbangers were admired for their personality, their stories, or their physical appearance. For instance, participants P8 and P9 shared a common admiration of YouTube mukbanger Stephanie Soo because of her personality and storytelling.

“There’s this one mukbang youtuber that I like that actually talks a lot, she talks about her life experiences and she’s kinda funny, Stephanie Soo. She’s very funny and sassy at the same time. ... Her life experiences are also very nice, very dramatic.” –P8

For these participants, their attachment towards the mukbanger motivates further viewing. For P8, this perceived intimacy is a fundamental part of the experience, describes their relationship with ‘celebrity’ Stephanie Soo as a ‘fan’.

“I feel that [Stephanie] knows I’m here supporting [her] as someone who actually likes to watch them. As a mukbanger, [she] becomes a celebrity and I act as a fan.” –P8

Both P8 and P9 also said that they have interacted with the mukbanger, and commented on how their mukbanger often liked or replied to their comments.

“She’s very active with the people. So, if you comment, she will probably like it or she will respond.” –P9

While viewers’ perceived intimacy suggests the presence of PSI in mukbang, mukbangers are active in responding to their viewers’ comments to maintain a high level of engagement. Thus, mukbang viewing does not necessarily fit into the non-dialectical characteristic of PSI, because of the reciprocity between viewers and mukbangers in mukbang videos.

Notably, only a very small percentage of survey participants indicated any desire to interact with other viewers (see Figure 2 – Socialization). This contrasts with findings from studies of video game streaming (e.g., [15]), where the platform’s design encourages interaction with other viewers in real-time. Based on our interview data, within the mukbang community, socialization centres primarily on the mukbangers and not others in the viewer community.

Motivation Theme 2: Vicarious Pleasure

Ten of the viewers we interviewed watched mukbang videos for the vicarious pleasure associated with it. The emphasis on attractive portrayal of food and exaltation of gluttony in

most mukbang videos allow people to eat vicariously through the mukbanger. Such vicarious pleasure is related to the multisensory experience and the virtual satiation that the viewers can achieve from watching mukbang videos.

Multisensory Experience. The sensorial experience from the auditory and visual stimuli of the videos seems to help viewers vicariously enjoy mukbang. Many mukbangers, for example, use special microphones that capture the sounds created as a consequence of eating (e.g. munching sounds), or as a consequence of opening food packaging. These sounds are known as autonomous sensory meridian response (ASMR) elements, which are understood to produce a relaxing, sedative sensation for some people [4]. These sound elements have become almost indispensable parts of many mukbang videos.

“I think the ASMR is the most important thing. You can actually hear every single of chewing, makes you feel like you’re doing it. It’s so good. I feel the ASMR is the most important thing.” –P13

Whereas some people experience pleasure from these sounds akin to flow state [4], these sounds are also a means to express textural aspects of the food being—a critical part of how foods are experienced. For instance, chewing dry crunchy foods sounds different than softer chewier foods like noodles.

Mukbangers are creative in how they use the medium to accentuate the sensory aspects of the food. For instance, they will often provide close up views of the food, showing physical details and texture that would otherwise be lost on stream when recorded at a distance. Mukbangers, particularly when trying new foods, or foods they expect to be unusual to their audience, will spend significant time describing the taste or smells of the food. These descriptive details help fill in multisensory components like taste, which are hard to convey via video stream. For instance, P4 prefers that a mukbanger tries to describe taste so they can better understand the experience of an exotic food.

“I need them to tell me what it tastes like, especially something that I’ve never had before, like octopus.” –P4

Beyond this, some mukbangers will perform extra actions on the food to highlight aspects of the food that are otherwise difficult to convey, where the actions have nothing to do with eating. For example, a mukbanger might drag a fork across deep-fried foods to show (through audio) how crisp and dry the food is. Similarly, a mukbanger might slowly pour a spoonful of soup to illustrate how viscous the soup is or snap a cracker/crisp object to show how crispy a food is.

These efforts by mukbangers seem to be attempts to convey the multisensory eating experience in the absence of technology to support it. Some participants indicated interest in support for additional senses. P8 suggested being able to smell the foods:

“If I can smell the food that would be good too. If I can do something like that happens, I’ll do it because sometimes their food looks really delicious. I can totally imagine wanting to do that.” –P8

With regard to the current experience of mukbang video streams, some participants wanted to enhance the sonic aspects of the eating experience, even at the expense of the conversation, as described by P13.

“I think the ASMR is the most important thing... I prefer them not to talk that much.” –P13

Unlike the group of viewers who value social interaction through mukbang videos, this group of viewers indicated a higher preference for short video duration and less talking.

“It’s weird but I do like hearing the sounds, like the crunching but I don’t like to hear a lot of it. That’s why the one-minute videos are enough because after that, it’s on my nerve.” –P3

To reiterate an earlier point, the desire to listen to chewing sounds was not universal (Figure 2, Entertainment, “Watch for the ASMR”). Viewers who watched mukbang to feel a sense of connectedness wanted to listen to the mukbanger’s story and had little to no interest in videos featuring ASMR. Instead, their focus was on the normal conversation from the mukbanger.

“I don’t really care for the ASMR, I think it’s kinda gross to hear people chew. I think I’d like it better if the streamers talk about anything besides eating and food, like having a normal conversation with their viewers.” –P2

Virtual Satiation. Five interview participants reported on the ways in which mukbang helped satisfy food cravings or hunger—a sort of vicarious, virtual satiation.

“It’s just like if there’s something I’m craving, I’ll watch a mukbang video.” –P11

“And sometimes when I don’t have access to food I was like ohmagad I’m so hungry and I watch it and I feel a little better.” –P4

Viewers were also drawn to mukbang videos that featured food that was not accessible to them, such as delicacies from other countries, exotic foods like a raw octopus, or forbidden food due to allergy or health issues. For example, P3 mentioned that they watched mukbang videos that featured food that they did not normally eat, while P10 watched mukbang to experience virtual satiation when they did not have access to food.

“It depends on what they’re eating, whether it’s something I don’t have in a regular basis.” –P3

“I’m a Muslim, so during Ramadhan I watch a lot of mukbangs because I can’t really eat during the day, so I like to see like maybe I can eat this later in the day”. –P10

One viewer, P4, watched mukbang videos to vicariously eat food that they are allergic to.

“I’m also allergic to shellfish, and I love watching people eating shellfish. It’s literally me living my life through somebody else because I really wanna have shellfish but my skin has some bad reactions to it.” –P4

Physiological Experiences. Physiological experiences refer to the bodily responses that result from mukbang viewing activity. Such experiences are related to viewers who watched mukbang videos to achieve vicarious pleasure. For example, P3 and P4 shared how mukbang influenced their cravings for a particular type of food.

“I watch a lot of noodles for some reasons because it makes like delicious noises and I like that. And I have noticed that I’m constantly craving noodles now because of the videos. So, it has affected my cravings for sure.” –P4

“When I watch these videos, it definitely makes me want to go eat. If it’s seafood, it makes me wanna go eat seafood, but I tried not to give in into those. That’ll be bad.” –P3

When P3 says “That’ll be bad”, they acknowledge the undesirable effect of physically satisfying their craving for seafood; instead, they chose to satisfy it virtually through mukbang. However, this is far from a universal motivation, survey responses to the items, “I gain appetite from watching Mukbang” and “Satisfy cravings” (Figure 2, Hunger) were almost evenly divided with roughly half of respondents agreeing and disagreeing with both statements.

Motivation Theme 3: Spectacle of Eating and the Mukbanger’s Performance

Many mukbang videos are immediately striking because of the vast quantity of food being consumed. In North American culture, these extreme eating situations are typically reserved for eating competitions, where the prodigious consumption of food is a performance that simultaneously promises “suspense, excitement, and the thrilling possibility of watching somebody else throw up” [14]. Mukbang is a performance much like video game streaming [35], but unlike gameplay streams whose drama comes from the unpredicted outcome or action in the game [15], the drama of mukbang videos comes from the enormous food quantity and exotic food type. Thus, the performance of the mukbanger and appeal to excess provides a spectacle that draws in viewers. Fifty percent of our survey respondents agreed with the idea that the “Eating Challenge” was an important aspect in their choice of mukbang video streams to watch. Similarly, 50% of survey respondents indicated that the mukbanger’s “Eating Ability” (defined as their ability to eat large quantities of food) was also important to them. Consistent with Halloran’s observations of extreme eating in popular culture [14], the quantity of food being consumed is an important part of the mukbang; however, in contrast to Halloran’s observations of extreme eating, we did not observe a single instance of a mukbanger throwing up in a video stream.

Mukbangers vary in their mukbang performance. For instance, *how* they consume food varies—some mukbangers are very sloppy with their eating; others are more careful, deliberate in how they eat. 66% percent of survey respondents indicated that this eating style was important in how they chose mukbang streams to watch (Figure 2, “Creator’s eating style”). To varying degrees, our participants placed value on the overall performance, attributing their interest in particular mukbangers based on their eating style, reactions to exotic foods, or struggles in trying to accomplish an eating challenge. In this sense, food itself becomes secondary, serving as a prop that prompts the content of the video, such as starting a conversation around the food, or an object for the mukbanger to react to with facial expressions. This is reflected in responses from P4 and P14 that mention the mukbanger’s eating style as an important motivation behind their viewing activity.

“I like it too when the [mukbangers] eat sloppily. It’s real. I love it especially when they can’t control, it’s like noodles everywhere and sauce all over the place, and that’s hilarious and I love it.” –P4

“The eating style, if you’ve ever seen the eating style of Matt Stoney, you would just think, ‘Wow.’ Eating style, I find it very interesting, especially when I watch him...” –P14

As both a mukbang viewer and mukbanger, P11 noted that the mukbanger’s reaction is part of the draw of mukbang.

“I guess watching other people’s reactions is super interesting. And since I’m a streamer too, I know how it is to perform and get reactions. To watch people doing these challenges, like the spicy challenges, is fun to watch. And I feel like when you have a challenge like that, it’s more interesting to watch because it has an end goal or a challenge that makes it harder.” –P11

Thus, for this group of viewers, the eating performance of the mukbanger itself is the draw: a performance that is in of itself a spectacle. This performance plays a big role in captivating these viewers’ attention and influencing their willingness to watch.

DISCUSSION

Our study of mukbang video streams is an important counterpoint to prior work studying live video game streams. Whereas prior work focused on the social aspects of a communal viewing experience [15], our study of mukbang viewers suggest that very few wanted to explicitly engage in social interaction with fellow viewers. Instead, mukbang viewers were motivated by the “slower” aspects of the experience. Mukbangers used microphones to capture eating and unwrapping noises, demonstrations of food interactions, and verbal descriptions of tastes to convey the multisensory experience of food and eating to viewers. Some viewers are interested in mukbangers themselves as personalities and companions, while others are interested in the spectacle of mukbang performance (e.g., how the food is eaten, or how much food is consumed as a challenge).

Mukbang addresses a wide array of viewers’ motivations and serves as a single gathering place for a diverse set of viewers. Our findings suggest that viewers’ motivations for watching and ideal experience of watching streamed content will vary as the streamed content varies. Based on our understanding of the divergent motivations for watching mukbang, we imagine tailoring future video streams and streaming interfaces to address these different needs.

Real-time Audio Segmentation. While some viewers wanted to listen to the mukbanger’s stories, other viewers preferred a deeper ASMR experience or even preferred mukbangers that do not speak at all.

We envision ways for viewers to manage their audio to be semantically meaningful and tailored to their desired experience. Similar to audio tracks with dialogue dubbed in different languages or a ‘director’s commentary’, viewers could select audio tracks that emphasize video features of interest to them. An ASMR-oriented mukbang viewer could be given the option to lower or mute the volume of spoken dialogue to instead enhance their vicarious experience of eating sounds. This idea could be extended to other streaming content, including video game streams: some viewers may simply be interested in the gameplay without having interest in the streamer’s commentary (or vice versa).

Multisensory Immersion. Current video streaming technologies rely on audio-visual stimuli to support vicarious experiences. Mukbangers need to verbally describe smells and tastes to their audience. Additionally, videos of people eating food—particularly with an amplified audio channel with eating sounds—provide clues to food’s tactile, haptic features [21] such as the mouthfeel of food textures, the relative density and physical form of the food, and the resistance of food while someone is chewing or swallowing it. Communicating multisensory information at a distance has applications beyond mukbang, including remote critique of physical prototypes [28] or feedback on exercise or physiotherapy [3].

Simulating or transmitting taste, smell, and touch are active areas of research. For instance, Suzuki et al. [50] developed a system for delivering a synchronized release of odours from videos using closed captions. Similarly, prior work on virtual flavour through electrical stimulation to the tip of the tongue shows promise, although it mainly relied on simulating flavoured beverages as opposed to foods [39, 40]. However, in practice, the relevant scent tools must exist on both the viewer and streamer end. Content creators would need to be able to incorporate olfactory information into their videos, while the viewer would need tools that can receive olfactory data and emit corresponding odours. Unfortunately, multisensory simulation systems are still far from being readily available in mukbang viewers’ homes.

However, there may be other, creative ways of facilitating these experiences. Viewers could use bone-conduction headphones to hear the internal sounds that the mukbanger

experiences through bone conduction. Or, viewers could assemble objects at home as physical proxies for remote foods [17]. For example, to reinforce the crackling skin of fried chicken, a viewer could locally immerse their hand in a bowl of popcorn, or pop bubble wrap.

Remote Commensality through Blended Reality. One way to heighten commensality could be to blend streamed videos into viewers' immediate eating environment. Including streamed content into viewers' surroundings could intensify immersive commensality experience. For instance, a mukbanger could virtually be sat beside viewers through "Holoportation" [31]. Heightening the mukbang viewing experience with a virtual partner might be especially enjoyable for viewers looking to connect with traditional family or cultural eating environments while remote. Moreover, "holographic" technology could further enhance the experience by focusing on showing virtual food to viewers as well as the mukbanger.

Watching a live stream video using a headset with a depth-sensing camera (e.g., HoloLens) could also allow viewers to interact with the mukbanger during a 'shared' eating activity via gestures. For example, a viewer's toast gesture could correspond to animated feedback displayed to the mukbanger. By creating a natural mapping of activity-specific gestures to online communication commands, viewers can interactively, immersively, and seamlessly communicate with others in live video streams.

Information Overlay. Some viewers commented that they wanted to know more about the food in a mukbang video. This is particularly relevant for mukbang videos that feature exotic foods or a wide variety of foods in one sitting.

Video game streamers already have tools that address this need for details on demand: Hearthstone Deck Tracker¹ is a Twitch Extension that enables viewers of Hearthstone [6] game streams to view additional details about in-game objects by hovering over the corresponding area of the video stream with their cursor. This additional layer of information, however, is not necessarily available to people viewing "in real life" (IRL) streams.

We imagine future streaming interfaces that could use image recognition to distinguish food items in the video, and then overlay food with relevant information (e.g., name, origin, price, ingredients). The success of previous studies [22, 32] on recognizing and segmenting moving objects in videos indicates the possibility of distinguishing the food items in mukbang videos, which are relatively static throughout the video. Like existing interactions in the Hearthstone Deck Tracker, viewers could then hover their cursor to a specific food item and see the foods corresponding details. Similar features could be added to other IRL streams where objects, places, or people within the video content could be

automatically recognized and allow a viewer to access additional detailed information of those objects by interacting with the video stream.

A Critical Perspective on Mukbang. It is important to acknowledge that while mukbang content is generally created for entertainment purposes, it can also carry negative implications for both streamers and viewers. Mukbangers consume massive quantities of food to satiate the desires of their audiences in exchange for advertising or donation revenue. This relationship between streamers and viewers has the potential to become problematic or dangerous to the health of the streamers².

Technology could provide opportunities to address these potential downsides by offering better transparency between streamers and viewers about the potential negative effects of mukbang. This could include providing feedback to viewers about streamers' off-camera efforts to stay healthy and offering ways for viewers to not only support on-camera performances and feats of eating, but also off-camera activities that support mukbangers' overall well-being.

Mukbang also has the potential to reinforce unhealthy habits for those with eating disorders. Prior work discussing eating disorders in online communities [9, 27, 34] offer insight on how platforms and content creators can address this issue through introducing recovery content, advocating for healthy behaviours, and developing intervention tools.

LIMITATIONS AND FUTURE WORK

In this work we focus mukbang viewers rather than the creators. By not including the perspective of mukbang content creators we have limited our scope—excluding concerns such as food preparation and monetary incentives. There is an opportunity for future research to build on ours through comparing and contrasting the motivations and practices of mukbang viewers to mukbang creators.

CONCLUSIONS

Mukbang acts as a virtual gathering place, where disparate viewer motivations are satiated. Some viewers wish to vicariously experience elements of the spectacular show of food consumption; others seek a mealtime companion for what would otherwise be a lonely affair. Based on our analysis of mukbang viewing, we identify possibilities for future video streaming technologies. By focusing on alternative streaming content—eating—we discuss the potential of video streams to further support remote commensality and enable multisensory immersion.

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¹ <https://hsreplay.net/>

² <https://www.menshealth.com/health/a25892411/youtube-mukbang-stars-binge-eat/>

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