

“Draw a Pig Farm”: Understanding Consumer Perceptions of Pork Production Through a Semiotic Lens

Introduction and Literature Review

Research has shown that consumers hold complex and sometimes contradictory opinions about pork production, often influenced by concerns related to animal welfare, antibiotic use, food safety, and environmental sustainability (Lusk et al., 2007; Wan & Tao, 2023). These opinions can be communicated through drawings, which reveal symbolic meanings and emotional associations (Mitchell et al., 2011). Additionally, social media and other platforms have enabled information to circulate without traditional gatekeeping (Arguedas et al., 2022). This has promoted the circulation of accurate information and misinformation about pork production, making information verification difficult for consumers (Al-Rawi, 2024). Modern pork production has rapidly adopted technologies like automated feeding, environmental controls, and precision breeding (Ferreira et al., 2022). While these innovations improve efficiency, many consumers remain unaware of them and rely on idealized images of farming (Ferreira et al., 2022; McEachern & Schröder, 2002). This gap can create discomfort or mistrust when production practices conflict with consumers’ expectations (Toma et al., 2012).

Semiotics, the study of signs and symbols and how meaning is constructed, offers a valuable framework for interpreting consumer-generated drawings, making it especially relevant for analyzing visual data (Pelkey, 2022; Thellefsen et al., 2018). This also reflects the multidimensional nature of consumer perceived value, which includes not only functional and monetary factors but also emotional, social, and symbolic dimensions that influence consumer responses to agricultural practices (Jansri, 2018). These varying perceptions are shaped by individual values and socio-cultural norms, contributing to what Fiske (1982) describes as connotative meaning, the emotional and cultural layers of interpretation that go beyond the literal (denotative) content. Understanding these deeper interpretations is critical for exploring the perceptions consumers hold toward pork production, which this study seeks to explore. Consumers’ perceptions at both denotative and connotative levels can reveal a holistic understanding of consumer concerns, allowing communication professionals and extension educators to identify and address key beliefs and misconceptions (Bittner et al., 2021). Storytelling offers a way to engage these perceptions by making agricultural practices more relatable and emotionally resonant, helping bridge the gap between production realities and public understanding (Dahlstrom, 2014).

Theoretical Framework

This study is guided by schema theory, framing theory, and semiotics (Axelrod, 1973; Bartlett, 1932; Barthes, 1972; Chandler, 2022; Scheufele, 1999) to explore consumer perspectives of pork production. Framing theory argues that individuals are not passive recipients of media or social messages but rather interpret messages through pre-existing beliefs and cultural expectations (Entman, 1993; Scheufele, 1999). This process, known as audience framing, shapes the way people make sense of issues such as pork production. Audience framing is used in this study to understand how participants visually emphasize certain aspects of pork production in their drawings, revealing which ideas or concerns are most personally meaningful.

Schema theory explains how people draw upon internal cognitive structures formed through experience, culture, and emotion when interpreting new information (Axelrod, 1973;

Mcvee et al., 2005). When encountering complex or emotionally discomfoting knowledge, individuals often retrieve simplified or idealized schemas that provide psychological ease rather than factual precision (Axelrod, 1973; Simon, 1956). Instead of fully revising these schemas when encountering discomfoting information, individuals may settle for manageable interpretations, a process Simon (1956) describes as satisficing.

Semiotic theory explores how people create meaning through signs and symbols, shaped by culture and context (Barthes, 1972; Chandler, 2022). Through denotative and connotative signs, participants symbolically communicate not just knowledge but values, emotions, and cultural scripts (Barthes, 1972; Chandler, 2022; Fiske, 1982). Among these connotative elements, emotional valence which is the positive (e.g. hope, joy, contentment) or negative (e.g. fear, anger, disgust, sadness) emotional value associated with a stimulus, plays a key role in shaping how signs are interpreted, and how meaning is constructed (Russell, 1980; Solomon & Stone, 2002). To understand how the internal schemas are expressed visually, the study applies semiotic theory to analyze participant-generated images (signs).

Purpose and Research Questions

The purpose of this study was to explore consumers' perceptions of pork production at the denotative and connotative levels, with the following research questions:

1. How do consumers visually represent pork production?
2. What opinions do consumers hold about pork production?

Methods

Twelve focus groups were conducted between April and June 2025 across four major U.S. cities: Los Angeles, CA; Portland, OR; New York City, NY; and Boston, MA. Each lasted approximately 90 minutes, was audio-recorded with participant consent, and subsequently transcribed verbatim. Three groups were held in each city, with a planned recruitment target of 120 participants (10 per group). A total of 98 participants took part in the discussions.

Participants were recruited through a third-party professional recruitment service. Eligible individuals were between the ages of 20 and 50, falling within one standard deviation of the average household income of the city, and were responsible for making food-related decisions in their households. Individuals with these characteristics are more likely to prepare food at home while having the ability to be selective of the food attributes they value. All participants consumed meat and did not abstain from pork for religious/cultural reasons. Efforts were made to have the group of participants of each city roughly represent the racial and ethnic breakdown of the city. Each session included at least one mother with children living at home.

Data collection was guided by a semi-structured moderator guide that explored consumer experiences and perceptions related to pork products and pork production. As part of the discussion, a draw-and-talk technique was used (Mitchell et al., 2011). Participants were asked to draw one or more versions of a pig farm, pork production facility, or pork farm. We offered these terms to elicit a wide range of perceptions. Participants were then asked to describe the elements, thoughts and emotions reflected in their drawings. This visual method was intended to stimulate reflection and uncover underlying beliefs or associations. The focus group transcripts were analyzed using the constant comparative method (Glaser & Strauss, 2017), allowing for the systematic development of themes across sites. Open coding of transcripts and drawings

produced an initial codebook. Two researchers independently coded a subset, resolved differences through discussion, and documented coding decisions throughout. Themes were refined using Braun and Clarke's (2006,2022) six-phase approach to thematic analysis. To protect confidentiality, all participant names were replaced with pseudonyms (Creswell & Creswell, 2022). Credibility was ensured through systematic coding, triangulation across sites and data sources, and peer debriefing between two researchers (Creswell & Poth, 2016). Transferability was supported with rich description of participants, contexts, and settings to allow readers to judge applicability (Creswell & Miller, 2000). Dependability was supported by maintaining an audit trail and tracking coding decisions, while constant comparison helped refine categories (Glaser & Strauss, 2017). Confirmability was addressed through reflexive memoing and researcher consensus to reduce bias.

Results

RQ1: Denotative Visual Representation of Pork Production

Small-scale family farms and industrial production systems were identified denotatively.

Small-Scale Family Farm

Drawings depicted small-scale farms as open and nature-connected environments (e.g., Figure 1). Common visual elements included fenced pens, barns, grass, trees, sunshine, mud puddles, feed troughs and pigs depicted with visible space to roam, with happy faces. Elias drew “a big happy pig, a pig farm with a barn, a feed trough, trees, lots of mud and a wooden fence.” Notably, none of the small-scale drawings included industrial features like machinery or multiple housing facilities, reinforcing the perception of these systems as low-tech. However, not all participants fully embraced these idealized natural settings. One expressed doubt saying, “There’s a little water source and grass everywhere and they are not just sitting in those little cages, but I always imagine that they are giving them many hormones so they can get bigger.” This reflects an underlying skepticism, despite natural imagery, concerns still surfaced, suggesting that even “natural” settings were not entirely trusted.

Figure 1

Participant Drawing Representing a Small-Scale Family Farm



Industrial Pork Production Facility

Drawings illustrating perceptions of industrial production facilities included multiple buildings (e.g., Figure 2), smoke coming out from the facility, tightly packed pens, manufacturing processes including feeding, harvesting, and transporting products to market. Some also drew pigs with sad faces in cages. One drawing was labeled “bad unhappy farm with sad pigs,” reinforcing a perception of emotional distress and poor conditions. Bria said, “there’s my factory farm. Lots of buildings, no windows... a manure lagoon... rows and rows of these

buildings inside, it's pretty intensive. Lots of pigs crammed in there... it's smelly."

Figure 2

Participant Drawing Representing Industrial Pork Production



RQ2: Opinions Held on Pork Production Connotatively

Participants expressed opinions on pork production practices through drawings, written labels and verbal descriptions. They were categorized into six themes.

Profit Prioritization

Participants shared how financial motivation drives industrial pork production. Some drew dollar signs as representations. James said, "It's business. It has to be run in a ruthless, economical way where these enterprises make [a] profit... You just squeeze every ounce of meat to make a dollar." Participants also shared how small-scale production was perceived differently. Camila said, "If it's a small, family-owned farm, they are probably not as desperate for profit" and they are able to "hold themselves to a higher standard... without oversight from the FDA."

Environmental Impact

Environmental concerns were expressed about industrial pork production, with participants highlighting issues such as smoke, pig waste, air pollution, and odor. Noise was also depicted, explicitly labeled through words and musical notes in the drawings. John described these concerns, "... and then the truck and the transportation involved, and the pollution involved with it, as well as the pig farm, the industrial pig farms pollution. Yeah. It's kind of absurd."

Animal Welfare Concerns

Harsh living conditions and cruelty were prevalent when discussing industrial pig production. Kelly described it as "dark," "smelly," and "dirty," and believed that producers "pack [pigs] in as many as they can" for "efficiency," adding that "it doesn't have to be that way." Jena pictured an industrial farm saying "there is a scary barbed wire fence and more of the big machinery factory processing... I labeled, pig squealing and sad face." Concerns about cruelty were not limited to large-scale operations. Cruz explained his drawing, reflecting on a childhood memory from a small farm saying, "I remember, the way they killed the pigs was they shot them in between the eyes and then before it was even dead, they threw it in this pot with burning oil... it is cruelty, it probably can still feel all that pain."

Childhood Memories

Some participants held onto positive childhood memories or personal experiences that appeared to shield them from discomforting realities. These emotionally anchored schemas appeared to buffer against negative information. Simon said, "I think my experience of what I saw visually at a younger age was a good thing... I just have reservations about big farming and big corporations... I wouldn't want to see it visually because I think it would disrupt how I feel

about the pork industry." Irene held on to an idealized image from childhood, saying, "[I drew based on] the children's books [I read]. Just an idyllic farm, red barn and little animals... Consciously, I know that that's not how pigs or cows or chickens are raised for us to consume, but I like to think that it is."

Negative Valence

Participants shared emotional reactions related to the ethics of pork production, particularly industrial systems. Some drawings showed pigs with tears, sad faces, or labels like "unhappy" and "bad." Jade described her emotional disconnection from the process saying, "Nothing in my drawing makes me happy, I get sad and upset about the disconnect between the whole process system." Luca added, "[In] factory farms, baby piglets are separated, it is sad and upsetting and hypocritical." Riley noted "When I look at the drawing, I feel a bit of guilt, but I also agree that ignorance is bliss." Lydia added, "[I drew] a close-up of the pigs inside and they're all chained together... [with] tears in their eyes."

Positive Valence

Some participants expressed positive emotions in relation to pork production. Shelby reflected on her drawing, saying "I feel gratitude, [when describing my drawing]. Just to be grateful that these animals are giving their life, so I should have protein." Kirsty said, "I hope that they are happy, and I hope they are happy to feed me" suggesting a desire for ethical treatment and a personal sense of appreciation tied to consumption. Ruth expressed hope and compassion, saying, "I hope there's lots of hay and mud for them to roll around, just lots of space for them to play before they meet their end [compassion]."

Conclusion and Recommendations

These results demonstrated that consumers' perceptions of pork production were shaped not only by information, but also by emotion, culturally embedded narratives, and personal visual schemas rooted in memory and experience (Fiske, 1982; Qu, 2016; Pelkey, 2022; Thellefsen et al., 2018). Building on previous work, this study found that some consumers rely on emotionally protective mental frameworks to process ethically complex information about pork production. While Ecker et al. (2024) emphasizes the significant influence of misinformation on public beliefs and behavior, this study shows that consumer perceptions may stem from internal schemas shaped by personal experience and emotion, highlighting the need to consider informational and psychological factors in understanding public views of agriculture.

Agricultural communicators can benefit from acknowledging the emotionally anchored mental frameworks that shape how the public engages with food production. Rather than attempting to replace these perspectives with corrective information, communicators can invite reflection by validating emotional responses and gently introducing complexity. Approaches that use visual storytelling may be effective in bridging the gap between consumer perception and production realities. Communicators can also enhance engagement by using participatory tools like drawing and narrative exploration to uncover deeper symbolic concerns often left unspoken. This research also complements and expands upon the visual communication work of Qu et al. (2018), who emphasized the power of imagery in shaping agricultural narratives. Ultimately, this study underscores the importance of emotional framing, semiotic interpretation, and schema awareness in agricultural communication as tools supporting more ethical, effective, and human-centered public engagement.

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