



PROJECT MUSE®

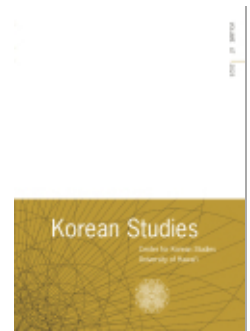
From Claw Crane to Toy Crane: Catching, Courting, and Gambling in South Korea

Veli-Matti Karhulahti, Katriina Heljakka, Dongwon Jo

Korean Studies, Volume 47, 2023, pp. 312-350 (Article)

Published by University of Hawai'i Press

DOI: <https://doi.org/10.1353/ks.2023.a908627>



➔ *For additional information about this article*

<https://muse.jhu.edu/article/908627>

From Claw Crane to Toy Crane: Catching, Courting, and Gambling in South Korea

Veli-Matti Karhulahti, Katriina Heljakka, and Dongwon Jo

The claw crane—an arcade game that invites its players to remotely grab a prize with a “claw”—has undergone a long process of development from an eye-catching “steam shovel” to a calculated gambling machine across amusement arcades, train stations, and traveling carnivals. Recently, the claw crane has become a common transmedia object in various consumer outlets around the world, serving today’s “kidults” who are willing to play and be playful with toys as grownups. Especially in South Korea, the claw crane now rewards its players with cutified character plushies, which arguably reflects and resonates with the local sociocultural conventions. In this mixed-methods study, we deconstruct the claw crane as a historical artifact that promotes diverse forms of human interaction and engagement in the techno-cultural and social context of South Korea. The claw crane (or in South Korea, rather the “toy crane”) is investigated by means of historical design analysis, a review of contemporary South Korean media texts, and field observations in Seoul. We suggest the claw crane to serve as a multipurpose medium for playful interactions beyond the act of play itself—and in South Korea, having become a means for playful courting and emotional support, which at times of anxiety, stress, and uncertainty may contribute to one’s confidence and belief in the future.

Keywords: claw crane, doll drawing, romantic play, kidults, cuteness, transmedia culture, K-drama

Veli-Matti Karhulahti is an interdisciplinary researcher of play, technology, and meta-science at the University of Jyväskylä, Finland (vmkarhwu@ju.fi).

Katriina Heljakka is a researcher of toys and play at the University of Turku, Finland (katriina.heljakka@utu.fi).

Dongwon Jo is a lecturer in cultural studies at Korea National University of Arts and works at the Cheonggyecheon Technological Culture Lab in Seoul, South Korea (d@ctclub.org).

Korean Studies © 2023 by University of Hawai‘i Press. All rights reserved.

Introduction

The origins of the claw crane can be traced all the way back to the Western carnivals of the early twentieth century, from where it can be seen gradually moving from amusement parks to public city spaces until becoming a globally ubiquitous entertainment device in the 1980s. Over those decades, the mechanics of the machine have largely remained the same (catch a prize with a vicarious claw); however, its function and cultural identity have altered notably. In earlier research, this evolution has been situated historically as part of the development of “proto-interactive machines” that nowadays represent the genre of “toyified games,” that is, game-toy-hybrids mixing gambling, kinesthetic challenge, and character toys.^{1,2} During its evolution, the machine has been given several English labels, such as “claw machine,” “crane game,” and “skill crane.” We will first use “claw crane” due to the term’s current dominance in the English discourse, and later “toy crane” due to its local specificity in Korea.

Methodologically, our study employs historical design analysis with the guidance of previous theoretical literature on toy technologies, combined with a review of contemporary Korean media texts and representations. Previous literature on claw cranes was excavated via academic and non-academic search engines in both English and Korean. The analysis is complemented with reflections on 20 physical visits to Korean entertainment spaces with local cranes. Based on the overlapping research fields of adult play, city anthropology, and cultural media studies, we approach claw crane play from the perspective of sociocultural engagement, which is suggested to support the machine’s historical function(s) in metropolises like Seoul through the shared excitements of spectacle and spectatorship—with enacted age and gender conventions.³

We first provide a historical review of the claw crane from its assumed birth to the present. We then contextualize the claw crane in Korea through analyses of technology design, sociocultural factors, and transmedia representations. Our argument has two parts. Initially, the evolution of the claw crane follows Korea’s particular developments of city structures, narrative culture, and technology design, in which the claw crane, within the context of precarious living, functions as a low-priced experience of ephemeral joy gained through emotionally uplifting accomplishments.⁴ Second, the specific Korean cultural and spatiotemporal context of the late 2010s served as a prolific ground for the claw

crane to reach popularity and special local recognition. In particular, the analysis shows that—despite the claw crane’s multifaceted history as a playable machine with several different mechanics and forms—the fundamental patterns of claw crane design have always relied on social dynamics, which strongly connect to age and gender roles that we conceptualize in the article with the recent notion of *kidults*: grownups with an accentuated interest in toys and play. In this regional context, we suggest, the claw crane is better described as a “toy crane,” as the dominant plushie prizes prominently rely on “cute” iconography that is strengthened and resold in media narratives of romantic play, or modern courting.

A History of the Crane

An established website dedicated to claw cranes, Be the Claw, claims that the machine derives from the 1890s: the first claw crane was “a hand-cranked candy dispenser and only cost a penny to operate.”⁵ Likewise, the popular *Mental Floss* (self-proclaimed “encyclopedia of everything”) writes how “historians believe the machines existed as early as the 1890s, mechanical dioramas that were built to entice people fascinated by the machinery used in constructing the Panama Canal.”⁶ In an almost identical wording, *The U.S News* states: “Some historians date claw machines back to the U.S. in the 1890s, when they were built to resemble machinery used to construct the Panama Canal.”⁷

Although we cannot prove these narratives tangled around the Panama Canal and the 1890s incorrect, none of them reference a source or any other evidence. The first well-evidenced claw cranes appear in the 1920s during which the steam-shovel-mimicking machine *Erie Digger* (1924, [Figure 1](#)) was produced and patented. The *International Arcade Museum* describes the item as follows:

The first digger is all mechanical, but offers no prize selection. The crane sweeps across the toys and stops at a different spot each time. The player continues to crank throughout the action.⁸

A news source, *The Literary Digest* (1937), identifies Rabkin as “the man who originated the digger game,” leading the International Mutoscope Reel Company and who had grown a fascination of steam-shovels operating in various Manhattan excavations.⁹ According to the article, Rabkin recognized an opportunity to cash on the steam-shovel spectacle. Rabkin’s

The Erie Digger
The Miniature Steam Shovel in
Plate Glass Showcase



To see it work, digging up gravel and bolders, is the great incentive. Built 100% stronger than required.

Often pays for itself in 10 days.

The greatest penny and nickel earner.

\$25,000 has been spent for special tools, dies, jigs, gauges, etc., to bring this machine down to a price within reach of everybody.

Erie Diggers are going out every day, an Extra force of men is working to enable us to fill orders promptly for the Spring Season.

All Arcades that have received their first Erie Digger, have since repeated their order.

You can not afford to leave the Erie Digger off your list in your Spring Buying, why not place your order now.

A deposit of \$35 insures you against disappointment.

Price \$100, F.O.B., Hartford, Conn.
On Exhibition and for Sale by

The Fair Trading Co.

307 Sixth Avenue New York, N. Y.

Fig. 1. The Erie Digger. Year unknown.

first digger game went into action in the 1920s at the Coney Island amusement park in New York, the “No. 1 test spot for coin-operated gadgets.”

He put a miniature steam-shovel behind a glass case, piled earth around it and the device delivered action by the shoveled up and delivered through a chute. Eventually, the big hunch came: why not load the case with merchandise which could be picked up as prizes if the operator were skilful [sic] enough? The combination was an instant success.

However, by adding the prize-feature, Rabkin was forced to redesign the device into a game of skill. Even if the claw cranes emerged decades before the *Erie Digger*, the latter thus represents a paradigm shift in design: instead of candies and monetary rewards, the *Erie Digger* provides winners with a

physical toy that eventually had a significant impact on the machine's identity.

During the Great Depression in the 1930s, the legal status of gambling activities improved in the U.S. Along the way, the claw crane saw an era where the toy prize was often accompanied by various rewards of higher monetary value. These events were archived in the 1950s, as the King County prosecuting attorney Carroll filed a request concerning the *Iron Claw's* (1928, [Figure 2](#)) position as a gambling machine. Ultimately, attorney general Troy responded as follows:

The U.S. court, in the decisions it has approved, has ruled that three elements are necessary for machines to be considered as gambling devices—(1) risk of something of value (consideration), (2) a prize, and (3) chance, a risk of loss or winning. There is no question but that two of the foregoing three requisites of a gambling device are present in each illustration presented by you. The important matter of inquiry therefore revolves about determination of the presence or



Fig. 2. The *Iron Claw* (1928). Pinball Repair.

absence of the third requisite, namely, chance, or substantial degree of skill as referred to in the cases. [. . .] If both elements of skill and chance are present, the test is whether the element of chance predominates over the element of skill.¹⁰

The above response makes a sophisticated illustration of the claw crane's dual game mechanic: a flexible combination of luck and skill-based vicarious kinesthetics.¹¹ Unlike the still-common tendency among journalists, policymakers, and scholars to address “games,” “videogames,” and “gaming” as a homogenous group, Troy explicitly acknowledges the diversity of claw cranes and passes a judgement with caution:

it is our opinion that within the contemplation of Rem. Rev. Stat. § 2472, supra, the enumerated devices are such as are “commonly used for gambling.” Though as heretofore indicated, we cannot on the basis of the information before us, advise that such devices, though “commonly used for gambling,” would in all cases be held to be gambling devices in the actual use thereof, regardless of the mechanics and details of operation, and in particular cases that might conceivably reflect a predominance of skill over chance.¹²

Notwithstanding Troy's caveats, new federal laws spawned and immediately led to a plummeting of U.S. claw crane production, thus ending what could be called the *First Wave of Claw Cranes*. According to Bailey, an independent historian of coin-operated machines, the claw crane was generally deemed

to be a [gambling] device and the new law known as the Johnson Interstate Transport Act banned the transportation of devices across State lines. This act would wipe out the operation of any Digger [claw cranes in general] that was electrically operated, also the traveling carnivals traveled nationwide and regularly crossed State Lines.¹³

Eventually, a police swoop down on claw cranes in Manhattan resulted in the impoundment of them as gambling-devices.¹⁴ According to Rabkin—the proclaimed inventor of coin-operated amusement devices—the “zealous harassment of New York's Finest” ended up driving the claw cranes out of town.¹⁵ Among many other countries, in Canada the claw crane was in the 2000s still considered illegal due to its strong element of chance, except at fairs and exhibitions that have a special permission.^{16,17}

In the U.S., however, the claw crane gradually returned to wider popularity with shooting, pinball, and other machines alike in the less

regulated legislation of the 1970s. This started the *Second Wave of Claw Cranes*, over which their appearance and function shifted radically: where the First Wave models were largely designed to imitate the steam shovel and provided cigarette lighters, watches, and other value items next to the toys, the appearance of the Second Wave models had drifted far from their more “mechanical” inspiration and were painted increasingly with bright colors that supported the newly emerging prize standard: plushies, or soft toy characters.

Roller, an amusements operator from these eras, recounts how children were just a cover story to lure the parents close to the machines during the First Wave: “Pretty soon the kid was off doing something else, and the parent would still be there, playing.”¹⁸ In those original machines, the design often illustrated a careful combination of charm for both children and adults; the former being *pulled in* by the simulated steam shovel and the latter being *kept in* by value prizes that entailed more skill (and luck and money) to be won. In other words, the machines had been designed to spark intergenerational play: play that exceeds age limits and, in the case of the claw crane, demonstrates an allure for a machine that attracts individuals across generations.

Often, at the heart of intergenerational play are transmedially emerging characters.¹⁹ The toyish interpretations of the characters typically take shapes of “cutified” dolls, action figures, and (as in the case of the claw crane) plushies. This further links to another presently thriving trend, *toyification*, that is, communication of an idea (either physical, digital or hybrid) that is intentionally reinforced with toyish elements or dimensions—objects, structures, applications, characters, or technologies acquiring toyish appearances, forms or functions.^{20,21}

Ngai notes that it was not until after the First World War that cute toys, in the sense of denoting an aesthetic of accentuated helplessness and vulnerability, began appearing in the U.S. in mass volume.²² Typically, cute objects, such as toys, have faces and even more importantly, large eyes.²³ According to Cross, cuteness was gendered from the start, drawing on the characteristics of animals and urchins for boys and angels and coquettes for girls.²⁴ Ngai views commercial cuteness to channel softness and pliability, making the cute object signal an invitation to physical touching. Many of these elements and dimensions are explicitly prominent in the emergence and aesthetic development of the claw crane and its (plush based) later generations.²⁵

Based on the above, it is possible to consider the plushie-filled claw cranes functioning as powerful invitations to play, channeling the promise of fulfilling the human urge to touch, as a cute object become available to

the player after a successful event of “doll drawing” (for the translated terms, see more below). This, we argue, ultimately served as a critical feature in Korea, in which the claw crane started proliferating in the late 1990s. We will return to the sociocultural details of the claw crane’s move to Korea later.

Although the 1970s’ player base was likely not as male-dominant as older histories indicate,^{26,27} it is arguable that most of the time’s claw cranes leaned largely toward design choices with boys and men as the target audience, especially across carnivals, (penny) arcades, and other entertainment centers. By the end of the First Wave, the claw crane had started colonizing public spaces more widely and in the U.S. the machines eventually became a common sight around bus stations, train stations, hotel lobbies, cigar shops, drugstores, and other daily life locations.²⁸ Perhaps due to this urbanizing factor, in part, the modern Second Wave machines were altered: the plush toy found its way as the key prize and the layout moved away from steam shovels. Along with the machine’s proliferation throughout cityscapes and the egalitarian societal progress in the U.S., the claw crane producers manifestly expanded their target audience. Ultimately, the claw crane also found its way into mainstream popular fiction; featured in Pixar Animation Studios’ films *Toy Story* and *Toy Story 3* (as the ‘Space Crane’ game inside the fictitious Pizza Planet restaurant). As digitalized versions of “The Claw” started appearing in other playable media such as *Toy Story: Video Game*, the crane had become an historically relevant item that accrued new meanings for players globally.²⁹ The focus was now transmedial, involving new dynamics between media consumers and producers—as well as romantically involved couples, which became an iconic part of crane representation. Next, we demonstrate this development in the context of Korea.

Gambling with Love

As illustrated above, the social element eventually became a key particle of claw crane design. Over the years, following the historical logic of arcade game design—to attract as many people as possible around the machine to multiply profits—claw cranes started to include multiplayer features such as more than one claw; moreover, the spectatorial aspect was given more and more attention by audiovisual and technical design decisions that would invite other people to watch the spectacle unfold.³⁰ Some of these decisions were specifically made to target romantic couples.

Whereas romance-themed coin-operated machines had existed at least since the 1940s (Figure 3), the Second Wave claw cranes established a design pattern that eventually turned into a cliché activity for couples and groups. By interweaving the essential skill-reflecting control of the claw with the plush prize, the claw crane enabled a playful space for gendered conventions. One approach to these play spaces draws from archaic notions of courtship—a “game of love” between potential love interests, which here centers around a toyfied play machine.³¹ As a modernization of the deeds of Medieval knights who performed to win the affection of

as long and as sure as **LOVE** itself

MUTOSCOPE'S

LOVE PILOT

WILL PILE UP PROFITS FOR YOU!

What's the greatest emotion of all? LOVE! And what is the **only** coin machine in the world that helps you cash in on love? THE LOVE PILOT! No doubt about it — years of big profit operation **prove** it — the LOVE PILOT is one of the **shrewdest, soundest** pieces of moneymaking arcade equipment **EVER** produced!

The action is fast. Real fast. The player merely places his or her hand on the palm-plate, drops a coin in the chute, and 10 seconds later the machine is ready for the next curious one.

Is he Shy? Hot? Cold? Bashful? A Hero? Tempestuous — Fiery — Lovable? The LOVE PILOT tells him (or her)! It's laugh-provoking, intriguing, irresistible.

Serious or curious — love-sick or frivolous — everyone tries the LOVE PILOT. Young or old, male or female, they **all** flock to the LOVE PILOT . . . positively charmed by its lively, hilarious, brilliant action. It's 100% LEGAL — a guaranteed moneymaker wherever the crowd is looking for fun — a coin magnet as strong and undying as Love itself!

Fleety artistically designed cabinet. Solid walnut frame work with special imported decorative wood panels. Highest type Enka. First class workmanship. Attractive top sign with modernistic mirror. Simple and solid mechanism, well tested, fast good. Motor drive. Reeling device, can be used on any 110 Volt A.C. or D.C. line. Speed Control. Standard lamps used.

Specifications: Height: 84", Width: 24", Depth: 22", Net Weight Appx.: 175 lbs., Gross Weight Appx.: 285 lbs.

Manufactured by

INTERNATIONAL MUTOSCOPE REEL CO., Inc.
44-01 ELEVENTH STREET LONG ISLAND CITY, NEW YORK

PRINTED IN U. S. A.

Fig. 3. The *Love Pilot* (1948). (Freddy Bailey. “The Crane Part One: 1926 The Birth of the Digger-Crane.” Coin-op Community Online, last modified January 5, 2014. <https://docplayer.net/42751306-The-crane-part-one-1926-the-birth-of-the-digger-crane.html>)

young maidens (as parodied and represented in historical novels since Cervantes' *Don Quixote*), the claw crane's function as a facilitator of courtship-related, romantic play is evident especially in media representations.

As an illustrative anecdote—which we further evidence in the next section—a recent thread in one of the world's largest discussion forums, Reddit, starts with the following observation from a fan of Korean TV dramas: "I've seen an odd trend of claw machine scenes in almost every modern k-drama I've watched, can anyone explain to me the reason why they're almost always included?"³² All the nine responses offer explanations and reasons, with three prevailing themes surfacing from them.³³ First, the claw crane is considered a special part of Asian and Korean popular culture, in comparison to other cultures. Second, the claw crane is considered an object that is frequently represented in audiovisual cultural forms. Third, the claw crane's presence in real-life urban environments as well as fictional representations is gendered and often connected to heterosexual "courting" where a man must win a prize to prove his skills for a woman.

With reference to the above, and with a warning to not overgeneralize the claw crane as a singular entity, the machine presents itself as an ad hoc "ego-booster:" the prize is typically winnable with a reasonable number of grabbing attempts; hence the player wins not just a prize but also a sense of accomplishment and pride. In the social situation of play, this also contributes to one's social status: the machine generates a positive illusion of potency that the playfully framed act of romance cashes in. The prize (plush) is rid of monetary worth at the expense of symbolic value: the spectacle is presented to the agency-lacking partner whose spectating responsibility is ultimately rewarded with a cute doll or other character toy. In videogame research, the parallel phenomenon has been discussed as "digital peacocking," next to which the claw crane could be perceived as supporting "analogue peacocking," with the physical city space acting as a public arena.^{34,35}

The above romantic dynamics resonate especially with the Korean gender paradigms. Even more than in Western contexts, the prize doll's iconic status is strongly empowered by the normalized "dollification" of femininity in Korean popular culture;³⁶ and at the same time, the "soft masculinity" of Korea—arguably one of the three dominant masculinities in Korea with "global" and "postmodern" masculinity—further supports, or makes possible, the idea of men engaging in adult doll play.³⁷ As the "provider," the man thus fills his gender role by playing the toy crane,

which again is enabled by the woman's lack of direct agency over the machine—but an expectation of a prize, which serves as a measure of both the man's care and competence.³⁸ In the later sections, we return to discuss these romantic dynamics in more detail.

The Crane Comes to Korea

To our knowledge, there are no reliable global data on the popularity and prevalence of the claw crane across countries. However, case evidence (some of which already cited) as well as our field site observations (20 physical visits to Korean entertainment spaces with local cranes) support the premise that Asian countries have become regions where the claw crane thrives. One recent study analyzed 60 unique claw cranes from Thailand and 30 unique claw cranes from Japan with the conclusion that “the current versions of crane games, together with the difficulty level and payout ratios, are the evolutionary outcome from operator trial and error, which will continue to develop.”³⁹ Although we are not concerned with the evolution in claw crane difficulty and win ratios, research findings like this highlight the interest that Asian regions have for the machine. In what follows, we take a closer look at the development, representations, and roles of the claw crane in Korea.

In Korea, the transformation of the claw crane's identity from gambling to courting took place under different labels. The Korean claw crane is commonly called *inbyŏngppopki* (인형뽑기), literally “picking up a doll” or “doll drawing,” whilst the legal term is the “crane game.” Markedly, the word's Korean prefix *inbyŏng* (인형, originally from 人形 in Chinese meaning “human shape” and possibly translated to “doll,” “puppet,” or “marionette”) attaches the plushie directly to the machine's identity: whereas the English “claw crane” is derived from the machine that grabs, the Korean *inbyŏngppopki* takes the doll prize as a key feature. Accordingly, while skill-based and partially randomized drawing still connotes gambling, the dolls provoke more cutified and feminine associations.

Some of these *toy cranes*—we use this term henceforth to emphasize the locally dominant character toys—likely found their way to the Korean market already in the 1980s via Japanese companies such as Sega and Taito, which had been influenced by the American industry (including that of cranes) for decades. The former company launched a “legendary model” of their *Skill Diga* (スキルデイガ) already in the 1960s: the machine was based on the American counterpart (*Diga* being Japanese for “digger”) and

was followed by *Super Skill Diga* (1968), *Diga Mart* (1983), and *New Skill Diga* (1984). When the latest machine of the time appeared in 1985, it was originally called *Eagle Catcher* but the name was abruptly changed into *UFO Catcher* (UFOキヤツチャー) due to the shape of the metal claw resembling an “unidentified flying object.”⁴⁰ These name changes reflect parallel technological change: in the same way as the steam shovel pioneered modern construction machines in the 1890s, the UFO was likely chosen by the increased interest in space technologies, thus keeping up with popular imaginations. Still designed to operate on skill-based vicarious kinesthetics, the requirement of physical mastery and its accompanied rewards made the *UFO Catcher* immensely popular among both adults and children already in the 1980s.⁴¹ Due to its outstanding success over the decades, the *UFO Catcher* is today synonymous with the claw crane in Japan.⁴²

In Korea, however, it was not until the late 1990s when toy cranes started widely appearing around city sidewalks. Some possible explanations for this delayed entrance can be drawn from infrastructural differences between the countries. While Sega and Taito were mass-producing toy cranes in the 1980s Japan, a parallel industry was being established in Seoul’s Cheonggyecheon electronics market based on creative copying and modification.⁴³ Although it would have been possible for the Korean technicians to manufacture toy cranes in the same way as other arcade games, the focus of their industry was mainly on circuit cloning and modification, which offered creative challenges for the local community of experts.⁴⁴ Toy Cranes—with their modest mechanical design and visually attractive elements—were likely not a priority for Korean technicians until the economic vector of crane business changed at the end of the 1990s.⁴⁵

The second half of the 1990s brought major administrative changes in local Korean governance. As Oh points out, in 1995 the first local governors and mayors were elected, and due to their relatively short tenures of four years—politicians wanting to be reelected—rapid infrastructural developments started emerging regionally, leading to an environment in which the local state and society envision “self-determined futures for their hometowns and energetically design projects for their own interests.”⁴⁶ At the edge of its financial crisis in 1997, Korea entered a time of neo-developmentalism where distributed financial power controlled the spaces of people’s daily lives, “extracting the maximum degree of exchange value from urban spaces.”⁴⁷

A concrete outcome of the above changes was the increase of the informal labor market, with street vendors and small-scale garment

factories. For instance, small-scale factories with five employees or fewer composed 76.5 percent of the entire latter industry.⁴⁸ In line with these trends, a new type of “pop-up shop” emerged, normally operated by self-employed entrepreneurs who rented commercial space by what is called *kkalse* (칼세), indicating a contract period (1–12 months) without deposit. *Kkalse* stores were usually ran by a “one-dollar principle” that favored cheap entertainment, including toy cranes. After prospering for a couple of years, the cranes disappeared almost completely with the *kkalse* around early 2000s. A brief return occurred before 2010, which did not last long likely because of the immense proliferation of smartphones and the rise of mobile games.^{49,50}

Interestingly, the toy crane’s pre-boom peaks of popularity in Korea seem to dovetail the country’s economic valleys somewhat accurately: the initial proliferation in the late 1990s and the resurgence in the late 2000s correspond with the times of financial crises, as most observers do not fail to point out.^{51,52,53} The validity of this pattern is often exemplified by a precedent case from Japan. When Japan suffered from long-term depression from the early 1990s on, one of the most vibrant industries were gaming and gambling, including the *UFO Catcher*.⁵⁴ Yet, it was a time of prosperity when the *UFO Catcher* first became a hit around 1986 in Japan. When explaining the machine’s design concept and the context of its emergence, Ogata, the developer of the *UFO Catcher*, highlighted “the relaxing sense of the times.”⁵⁵ Following the trend, Ogata thought of the machine as a consumable by “time of entertainment” (30 seconds for 100 yen) and revised the machine by increasing the success rate (average one third winning rate). To compensate for the increasing cost of prize provision, it was necessary to start using dolls with a cost of only 8–10 yen.^{56,57} Ogata had the idea of the dolls on a business trip to Korea in 1978, coming across a pile of animal-like dolls on a street and purchasing them for an *UFO Catcher* that had not yet been popular. After the tremendous popularity of the doll prize, Sega moved to manufacture famous animation character dolls of its own.⁵⁸

According to Ogata, a critical factor for the *UFO Catcher*’s success was the dolls being used as the main prize, which enabled attracting girls and women to arcade centers in the mid 1980s Japan—the producer, Sega, had a calculated strategy for including female players.⁵⁹ According to the data collected by Euromonitor International, an agency specialized in market research focusing on the toy sector, toys targeted to over 20-year-olds in Japan have accounted for more than 20% of all traditional toy sales.⁶⁰ For example, many collectible action figures and capsule (vending) toys—an

adjacent toy outlet to the toy crane without the mechanics of gambling—are now aimed at adults and female adults in particular. These cultural and gender dynamics, we argue, partially account for the toy crane’s Korean success, too.

In the same way as in Japan, the aesthetics of “cute” have been highly influential in Korean technological design and digital marketing at least since the 2000s. As an early instance, the cutified racing game *Kart Rider*, developed by Korean Nexon in 2004, became a sensational local hit with two million daily players—encouraging players of all genders to engage in shared play activities.⁶¹ Toy cranes can be considered preceding and continuing this trend, which we contextualize and further elaborate on in the next section.

Korean Doll Economics

Historically, romance in Korea has been significantly influenced by Confucianism, characterized by extreme gender segregation and a double standard of sexual morality.⁶² As a result, interactions between heterosexual romantic partners were mediated by cultural products already long before toy cranes. Kwon, among others, recounts how the Choson society strictly limited direct contact between genders and prescribed rules for segregation past the age of seven.⁶³ In this setting, love letters emerged as an early medium for social and romantic interaction, penetrating societal hierarchies and being represented in works of literature with other media such as music, for “it was usually seduction by sound that jump-started amorous encounters between young men and women.”⁶⁴

In later periods, other cultural products and spaces have served similar purposes. For instance, Kang’s examination of Korea’s unique “room” or “bang” (방) culture highlights how many modern PC bangs provide “love seat” stations with two computers and a bench for couples, thus allowing for young people’s romantic interactions to be mediated by play activities.⁶⁵ Although it was less common for girls and women to visit PC bangs in the 1990s,⁶⁶ ethnographers have later made repeated observations of cross-gender play until the present day, which supports looking at the emergence of toy cranes, too, through their socially mediating roles in Korea.⁶⁷

One more recent factor has come to contribute to the increasing engagement in playful activities across age and gender groups in Korea. The notion of *kidult*—“an adult that prefers items that society deems are

for a younger person [and] plays with toys or games”⁶⁸—has now a recognized position in the adult marketplace, catering for the needs of mature individuals with an interest in playful objects and services. The kidults of today complicate previous gender roles, as they represent both male and female consumers with an interest in character toys, miniature environments, transmedia playthings, and so on.⁶⁹ The Korea Creative Content Agency reported that the local market for kidults was worth more than one trillion won (US\$880 million) as of 2016.⁷⁰

The increasing demand for toys and play activities also coheres with the economic theories that predict uncertainties usually coming with specific attitudes of consumption. Often those attitudes tend to generate a demand for inexpensive products at the expense of luxury items, which is commonly referred to as the “lipstick effect,” with the Korean vernacular *t’angjinjaem* (탕진잼, “runthrough-fun”).⁷¹ This “petty extravagance” was voiced, for instance, in the song *Go Go* by the Bangtan Boys (BTS), released in September 2017. At the same time, doll drawing had become a common play activity among the young generations in particular—a viable means of escape from the pressure of the hyper-competitive education, precarious job markets, and the more than common burden of debt repay.^{72,73,74} Considering the element of randomness involved, one might consider it as “light gambling,” for instance, in contrast to bitcoin speculation, which started booming in the same period.

A further rationalization for the interrelationship between toy cranes and economic struggle is the machine’s psychological narrative (not unlike many other forms of gaming). Initial doll drawing efforts rarely yield results, but a few extra attempts are usually enough for the reward (one attempt costs typically between 500 and 1000 won, i.e., 0.44–0.88USD). In this way, the toy crane provides a relatively easy and secure experience of victory through struggle, which yields feelings of accomplishment that represent opposite scenarios to the reality where even the greatest efforts in school and work have high chances of ending in disappointment. The dolls and their successful drawing thus enable self-enhancing “casual” play that is accessible without the socio-technological burden of (still stigmatized) “gaming” and serves as an ad hoc “ego-booster” during times of disappointment and uncertainty.⁷⁵

According to a classic psychological investigation of arcade players in the early 1980s USA, one of the key reasons for players to try again after failure is to eliminate regret by correcting the mistake that had been just made.⁷⁶ In gambling research, this is known as “loss chasing,” which is today a common experience in many digital play types as well.^{77,78} We may



Fig. 4. A toy crane in Gwangbok-dong (Busan).

entertain the possibility that, especially during times of uncertainty, the “ego-boosting” effect is enhanced by this “catching the losses,” which the toy crane is designed to provide. After failed drawing attempts, players can liquidate their regret by retrieving fortune in exchange for an extra coin. These positive narratives are further intensified in media representations, as discussed below.

Recessions and other financial downturns have visible effects also on urban spaces, which we argue further facilitated the toy crane’s success in Korea. A common consequence of regional economic struggle is the subsequent increase of unfilled real estate due to the decreased number of financial surplus. In Korea, this resulted in a rapid proliferation of smaller outlets and self-service machines—including the toy crane—whose costs of maintenance and production are minimal. In 2015, at the aftermath of the recent worldwide economic crisis, many vacant spaces in urban centers were thus dedicated to toy cranes. This continued the previously noted trends of bang-based entertainment, manifesting as *inbyongppopkibang* (인형뽑기방, “doll drawing rooms”) or *ppopkibang* (뽑기방, “drawing rooms”). According to the National Game Rating and Administration Committee, the number of registered doll drawing rooms nationwide jumped from 21 in 2015 to 800 in

2016 and further to 1164 in 2017.⁷⁹ The data do not include the stand-alone machines set up near convenience stores, restaurants, and subway stations, let alone multiplexes and other amusement facilities, which are allowed to install up to five toy cranes without registration.

The rooms, *ppopkibang*, could be left unattended without staff expenses, as technological progress had enabled efficient automatic cash changers and remote surveillance cameras. The *ppopkibang* could thus run 24/7 with extremely small costs that, at the time of amplifying labor fees and weakening domestic consumption, struck investors as an opportunity. In the Korean news media, however, several reports voiced concern regarding the rise of the toy crane and its potential adverse effects. According to the Korea Integrated News Database System that includes related records since 1990, the peak of toy crane news was in 2017 and the most frequent related terms were “cash changers,” “criminal accusations,” “theft,” and “speculation.”⁸⁰ The dominant perspective on the toy crane included possibilities of “addiction” and “gambling” related to machine manipulation and modification, being generally associated with various kinds of “fraud.”^{81,82}

Toy Cranes in Seoul

Speaking of toy cranes in 2011, a popular tourist guide to Korea wrote: “these games can be found everywhere. . . . on every major street there are probably a couple of these things, even in smaller towns.”⁸³ Although our study is not an ethnographic one, we considered it important also to observe actual toy cranes in Korea via field work in Seoul, thus adding to the previous analyses. We visited 20 unique Korean doll drawing rooms in November 2018 to reflect on our historical and theoretical insight with field evidence. All these rooms were situated in the Seoul area. The goal was not to pursue representative sampling, quantitative mapping, or accurate description of specific sites, but to ensure that our primary sources (discussed in other sections) are consistent with the present reality of Korea’s capital. The first author applied convenience sampling by entering every encountered entertainment room with toy cranes in the main districts of Seoul (Dongdaemun, Seodaemun, etc.) until the rooms started providing little new information, that is, similar designs, spaces, and player groups begun to occur (saturation). This happened slightly before the 20th visit, but a round number was selected—sometimes it was difficult to assess whether the space could be considered *ppopkibang*. We additionally

note that one of the authors is native to Seoul, which gives us an epistemologically triangulated multi-perspective to the cityscape and its cultural context.

One of the key observations from these field visits confirms the plurality of how toy cranes are positioned in space: whereas many public entertainment rooms had been dedicated specifically to this machine alone—representing *ppopkibang* (Figure 5) explicitly—the majority of all toy cranes were found as part of other entertainment rooms, shops, and streets corners in general. Most toy cranes had globally known plush toy characters as their prize. Likewise, consistent with the other sources used in our research, it was rare to see a toy crane being played by one person alone; rather, two or more players were usually involved. Two of the most common play scenarios were a small group of adolescents collectively cheering for a peer's doll drawing attempt, or a young couple playing together. It was not uncommon to see a family playing (e.g., children steering the claw with the help of parents—an occurrence of intergenerational play) either, but solo players were rare. In the latter cases, the player was usually a middle-aged man trying to catch an expensive prize, reminding of Benjamin's solitary gamblers who do it for the "love of the self."

Gambling has passionate devotees, who love it for its own sake and not for what it brings them. Indeed, if it strips them of everything, they tend to blame themselves: they say, "I played badly." And this love contains its own reward, to the point where they even love their losses because this enables them to demonstrate their capacity for self-sacrifice.⁸⁴

Arguably, one reason for the toy crane to have become a standard component also in other entertainment rooms is the latter's significantly expanded size—as happened in Japan since the mid-1980s.⁸⁵ For instance, Zzang Electronic Entertainment (established in 2016 as a franchise of retro gaming arcades) opened a dedicated three-story building in 2017 at the *Hongdae* (홍대) district in Seoul. While the second and third floors have a wide variety of arcade games, the first floor was filled with approximately forty toy cranes with literally hundreds of different character dolls. It is not a coincidence that the above enterprise was established in *Hongdae*. Known as the area of Seoul's students and young people, the location matches accurately with the toy crane's Korea-specific identity, provoking social play among couples in particular. As a spectated spectacle, doll drawing—an invitation to play situated on the visible first floor—attracts passersby to watch and join in; an element equally present in other arcade games but enhanced in toy cranes by their character-driven thematic and spectator-



Fig. 5. Ppopkibang in Sinchon (Seoul). Authors' photo from field.

driven “cute” design (the cabin is transparent from all sides in contrast to the usual single-screen arcade games).

Some of the observed toy cranes highlighted a couple-oriented design verbally and/or visually but were not consistent regarding the theme. For instance, the “Luxury Love Push” (Figure 6) makes it very explicit that the



Fig. 6. A toy crane in Daerim (Seoul). Authors' photo from field.

game is supposed to be played for “love.” The term “luxury,” in turn, communicates a higher-stake gambling element: this is one of the more expensive cranes (1000 won), but victory will be rewarded with a more expensive prize, too. On the other hand—despite offering the usual pool of various toys—most of this machine’s prizes (pocketknives,

watches, etc.) seem to be entirely unrelated to its romanticized appearance, which indicates a marketing strategy of trying to catch the attention of multiple audiences. It is this evolving hybridity that seems to characterize the toy crane in Korea: a play machine situated at the same time indoors and outdoors, available for human relationships across age and gender groups.

In a recent ethnographic study on Seoul's present-day Dongdaemun market, Park maps out the daily life of workers especially in the fast-paced garment industry: high-pace and continuous demands created by an exploitative ecosystem have led to worker fatigue in a "flow of life that is dense and messy."⁸⁶ Although we did not interview doll drawers, witnessing their ephemeral engagement from distance allows drawing some connecting interpretations. Compared to other arcade games, cinema, or television dramas, doll drawing sessions tend to last significantly less (only a few minutes), which makes them more flexible to fit in the busy lives of contemporary Korea. This element of "runthrough-fun" (see previous section) was communicated by positioning the machines strategically in the open, inviting by-passing customers to an ephemeral "quick fix" that would not often require even entering a building. Our field visits were carried out before the COVID-19 pandemic, but we may retrospectively reflect also on related spatial hygienics: the toy crane's availability and ease of use likely removed some of the haptic barriers that characterize parallel indoors activities.⁸⁷ In the following section, we conclude with an examination of toy crane media representations in the established sociocultural context of Korea.

Toy Crane Transmedia

Social media trends in Korea present the toy crane with a rather similar story as the previously cited news media. First, the evidenced local "boom" is further supported by the company Daum Soft, whose research on regional social media trends shows a skyrocketing jump in the use of "*inhyŏngppopkei*" terms; namely, from 18,118 mentions in 2014 to 158,961 mentions in 2016.⁸⁸ The company elaborates on the numbers by adding that the most common word found in these mentions was "cuteness," which gives the previously introduced cultural dynamics emphasis. Furthermore, in support for our analysis of the toy crane as a designed "ego-booster" related to economic uncertainties, the three terms that followed in popularity were "fun," "achievement," and "poor(ness)."⁸⁹

The number of girl and women players in Korea begun to increase in the 2000s along with smoke-free PC bangs, online games, and less gendered videogame titles (recall *Kart Rider*), which collectively reduced social obstructions around gaming.^{90,91} These changes also include the mounting prominence of “cute” iconography; a factor explicitly represented by the plushies that operate as the essential prize of Korean toy cranes. Such instances further encouraged girls and women to enter a play activity in public urban spaces without the explicit threat of “gaming stigma,” which still tends to govern the related local discourse and social perceptions. The plushies’ implied nostalgia has further served as an explanation, justification, or excuse for doll drawing in the Korean context.⁹²

Based on our field visits, “cutification,” as a sub-theme of toyification, is dominant. Although the prizes of Korean toy cranes range from action figures and drones to electronic gadgets and jewelries, the list of the most common prizes consists of plush dolls: Pikachu from the Japanese card game *Pokémon* (which became fad in late 2016 along with the release of *Pokémon GO*), Bonobono from the Japanese 1980s manga series, Doraemon from the Japanese 1960s manga series, Moomins from the Finnish 1940s book series, and Kakao Friends and Overaction Rabbit from local social media brands Kakao and Line (Figure 7). These items, in addition to serving as cutified attraction, also represent the globalized culture as well as transmedial flow—from comics, films, and novels to TV series and other media appearances. Ultimately, the representations are further “re-represented,” as the play of toy cranes continues online (*ppopki broadcasting*) via live-stream platforms such as the local Afreeca TV and the international YouTube. We provide selected examples below.

The transmedia flow is accurately depicted in a 2017 novel *Naŏi syup’ŏhŏoro ppopkimaen* (나의슈퍼히어로 뽑기맨, My Superhero Drawing-man), a winner of the 7th Munhakdongne Publishing Co. Book Award for Youth Literature. The novel tells a story of a man who suffered from unexpected back pain and unemployment, but eventually became the “King of *Ppopki*.” Reflecting the previously discussed age and gender roles, the events are narrated with the voice of the protagonist’s fifteen-year-old daughter, with sympathy and pride for her father. The story begins by the hero, influenced by his daughter, commencing to read the Japanese manga *One Piece* (ワンピース, 1997). After finding a toy crane around the corner of a neighbor convenient store, he decides to win what his daughter adores the most: character doll *Chopper* from *One Piece*. A series of dramatic episodes ensues, as the hero enters excessive practice, eventually accomplishing what is



Fig. 7. A toy crane in Dongdaemun (Seoul). Authors' photo from field.

desired—live-streamed via Afreeca TV—in the mix of numerous subcultural trends and an emphasized metaphor for the laypeople's struggle to confront contemporary hopelessness and eliminate regret. As toy crane playing is described in terms of the man's caring for his family and the neighborhood, the novel highlights masculine intergenerational play.

In a different context, that of reality television, a popular talk show *Hello Counselor* (안녕하세요)—aired by the national Korea broadcast KBS—reflects the everyday lives and relationships of Koreans. Throughout an episode called “My husband's sickening obsession” (2016), a young couple discusses their relationship. One of the problems is the unemployed husband's increasing time spent outdoors, including excessive playing of toy cranes. At the time of the show, he has assertedly spend 400 US dollars on doll drawing and won no less than 80 unique plush toys, which he has brought home to his wife (Figure 8). The husband is made fun of for having tried to sell some of the toys, which is clearly against the gender code that would rather position him as a provider who lets the wife have the price.⁹³ Again, the toy crane is presented as an instrument for the man's success (“I started it for fun, but I turned out to be good at it”), perhaps



Fig. 8. The husband's toy crane price collection from *Hello Counselor* (2016).

offering ego-boosting and satisfaction in a life situation where career opportunities are difficult to pursue.

Other—and so far, perhaps the most influential—cultural representations of the toy crane boom in Korea derive from modern local TV drama (K-drama). In general, TV drama representations exhibit a local twist, unlike the more globalized film products with cranes, such as the *Toy Story* film series. Although K-dramas have increasingly penetrated international entertainment markets since the late 1990s, their rapid development has also led to risky industry models that often systematically seek contemporary trends with hopes for instant success.⁹⁴ According to Oh's review of the modern K-drama industry, the extremely slim chance of making a hit and “the blind expectation of popularity is nothing more than the creation of risks, that is, equivalent to the practice of gambling.”⁹⁵ Ironically, the calculated introduction of the toy crane—a gambling machine itself—into multiple recent K-dramas speaks accurately for the industry's opportunistic search for popular, trending references (preceding the recent success of *Squid Game* [오징어 게임], which similarly utilizes common knowledge of children's games).

Starting from the mid 2010s, various popular, high-rating K-dramas begun including toy crane play in their narratives, especially in romantic scenarios such as those of the *Doctors* (2016), *Legend of the Blue Sea* (2016–17) and *Goblin* (2016–17)—evidently a circular process advanced by the increasing popularity of toy cranes. For example, in the most sought-after K-drama of 2018, according to Google search engine, *What's Wrong with Secretary Kim* (Figure 9), a vice-chairman of a major corporation has a date with his secretary by the toy



Fig. 9. Scenes from Korean TV drama *What's Wrong with Secretary Kim* (2018).

crane. The date is presented as the vice-chairman's first doll drawing session ever; he fails, yet gets fixated on the machine and keeps on playing alone. On the following day, he finally wins a doll and goes to hand it to Secretary Kim as a gift. This, again, exemplifies the toy crane's function in courtship play; and indeed, the crane works as "analogue peacocking" now in a mix of curation, transmedia consumption, and gendered romantic role-play.

The toy crane K-drama representations, which tend to follow the narratives of the above examples, maintain the status quo of dominant Korean gender roles.⁹⁶ A typical instance of such scenario involves a heterosexual young couple engaged with the machine; the male standardly being an active player and the female a passive spectator, the former thus winning a plushie that is ultimately handed to the latter in terms of courtship. As one critic noted, the toy crane is often portrayed as the “symbol of love not yet realized,” or, in the cultural context of local dramatic clichés, a foreshadowing entity for the male’s “determination to win his love.”⁹⁷ This role-playing is even encouraged in the printed cover of the machine (Figure 4), the header stating: “Honey, let’s play a round of *ppopkei?*” And the footer following: “*Oppa*, right there, poke~ poke~.”⁹⁸ The Korean toy crane has become aware of its identity as a courting machine.

The above sequences present the toy crane as a facilitator of accomplishment and pride, while liquidating the regret of trials and errors. The latter does not concern play alone, but also romance and the daily challenges of life, as typically highlighted by the hero’s routine setbacks of various sorts. As it is now common in Korea for the “things that are done or seen on screen get played out in real life,”⁹⁹ the toy crane’s role as a mediator of courting and emotional support construct a cycle: historical and sociocultural contexts priming people to enact their roles, which are then further encouraged by local toy crane design and reproduced across various transmedia forms—ultimately leading people once more to emulate and exaggerate their behaviors as “hyperreal” simulacra.¹⁰⁰

Because the toy cranes simultaneously optimize their winning mechanisms toward the hyperreal, loss chasing players merge with Benjamin’s description of gambling as assembly-line labor that occupies players and liquidates their experiences by reset—a new attempt has “no connection with the preceding operation[s].”¹⁰¹ Toy drawing reminds one of the often-unsuccessful investments in real estates, stocks, and cryptocurrencies, but with lower stakes and higher chances to, occasionally, reach small but pleasurable material and social victories. In this cycle, the toy crane is a medium for romantic interaction and emotional support in the face of challenges that life may have set on one’s way.

Conclusions

The claw crane’s evolution from its steam shovel roots to a plushie-branded machine makes a unique chronicle. Historically, we discover the

claw crane as an artifact in change; evolving from a North American entertainment invention into a globally spread urban phenomenon that has now claimed its space within metropolitan cityscapes and urban playgrounds dedicated to experience consumption. As a design entity of commerce, gaming, and popular leisure, what was originally positioned as a gambling apparatus now stands as a focal point of comfort and courting in increasingly uncertain times—potentially being used to cope with hardships. In the regional context of Korea where plush dolls serve as the frontline prize, the above practices of techno-cultural reception merge with the local conventions of gender and transmedia flow, as popular culture representations reinforce existing trends and narratives. It remains for future research to investigate whether these TV dramas, novels, and real-life toy crane experiences support the wellbeing of their consumers, or rather maintain procrastination as “hope torture.”¹⁰²

The toy crane’s present position as an urban play machine in Korea’s media discourse provides a multifaceted reflection of how culture and economy interact, producing specific spatiotemporal phenomena. In this context, several questions surface, calling out for further research to be conducted especially on the values related to the spatially and temporally constrained play activity. To what degree are similar patterns of cultural and economic development related to claw cranes around the world, or do these instances relate to the specific Korean sociocultural conditions? Furthermore, what meanings are given to the spectated event after the tension (and public performance) ends: is the toy reframed as a memento or a container for romantic memories of people and space embedded in the acts of urban romance—or will it acquire independence as an object? Studies could help us better understand how people adapt to the evolving media use and potentially apply it to cope with life challenges.

Notes

1. Erkki Huhtamo, “Slots of Fun, Slots of Trouble: An Archaeology of Arcade Gaming,” in *Handbook of Computer Game Studies*, ed. Joost Raessens and Jeffrey Goldstein (Cambridge: MIT Press, 2005), 3–21.
2. Katriina Heljakka, “*Principles of Adult Play(fulness) in Contemporary Toy Cultures: From Wow to Flow to Glow*” (Doctor of Arts diss., Aalto University, 2013).
3. See, Jackie Botterill, “*The ‘Fairest’ of the Fairs: A History of Fairs, Amusement Parks, and Theme Parks*” (PhD diss., Simon Fraser University, 1997).

4. See, Joseph Pine and James Gilmore, *The Experience Economy* (Harvard: Harvard Business Press, 1999).
5. Allen Kevorkov, "History of Claw Cranes," Be the Claw – Home of the Claw Machine Addicts, accessed May 13, 2021, <http://www.betheclaw.com/history.html>.
6. Jake Rossen, "Dime After Dime: A Gripping History of Claw Machines," *Mental Floss*, July 7, 2016.
7. Yoon Dasl, "Grasping for Hope, Claw Arcades, and Youth Unemployment – Swell in South Korea," *The U.S News*, September 29, 2017, <https://www.usnews.com/news/best-countries/articles/2017-09-29/south-koreas-claw-arcades-explode-in-popularity>.
8. "Erie Digger," International Arcade Museum, accessed May 14, 2020, https://www.arcade-museum.com/game_detail.php?game_id=2223.
9. "Nickel-Eaters: The Story of the King of 'Diggers,' Peep Shows and Slot Devices," *The Literary Digest*, June 5, 1937, 17–8.
10. Troy Smith, "Gambling Devices: 'Iron Claw' Machines," *Washington State*, January 17, 1952, <https://www.atg.wa.gov/ago-opinions/gambling-devices-iron-claw-machines>.
11. Veli-Matti Karhulahti, "A Kinesthetic Theory of Videogames: Time-Critical Challenge and Aporetic Rhematic," *Game Studies* 13, no. 1 (2013), http://gamestudies.org/1301/articles/karhulahti_kinesthetic_theory_of_the_videogame/.
12. Smith, "Gambling."
13. Freddy Bailey, "The Crane Part Two: The Comeback in the 1980s," Coin-op Community Online, last modified January 5, 2014, <https://archive.coin-opcommunity.co.uk/wp-content/uploads/2014/09/The-Crane-Part-Two.pdf>.
14. "Nickel-Eaters."
15. *Ibid.*
16. Michael Lipton et al., "Games of Skill and Chance in Canada," *Gaming Law Review* 9, no. 1 (2005): 10–8.
17. See also, Bob Snyder. "Skill Carne Operators Can Defend Against Unfair Practices Lawsuits," *Vending Times* 37, no. 1 (2003).
18. Rossen, "Dime."
19. Heljakka, *Principles*.
20. Katriina Heljakka, "Toys as Tools for Skill-Building and Creativity in Adult Life," *Seminar.Net. International Journal of Media, Technology and Lifelong Learning* 11, no. 2 (2015): 134–48.
21. Mattia Thibault and Katriina Heljakka, "Toyification. A Conceptual Statement," *Proceedings of the 8th International Toy Research Association World Conference*. International Toy Research Association (ITRA), July 2018, Paris, France, <https://hal-univ-paris13.archives-ouvertes.fr/hal-02083004>.
22. Sianne Ngai, "The Cuteness of the AvantGarde," *Critical Inquiry* 31, no. 4 (2005): 811–47.
23. Marilyn Ivy, "The Art of Cute Little Things: Nara Yoshimoto's Parapolitics," in *Fanthropologies: Mechademia Volume 5*, ed. Frenchy Lunning (Minneapolis: University of Minnesota Press, 2010), 23.

24. Gary Cross, *The Cute and the Cool. Wondrous Innocence and Modern American Children's Culture* (Oxford: Oxford University Press, 2004), 44.
25. Ngai, "The Cuteness."
26. See, Ellen Lupton, *Mechanical Brides: Women and Machines from Home to Office* (New York: Princeton Architectural Press, 2003).
27. See also, Lauren Rabinovitz, *For the Love of Pleasure: Women, Movies, and Culture in Turn-of-the-Century Chicago* (New Jersey: Rutgers University Press, 1993).
28. Bailey, "The Crane."
29. "The Claw." Pixar Wiki, accessed December 20, 2019, https://pixar.fandom.com/wiki/The_Claw.
30. Veli-Matti Karhulahti and Pawel Grabarczyk, "Split-Screen: Videogame History through Local Multiplayer Design," *Design Issues* 37, no. 2 (2021): 32–44.
31. Karl Groos, *The Play of Animals* (New York: D. Appleton and Company, 1898).
32. "Claw Machines." Reddit. An online discussion thread, accessed June 28, 2020, https://www.reddit.com/r/KDRAMA/comments/hh9nve/claw_machines/.
33. All the responses listed below in the order of appearance.
 - a) "They're EVERYWHERE in Korea too. Walking down the street you can easily find one or two cubbies hiding away a selection of claw machines."
 - b) "They're everywhere in Asia. They're a nostalgic part of every kid's childhood, including mine! But adults (friends, couples, etc) have fun with them too . . . Even at 60+ my dad always tries to win my mum something from the claw machine when they come across one . . . While my mum tries and fails to help very noisily lol. It's been their "thing" since they were dating as a young couple haha. Kdramas took inspiration from real life, not the other way round!"
 - c) "because it's cute and to show how they struggle to impress their partner."
 - d) "Seems to be a common trope, even in mangas."
 - e) "I read somewhere that it's become a dating thing in South Korea inspired by Kdramas, which probably inspires more kdrama writers to add it to their drama,"
 - f) "Common cutesy romance trope It's seen a lot in jdrama and anime as well"
 - g) "Claw machines are kind of seen as childish and a game. So having male leads use it to try impress someone they like brings out their childish and competitive side, which is seen as cute and a cause of his feelings for the female lead. I don't think it's too deep as much as it's a convenient way to indicate or symbolise the male lead's feelings."
 - h) "Winning and losing can set up an interesting dynamic between two people. We can learn something about the characters based on their reaction to winning and losing . . . Especially in front of someone they're trying to impress."

- i) In the last comment, a discussant notes that “I don’t get it . . . I’m pretty sure I’ve never seen any of them anywhere in real life,” which is followed by replies that highlight the claw crane to be an Asian and Korean phenomenon in particular: “No offense, I’m not trying to be mean, but how is this relevant if you live in Europe,” “Just respect that it might be an Asian thing,” and “they don’t exist in your country or Europe, because kdramas are set in Korea.”
34. Zack Mendenhall, Marcelo Nepomuceno, and Gad Saad, “Exploring Video Games from an Evolutionary Psychological Perspective,” in *Encyclopedia of E-Business Development and Management in the Global Economy*, ed. In Lee (Hershey: IGI Global, 2010), 734–42.
35. See also, Benjamin Lange and Frank Schwab, “Game on: Sex Differences in the Production and Consumption of Video Games,” in *Evolutionary Psychology and Digital Games: Digital Hunter-Gatherers*, ed. Johannes Breuer et al. (New York: Routledge, 2018), 193–204.
36. A. Aljosa Puzar, “Asian Dolls and the Westernized Gaze: Notes on the Female Dollification in South Korea,” *Asian Women* 27, no. 2 (2011): 81–111.
37. Jung Sun [Chŏng Sŏn], *Korean Masculinities and Transcultural Consumption: Yonsama, Rain, Oldboy, K-pop Idols* (Hong Kong: Hong Kong University Press, 2010).
38. See, Moon Seungsook [Mun Sŭngsuk], “The Production and Subversion of Hegemonic Masculinity: Reconfiguring Gender Hierarchy in Contemporary South Korea,” in *Under Construction*, ed. Laurel Kendall (Honolulu: University of Hawaii Press, 2001), 79–114.
39. Rachaya Chiewvanichakorn, Nathan Nossal, and Hiroyuki Iida, “Game Refinement Model with Consideration on Playing Cost: A Case Study Using Crane Games,” *The 7th International Conference on Knowledge and Smart Technology* (New York: IEEE, 2015), 87–92.
40. Brian Ashcraft and Jean Snow, *Arcade Mania: The Turbo-Charged World of Japan’s Game Centers* (Tokyo: Kodansha, 2009), 17–8.
41. Eric Eickhorst, “Game Centers: A Historical and Cultural Analysis of Japan’s Video Amusement Establishments” (MA diss., The University of Kansas, 2006), 30–1.
42. Ashcraft and Snow, *Arcade Mania*, 17.
43. Dongwon Jo, “Bursting Circuit Boards: Infrastructures and Technical Practices of Copying in Early Korean Video Game Industry,” *Game Studies* 202, no. 2 (2020).
44. Dongwon Jo, “Vernacular Technical Practices Beyond the Imitative/Innovative Boundary: Apple II Cloning in Early-1980s South Korea,” *East Asian Science, Technology and Society: An International Journal* (2021).
45. Based on a secondary analysis of our earlier interview data with active Korean hackers in the 1980s and 1990s, we know that other arcade games with special off-screen features were being developed and modified, such as *Hang-On* (Sega, 1985) and *Pump It Up* (펌프 잇 업). Therefore, our speculation about the lack of local interest in “visually attractive” design might be unfounded. On the other hand, none of these other arcade games provided prizes or gambling elements.

46. Youjeong Oh, *Pop City: Korean Popular Culture and the Selling of Place* (Ithaca and London: Cornell University Press, 2018), 5.
47. Oh, *Pop City*, 8.
48. Seo Young Park, *Stitching the 24-hour City: Life, Labor, and the Problem of Speed in Seoul* (Ithaca and London: Cornell University Press, 2021), 15.
49. See, Larissa Hjorth, “Being Real in the Mobile Reel: A Case study on Convergent Mobile Media as Domesticated New Media in Seoul, South Korea,” *Convergence* 14, no. 1 (2008): 91–104.
50. Larissa Hjorth, “Relocating the Mobile: A Case Study of Locative Media in Seoul, South Korea,” *Convergence* 19, no. 2 (2013): 237–49.
51. Pyun Gwanghyun, “Grasping for Entertainment: The Rise of Claw Machines in South Korea,” *The Peninsula Blog: Korea Economic Institute of America*, last modified, February 8, 2017, <http://blog.keia.org/2017/02/grasping-for-entertainment-the-rise-of-claw-machines-in-south-korea/>.
52. Kang Buwŏn, “Inhyŏngppopkiüi yuhaenggwa tijit’örhwa toen analogŭ kigyee taehan hwansang” [Claw Crane Boom and Fantasy of Digitalized Analog Machine], *Kukcheŏmunbak’oe Haksultaehoe Charyojip* [The Conference Proceeding of the International Association of Language & Literature], no. 2 (2018): 41–55.
53. KH Digital, “Slowing Economy Lures Young Koreans to Claw Machines,” *The Korea Herald*, February 3, 2017, <http://www.koreaherald.com/view.php?ud=20170203000121>.
54. Kang, “Inhyŏngppopkiüi,” 42.
55. “[Int’öbyu] il sega ent’öp’üräijü ogat’a t’ak’enori chŏnmu” [Interview: Takenori Ogata, executive director of Sega Enterprise in Japan], *Etnews*, September 21, 1995, <https://www.etnews.com/199509210046?SNS=00002>.
56. “K’ürein keimüi shich’o 「UFO k’aech’ö」” [Beginning of Crane Game 「UFO Catcher」], *Game Champ*, April 1996, 153.
57. Shikewei, “Slot Machine → Self-Selling Machine → Doll Machine . . . N Eras of Coin-Operated Entertainment,” *SQV/ANIM*, June 21, 2019, <https://jigamemachine.com/news/187-en.html>.
58. “Beginning of Crane Game <UFO Catcher> [in Korean].”
59. “K’ürein.”
60. Utku Tansel, “Why Should Toy Manufacturers Focus More on Adults?” *Global Toy News*, March 8, 2013, <https://www.globaltoynews.com/2013/03/why-should-toy-manufacturers-focus-more-on-adults.html>.
61. Hyeryoung Ok, “New Media Practices in Korea,” *International Journal of Communication* 5, no. 1 (2011): 320–48.
62. Young-Hee Shim, “Feminism and the Discourse of Sexuality in Korea: Continuities and Changes,” *Human Studies* 24 (2001): 133–48.

63. Boduerae Kwon, "The World in a Love Letter," in *The Korean Popular Culture Reader*, ed. Kyung Hyun Kim and Youngmin Choe (Durham & London: Duke University Press, 2014), 19–33.
64. Kwon, "The World," 27.
65. Inkyu Kang, "It All Started with a Bang: The Role of PC Bangs in South Korea's Cybercultures," in *The Korean Popular Culture Reader*, ed. Kyung Hyun Kim and Youngmin Choe (Durham & London: Duke University Press), 55–75.
66. Kym Stewart and Hyewon Park Choi, "PC-Bang (Room) Culture: A Study of Korean College Students' Private and Public Use of Computers and the Internet," *Trends in Communication* 11, no. 1 (2003): 61–77.
67. E.g., Florence Chee, *Online Games as a Medium of Cultural Communication: An Ethnographic Study of Sociocultural Transformation* (PhD diss., Simon Fraser University, 2012).
68. Bob O'Keefe, "Kidult," *Urban Dictionary*, June 28, 2005, <https://www.urbandictionary.com/define.php?term=kidult>.
69. Heljakka, "From Playborers and Kidults to Toy Players: Adults who Play for Leisure, Work, and Pleasure," in *Childlikeness*, ed. Russel Belk and Mathieu Alemany-Olivier (2021).
70. Kalbi, "Line between Korean kids and adults blurs." *Korean Culture Blog*. January 14, 2018. <https://koreancultureblog.com/2018/01/14/line-between-korean-kids-and-adults-blurs/>.
71. Sarah Hill *et al.* "Boosting Beauty in an Economic Decline: Mating, Spending, and the Lipstick Effect." *Journal of Personality and Social Psychology* 103, no. 2 (2012), 275.
72. Pyun, "Grasping."
73. Yoon, "Grasping."
74. See also, Michael Seth, *Education Fever: Society, Politics, and the Pursuit of Schooling in South Korea* (Honolulu: University of Hawaii Press, 2002).
75. See, Jeffrey Snodgrass *et al.*, "A Vacation from Your Mind: Problematic Online Gaming Is a Stress Response," *Computers in Human Behavior* 38 (2014): 248–60.
76. Geoffrey Loftus and Elizabeth Loftus, *Mind at Play: The Psychology of Video Games* (New York: Basic Books, 1983), 30–1.
77. Faltin Karlsen, *A World of Excesses: Online Games and Excessive Playing* (New York: Routledge, 2013).
78. Veli-Matti Karhulahti, *Esport Play: Anticipation, Attachment, and Addiction in Psycholudic Development* (London: Bloomsbury Publishing, 2020).
79. Lee Ung, "Inhyöngppopkibang 1ch'ön'got nömötta . . . chöngbu, pulböyön-göp chönggi chipchung tansok" [Inhyeong bbobkiiinhyöngppopki bangs are over 1,000 . . . The Government's Regular Crackdown], *Yonhap News*, February 26, 2017, <https://www.yna.co.kr/view/AKR20170225045800005>.
80. "Big Kinds," Korea Integrated News Database System, accessed April 30, 2021, <https://www.kinds.or.kr/>.

81. See, Paek Kiho, “Inhyöngppopki keimmure taehan yön’gu mit kaesönbangan” [The Study on Doll Drawing Games and Implication for future Improvement], *Pömjoesusabak’yön’gu* [Criminal Investigation Studies] 3, no. 1 (2017): 93–110.
82. Shin Hyun Joo [Shin Hyönju] and Kim Ju Chan [Kim Juch’an], “Ch’öngsonyönüi tobak chungdogüi chaengjömgwa kwaje - inhyöngppopki keimüi sahaengsöng nollanül chungshimüro” [Major Issues and Tasks for Gambling Disorder in Adolescents: Focusing on a Controversy Over Speculation in Doll Drawing Game], *Han’gukchungdoköpömjoebak’oebo* [Korean Association of Addiction Crime Review] 7, no. 2 (2017): 59–80.
83. Paul Stafford, “Claw Cranes in Korea,” *Guide to Korea*, last modified August 4, 2013, <https://guidetokorea.wordpress.com/2011/12/07/claw-cranes-in-korea/>.
84. Walter Benjamin, *Walter Benjamin: Selected Writings, Volume 2, Part 2, 1931–1934*, ed. M. Jennings, H. Eiland, and G. Smith (Cambridge, MA: Belknap Press, 2005 [1933]), 700.
85. Eickhorst, “Game Centers,” 31.
86. Park, *Stitching*, 143.
87. Chee, *Online*. Kong, “It All.” Stewart and Park Choi, “PC Bang.”
88. Shin and Kim, “Ch’öngsonyönüi tobak.”
89. *Ibid.*
90. See Larissa Hjorth, “Playing at Being Mobile: Gaming and Cute Culture in South Korea,” *Fibreculture Journal*, no. 8. (2006).
91. Larissa Hjorth, Bora Na, and Jun-Sok Huh, “Games of Gender: A Case Study on Females Who Play Games in Seoul, South Korea,” in *Gaming Cultures and Place in Asia-Pacific*, ed. Larissa Hjorth and Dean Chan (New York: Routledge, 2009), 251–72.
92. See, Pyun, “Grasping.”
93. For more about the masculine roles, see Jung, *Korean*.
94. Yoon Tae-Jin [Yun T’aechin] and Jin Dal Yong [Chin Talyong], eds., *The Korean Wave. Evolution, Fandom, and Transnationality* (Lanham: Lexington Books, 2017).
95. Oh, *Pop City*, 49.
96. Pinaz Kazi, “Claw Machines and Dating: A New, Rising Fad Inspired by K-dramas Goblin, Legend of the Blue Sea,” *International Business Times*, January 2, 2020, <https://www.ibtimes.sg/claw-machines-dating-new-rising-fad-inspired-by-k-dramas-goblin-legend-blue-sea-6429>
97. Lim Jeong-yeo [Im Chöngyö], “Catching Love with Claw Machines,” *The Korea Herald*, January 10, 2017, http://kpopherald.koreaherald.com/view.php?ud=201701101837362862154_2.
98. “Oppa” (오빠) is a respectful Korean term used by girls and women to call older men like brothers and lovers.
99. Oh, *Pop City*, 88.
100. Jean Baudrillard, *Simulation and Simulacra* (Ann Arbor: University of Michigan Press, 2010).

101. Walter Benjamin, “On Some Motifs in Baudelaire,” in *Illuminations: Essays and Reflections*, ed. H. Arendt, trans. H. Zohn (New York: Schocken, 1968 [1939]), 155–200, 178–179n11.

102. “Hope torture” is a recent buzzword in Korea meaning the act of giving someone vain hope.

Acknowledgments

The study was supported by Academy of Finland (309382, 312397), the Ministry of Education of the Republic of Korea, and the National Research Foundation of Korea (NRF-2018S1A5B5A02028336).

References Cited

Ashcraft, Brian, and Jean Snow. *Arcade Mania: The Turbo-Charged World of Japan's Game Centers*. Tokyo: Kodansha, 2009.

Paek, Kiho. “Inhyöngppopki keimmure taehan yön'gu mit kaesönbangan” [The Study on Doll Drawing Games and Implication for Future Improvement]. *Pömjoesusabakyön'gu* [Criminal Investigation Studies] 3, no. 1 (2017): 93–110.

Bailey, Freddy. “The Crane Part One: 1926 The Birth of the Digger-Crane.” Coin-op Community Online, last modified January 5, 2014. <https://docplayer.net/42751306-The-crane-part-one-1926-the-birth-of-the-digger-crane.html>.

Bailey, Freddy. “The Crane Part Two: The Comeback in the 1980's.” Coin-op Community Online, last modified January 5, 2014. <https://archive.coin-opcommunity.co.uk/wp-content/uploads/2014/09/The-Crane-Part-Two.pdf>.

Baudrillard, Jean. *Simulation and Simulacra*. Translated by S. F. Glaser. Ann Arbor: University of Michigan Press, 2010.

Benjamin, Walter. In *Walter Benjamin: Selected Writings, Volume 2 Part 2, 1931–1934*, edited by M. Jennings, H. Eiland, and G. Smith. Cambridge, MA: Belknap Press, 2005 (1933).

Benjamin, Walter. “On Some Motifs in Baudelaire.” In *Illuminations: Essays and Reflections*, edited by H. Arendt, translated by H. Zohn, 155–200. New York: Schocken, 1968 [1939].

“Big Kinds.” Korea Integrated News Database System, accessed April 30, 2021. <https://www.kinds.or.kr/>.

Game Champ. “K'ürein keimüi shich'ö [UFO k'aech'ö]” [Beginning of Crane Game [UFO Catcher]]. April 1996.

- Botterill, Jackie. "The 'Fairest' of the Fairs: A History of Fairs, Amusement Parks, and Theme Parks." PhD diss., Simon Fraser University, 1997.
- "Claw Machines." Reddit. An online discussion thread, accessed June 28, 2020. https://www.reddit.com/r/KDRAMA/comments/hh9nve/claw_machines/.
- Chee, Florence. "Online Games as a Medium of Cultural Communication: An Ethnographic Study of Sociocultural Transformation." PhD diss., Simon Fraser University, 2012.
- Chiewvanichakorn, Rachaya, Nathan Nossal, and Hiroyuki Iida. "Game Refinement Model with Consideration on Playing Cost: A Case Study Using Crane Games." In *The 7th International Conference on Knowledge and Smart Technology*, 87–92. New York: IEEE, 2015.
- Chu, Hongch'ol. "Inhyöngppopki yölp'ung . . . 'rottoch'öröm taebakün öpchiman chakün haengun'" [Inhyöngppopki Boom . . . 'A Small Fournote Without a Dae-bak Like the Lotto']. *Geumgang Ilbo*, January 14, 2017. <http://www.ggilbo.com/news/articleView.html?idxno=339540>.
- Cross, Gary. *The Cute and the Cool. Wondrous Innocence and Modern American Children's Culture*. Oxford: Oxford University Press, 2004.
- Eickhorst, Eric. "Game Centers: A Historical and Cultural Analysis of Japan's Video Amusement Establishments." MA diss., University of Kansas, 2006.
- "Erie Digger." International Arcade Museum, accessed May 14, 2020. https://www.arcade-museum.com/game_detail.php?game_id=2223.
- Etnews. "[Int'öbyu] il sega ent'öp'üräijü ogat'a t'ak'enori chönmu" [Interview: Takenori Ogata, executive director of Sega Enterprise in Japan]. September 21, 1995. <https://www.etnews.com/199509210046?SNS=00002>.
- Groos, Karl. *The Play of Animals*. New York: D. Appleton and Company, 1898.
- Heljakka, Katriina. "Principles of Adult Play(fulness) in Contemporary Toy Cultures: From Wow to Flow to Glow." Doctor of Arts diss., Aalto University, 2013.
- Heljakka, Katriina. "Toys as Tools for Skill-Building and Creativity in Adult Life." *Seminar. Net. International Journal of Media, Technology and Lifelong Learning* 11, no. 2 (2015): 134–48.
- Heljakka, Katriina. "From Playborers and Kidults to Toy Players: Adults who Play for Leisure, Work, and Pleasure." In *Like A Child Would Do*, edited by Russel W. Belk and Mathieu Alemany-Olivier, 177–93. Montreal: Universitas Press, 2021.
- Hill, Sarah E., Christopher D. Rodeheffer, Vladas Griskevicius, Kristina Durante, and Andrew Edward White. "Boosting Beauty in an Economic Decline: Mating, Spending, and the Lipstick Effect." *Journal of Personality and Social Psychology* 103, no. 2 (2012): 275–91.

- Hjorth, Larissa. "Playing at Being Mobile: Gaming and Cute Culture in South Korea." *Fibreculture Journal*, no. 8 (2006). Online Journal. <https://eight.fibreculturejournal.org/fcj-052-playing-at-being-mobile-gaming-and-cute-culture-in-south-korea/>.
- Hjorth, Larissa. "Being Real in the Mobile Reel: A Case Study on Convergent Mobile Media as Domesticated New Media in Seoul, South Korea." *Convergence* 14, no. 1 (2008): 91–104.
- Hjorth, Larissa. "Relocating the Mobile: A Case Study of Locative Media in Seoul, South Korea." *Convergence* 19, no. 2 (2013): 237–49.
- Hjorth, Larissa, Bora Na, and Jun-Sok Huh. "Games of Gender: A Case Study on Females Who Play Games in Seoul, South Korea." In *Gaming Cultures and Place in Asia-Pacific*, 251–72, edited by Larissa Hjorth and Dean Chan. New York: Routledge, 2009.
- Huhtamo, Erkki. "Slots of Fun, Slots of Trouble: An Archaeology of Arcade Gaming." In *Handbook of Computer Game Studies*, edited by Joost Raessens and Jeffrey Goldstein, 3–21. Cambridge: MIT Press, 2005.
- Hwang, Suh-Jean. "KIDULT Phenomenon In Korea." Kookmin Review, September 2, 2013. <https://english.kookmin.ac.kr/kookmin/special/169?pn=15>.
- Ivy, Marilyn. "The Art of Cute Little Things: Nara Yoshimoto's Parapolitics." In *Fanthropologies. Mechademia*, edited by Frenchy Lunning, 3–29. Minneapolis: University of Minnesota Press, 2010.
- Jo, Dongwon. "Bursting Circuit Boards: Infrastructures and Technical Practices of Copying in Early Korean Video Game Industry." *Game Studies* 20, no. 2 (2020).
- Jo, Dongwon. "Vernacular Technical Practices Beyond the Imitative/Innovative Boundary: Apple II Cloning in Early-1980s South Korea." *East Asian Science, Technology and Society: An International Journal* (2021).
- Jung, Sun [Chōng Sōn]. *Korean Masculinities and Transcultural Consumption: Yonsama, Rain, Oldboy, K-pop Idols*. Hong Kong: Hong Kong University Press, 2010.
- Kang, Buwōn. "Inhyōngpppkiū yuhaenggwa tjit'ōrhwa toen analogū kigyee taehan hwansang" [Claw Crane Boom and Fantasy of Digitalized Analog Machine]. *Kukcheōmunhak'oe Haksultaehoe Charyōjip* [The Conference Proceeding of the International Association of Language & Literature], no. 2 (2018): 41–55.
- Karhulahti, Veli-Matti. "A Kinesthetic Theory of Videogames: Time-Critical Challenge and Aporetic Rhematic." *Game Studies* 13, no. 1. (2013). Online Journal. http://gamestudies.org/1301/articles/karhulahti_kinesthetic_theory_of_the_videogame/.
- Karhulahti, Veli-Matti. *Esport Play: Anticipation, Attachment, and Addiction in Psycholudic Development*. London: Bloomsbury Publishing, 2020.

- Karhulahti, Veli-Matti and Grabarczyk, Pawel. "Split-Screen: Videogame History through Local Multiplayer Design." *Design Issues* 37, no. 2 (2021): 32–44.
- Karlsen, Faltin. *A World of Excesses: Online Games and Excessive Playing*. New York: Routledge, 2013.
- Kazi, Pinaz. "Claw Machines and Dating: A New, Rising Fad Inspired by K-dramas Goblin, Legend of the Blue Sea." *International Business Times*, January 2, 2020. <https://www.ibtimes.sg/claw-machines-dating-new-rising-fad-inspired-by-k-dramas-goblin-legend-blue-sea-6429>.
- Kevorgov, Allen. 2012. "History of Claw Cranes." Be The Claw – Home of the Claw Machine Addicts, accessed May 13, 2021. <http://www.betheclaw.com/history.html>.
- KH Digital. "Slowing Economy Lures Young Koreans to Claw Machines." *The Korea Herald*, February 3, 2017. <http://www.koreaherald.com/view.php?ud=20170203000121>.
- Kwon, Bodurae. "The World in a Love Letter." In *The Korean Popular Culture Reader*, edited by Kyung Hyun Kim and Youngmin Choe, 19–33. Durham & London: Duke University Press, 2014.
- Lange, Benjamin P., and Frank Schwab. "Game On: Sex Differences in the Production and Consumption of Video Games." In *Evolutionary Psychology and Digital Games: Digital Hunter-Gatherers*, edited by Johannes Breuer, Daniel Pietschmann, Benny Liebold, and Benjamin P. Lange, 193–204. New York: Routledge, 2018.
- Lee, Ung. "Inhyōngppopkibang 1ch'on'got nōmōtta . . . chōngbu, pulbōbyōngōp chōnggi chipchung tansok" [Inhyōngppopkibangs are over 1,000 . . . The Government's Regular Crackdown]. *Yonhap News*, February 26, 2017. <https://www.yna.co.kr/view/AKR20170225045800005>.
- Lim, Jeong-yeo [Im Chōngyō]. "Catching Love with Claw Machines." *The Korea Herald*, January 10, 2017. http://kpopherald.koreaherald.com/view.php?ud=201701101837362862154_2.
- Lipton, Michael D., Morden C. Lazarus, and Kevin J. Weber. "Games of Skill and Chance in Canada." *Gaming Law Review* 9, no. 1 (2005): 10–18.
- Loftus, Geoffrey R., and Elizabeth F. Loftus. *Mind at Play: The Psychology of Video Games*. New York: Basic Books, 1983.
- Lupton, Ellen. *Mechanical Brides: Women and Machines from Home to Office*. New York: Princeton Architectural Press, 1993.
- Mendenhall, Zack, Marcelo Nepomuceno, and Gad Saad. "Exploring Video Games from an Evolutionary Psychological Perspective." In *Encyclopedia of E-Business Development and Management in the Global Economy*, edited by In Lee, 734–42. Hershey: IGI Global, 2010.

- Moon, Seungsook [Mun Süngsuk]. "The Production and Subversion of Hegemonic Masculinity: Reconfiguring Gender Hierarchy in Contemporary South Korea." In *Under Construction*, edited by Laurel Kendall, 79–114. Honolulu: University of Hawaii Press, 2001.
- Ngai, Sianne. "The Cuteness of the AvantGarde." *Critical Inquiry* 31, no. 4 (2005): 811–47.
- Oh, Youjeong. *Pop City: Korean Popular Culture and the Selling of Place*. Ithaca and London: Cornell University Press, 2018.
- Ok, Hyeryoung. "New Media Practices in Korea." *International Journal of Communication* 5, no. 1 (2011).
- O'Keefe, Bob. "Kidult." *Urban Dictionary*, June 28, 2005. <https://www.urbandictionary.com/define.php?term=kidult>.
- Park, Seo Young. *Stitching the 24-hour City: Life, Labor, and the Problem of Speed in Seoul*. Ithaca and London: Cornell University Press, 2021.
- Pine, Joseph, and James Gilmore. *The Experience Economy*. Harvard: Harvard Business Press, 1999.
- "The Claw." *Pixar Wiki*, accessed December 20, 2019. https://pixar.fandom.com/wiki/The_Claw.
- Puzar, Aljosa. "Asian Dolls and the Westernized Gaze: Notes on the Female Dollification in South Korea." *Asian Women* 27, no. 2 (2011): 81–111.
- Pyun, Gwanghyun. "Grasping for Entertainment: The Rise of Claw Machines in South Korea." *The Peninsula Blog: Korea Economic Institute of America*, accessed February 8, 2017. <http://blog.keia.org/2017/02/grasping-for-entertainment-the-rise-of-claw-machines-in-south-korea/>.
- Rabinovitz, Lauren. *For the Love of Pleasure: Women, Movies, and Culture in Turn-of-the-Century Chicago*. New Jersey: Rutgers University Press, 1998.
- Rossen, Jake. "Dime After Dime: A Gripping History of Claw Machines." *Mental Floss*, July 7, 2016.
- Seth, Michael. *Education Fever: Society, Politics, and the Pursuit of Schooling in South Korea*. Honolulu: University of Hawaii Press, 2002.
- Shikewei. "Slot Machine → Self-Selling Machine → Doll Machine . . . N Eras of Coin-Operated Entertainment." *SQV ANIM*. June 21, 2019. <https://jigamemachine.com/news/187-en.html>
- Shim, Young-Hee, "Feminism and the Discourse of Sexuality in Korea: Continuities and Changes." *Human Studies*, 24 (2001): 133–48.

- Shin, Hyun Joo [Shin Hyŏnju], and Ju Chan Kim [Kim Juch'an]. "Ch'ŏngsomyŏnŭi tobak chungdogŭi chaengjŏmgwa kwaje - inhyŏngppopki keimŭi sahaengsŏng nollanŭl chungshimŭro" [Major Issues and Tasks for Gambling Disorder in Adolescents: Focusing on a Controversy Over Speculation in Doll Drawing Game]. *Han'g-ukchungdokpŏmjoebak'bebo* [Korean Association of Addiction Crime Review] 7, no. 2 (2017): 59–80.
- Snodgrass, Jeffrey G., Michael G. Lacy, H.J. Francois Dengah II, Scarlett Eisenhauer, Greg Batchelder, and Robert J. Cookson. "A Vacation from Your Mind: Problematic Online Gaming Is a Stress Response." *Computers in Human Behavior* 38 (2014): 248–60.
- Snyder, Bob. "Skill Carne Operators Can Defend Against Unfair Practices Lawsuits." *Vending Times* 37, no. 1 (2003).
- Stafford, Paul. "Claw Cranes in Korea." *Guide to Korea*. August 4, 2013. <https://guidetokorea.wordpress.com/2011/12/07/claw-cranes-in-korea/>.
- Tansel, Utku. "Why Should Toy Manufacturers Focus More on Adults?" *Global Toy News*, March 8, 2013. <https://www.globaltoynews.com/2013/03/why-should-toy-manufacturers-focus-more-on-adults.html>.
- The Literary Digest. "Nickel-Eaters: The Story of the King of 'Diggers,' Peep Shows and Slot Devices." June 5. 1937.
- Thibault, Mattia, and Katriina Heljakka. "Toyification. A Conceptual Statement." Proceedings of the 8th International Toy Research Association World Conference. International Toy Research Association (ITRA), July 2018, Paris, France. <https://hal-univ-paris13.archives-ouvertes.fr/hal-02083004/document>.
- Smith, Troy. "Gambling Devices: 'Iron Claw' Machines." *Washington State*, January 17, 1952. <https://www.atg.wa.gov/ago-opinions/gambling-devices-iron-claw-machines>.
- Stewart, Kym, and Hyewon Park Choi. "PC-Bang (Room) Culture: A Study of Korean College Students' Private and Public Use of Computers and the Internet." *Trends in Communication* 11, no. 1 (2003): 61–77.
- Woo, Kwang-hoon [U Kwanghun]. *Naii synp'ŏbiŭro ppŏpkimaen* [My Superhero Drawing-man]. Munhakdongne, 2017.
- Yoon, Dasl. "Grasping for Hope, Claw Arcades – and Youth Unemployment – Swell in South Korea." *The U.S News*, September 29, 2017. <https://www.usnews.com/news/best-countries/articles/2017-09-29/south-koreas-claw-arcades-explode-in-popularity>.
- Yoon, Tae-Jin [Yun T'aechin], and Dal Yong Jin [Chin Talyong], eds. *The Korean Wave. Evolution, Fandom, and Transnationality*. Lanham: Lexington Books, 2017.