A Pachinko Game on Anabolic Steroids

Words Luke Pearson Photographs Motohiko Hasui

The world of a Japanese arcade is one where sensory excess and deprivation occur at the same time.

That these two conditions exist side-by-side is a product of a relationship between anonymous interior spaces and the vivid objects they contain. This situation can be experienced in places like Adores, an arcade which sits on the main drag of Tokyo's Ikebukuro district – a well-travelled part of the city that is home to sprawling department stores and countless outlets for gamer and otaku (nerd) culture. Adores sits on a street corner, tucked beneath a storey-high backlit sign whose branded panels are flanked by glowing red columns. This entrance is full of gleaming glass boxes stuffed with fluffy toys, candy boxes and vinyl figurines that are furtively prodded and stroked by the metal tongs of UFO catcher or crane games. It is not uncommon for a brief conversation between customer and attendant to result in the desired toy being repositioned in a more favourable place to keep the thrill alive, even if the claws of the crane arm remain almost ever-slack. Deeper into the ground floor of the arcade are the purikura units: booths where young girls and couples dance in and out of printed curtains which envelop camera cubicles and screens for editing artfully posed selfies.

Upstairs, Adores becomes both more excessive and more isolated. Natural light disappears, to be replaced with the thick smell of cigarette smoke and the pulsing glow of rows and rows of rhythm games, where teenagers (often wearing low-friction gloves) trace elaborate paths across screens and buttons in time to throbbing J-Pop. Alongside classic dance games, many of these machines use more esoteric interfaces involving dials and cubes; one title even lets players design their own anime pop idol and tap away at the screen as she and her bandmates dance around a virtual stage.

At this point the arcade is already overwhelming. Yet up another escalator sits an object even more intense and luminous. It is a large cabinet containing what appears to be a miniature theme park, full of spinning carousels and juddering armatures that whirl around a pulsating landscape of laser-cut plastic and LED lighting strips. It's like a pachinko game on anabolic steroids. According to the plastic signs, this object is called *Fortune Trinity* and it is a type of lottery machine known as a medal game.

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My first encounter with medal games was at the Anata No Warehouse ("Your Warehouse") arcade in Kawasaki on the outskirts of Tokyo. I was visiting for the arcade's idiosyncratic architectural design, which includes a panelled facade recalling the Jawa sandcrawler from *Star Wars* – faux-rusted metal panels dotted with cosmetic pipework. This hulking presence is punctuated only by the luminous red triangles of Japanese regulation fire access stickers. The building is entered from the street through a series of orange-lit concrete tunnels, while the parking garage is accessed via stepping stones that hover above a room flooded with green "toxic goo". Inside, half of the ground floor is devoted to a recreation of the Kowloon Walled City, housing vintage arcade cabinets. It's a space that is detailed down to the bowls of replica duck meat sitting on the countertop of an imitation noodle bar. The third floor of the building is dominated by a fibreglass replica of the Trevi fountain, which takes significant liberties with the composition of the original, and contains no water. The fountain is lit by hot-pink spotlights and surrounded by checkerboard tiles. It is an environment that would be considered too gaudy for even some of Las Vegas's lower-rent casinos.

Anata No Warehouse is an energetic environment, but just as in Adores I found its most striking architecture to be the visual carnage of the game cabinets that populate the arcade floor. It is hard to stand out in such a context, but one cabinet drew my eye – a case containing a spinning diamond riding atop a fountain of confetti that grows in intensity alongside a pounding techno soundtrack. Beneath this, a miniature castle that is seemingly built from ice rotates, pulsating with lights and dotted with smaller plastic structures – a series of jagged-toothed ramparts rendered in plasticky gold – upon which silvery orbs dance. Running along the top of the cabinet is the exclamation "HYOZAAAN!!" As I later learned, this roughly translates as someone shouting "Iceberg!"

Hyozaaan!! and its sister title *Kazaaan!!* (Volcano!) are medal games produced by Sega and, like all these games, they are technically lotteries. Yet there is no money to be won. These machines operate at the very edge of Japan's confusing and seemingly contradictory gambling laws. Articles in the country's 1907 Criminal Code prohibit not only the operation of gambling establishments, but also classify habitual gambling as a crime that can be punished by a prison term. At the same time, Japan's pachinko industry has long generated multi-trillion-yen revenue and profits, making it one of the world's largest gambling markets, despite not ostensibly offering cash rewards to players. This success is predicated not only on the addictive properties of the experience itself but on the fact that players can actually win rewards – including cash – through legal loopholes such as "special prize" tokens that can be obtained by trading in pachinko balls. These tokens can then be redeemed at nearby TUC (Tokyo Union Credit) shops, away from the hall itself.

Although the 1907 code prohibited the buying and selling of lottery tickets, subsequent acts have changed lotteries' legal status as they became important revenue generating mechanisms for the government. Today, nationwide Takarakuji lotteries are popular, especially given that they are classified as amusements and have no minimum age rules (unlike pachinko, which requires players to be over 18). Since the late 1990s, Toto football pools have also been available to those over 19, along with associated lotteries based on football scores. There are four more sports upon which Japanese citizens may gamble, the Kōei Kyōgi (public sports) of horse racing, keirin cycling, motorcycle speedway and powerboat racing, all of which were legalised in the mid-20th century. These sports operate using a highly regulated pari-mutuel system, where bets are pooled such that the government can take a significant revenue cut. An extra layer of chance is added as riders and vehicles are often anonymised and identified only through the colour of their livery. In the case of powerboat racing, boats and engines are distributed to competitors at random. For a country where gambling is supposedly broadly illegal, Japan boasts a highly developed gambling economy, although it is an industry facing new pressures. In 2018, the Japanese government passed a controversial law legalising "integrated resort" casinos – multi-functional gaming properties combining gambling halls with hotels and other amenities like those found in Las Vegas or Macau. With only three casino licenses currently available, American and multinational gaming companies stand poised to invest in the country, with the expected result of a further hit to Japan's pachinko market (which is already shrinking despite its large revenues).

The introduction of casino games will provide another layer of complexity to Japan's gambling legislation, but if there is one form of betting that may remain untouched it is medal games such as *Hyozaaan!!* which have never relied on monetary reward. In these games, players exchange their cash for "medals" – small coin-like tokens that provide a symbolic and legal buffer to the transaction between money and chance. These medals cannot generally be traded for prizes, and can never be exchanged for money, but they can often be "banked" for later play. Unlike pachinko machines, medal games are unconnected to more formal gambling structures and nearly always located in conventional game arcades rather than pachinko halls. A disclaimer on the side of Sega's *Bingo Galaxy* machine reads: "I will play in a place of amusement". The medal, then, can be seen as a physical manifestation of the legal structure that separates gambling from amusement by detaching the vicarious thrill of the jackpot from a monetary prize. They are, in sociologist Roger Caillois' term, games of pure "alea", answerable only to chance where "destiny is the sole artisan of victory." Winning medals ultimately only offers more time playing to win further medals – a longer engagement with chance. The medal is a token that can be wagered, but a jackpot can only ever facilitate more wagers. It has no other transferrable value.

The relationship between Japanese society and symbolic tokens is longstanding. Omamori, for instance, are small charms and tokens bought at temples to confer good luck in health, academia or love. Omikuji are fortunes purchased at shrines, which are chosen at random from a box and can provide both blessings and curses. Saisen Bako, offertory boxes also located at shrines, involve a transactional relationship between spiritualism and currency where monetary offerings of coins are made to the gods. Many of these boxes have special grates and sloped interiors for catching money quickly and quietly. With these systems in mind, we might speculate that Japan, a country that has such tokens of spiritual chance woven into its religious heritage and which still possesses a strong cash culture,[i] is not particularly attuned to the credits system employed by American gaming machines. Discussing machine gambling in Las Vegas in her 2012 book *Addiction by Design*, anthropologist Natasha Dow Schüll describes how modern slot machines dematerialise "money into an immediately available credit form" to speed up gambling, but also to overcome the "limitations of human motor capacities by removing unwieldy coins." By contrast,

medals are physical and saturate the experience. They are purchased with cash and dropped into cups, they are fed into the machine, won, sorted and banked.

The materiality of the transaction in a medal game is that of plastic, light, LCD screen and chrome. These large cabinets, often constructed at the same order of scale as a minivan, hold complex and energetic mechanisms for shuttling and spinning balls and other tokens through their systems, while the player places bets on which trajectory they will follow. To play a game, money must first be exchanged for medals using a vending machine, typically emblazoned with numerous laminated notices warning that medals cannot be exchanged for prizes, and should not be confused with money. After collecting medals in a plastic cup, and taking up position on a leatherette stool, most games can be operated by manually inserting tokens into the machine and pressing various combinations of buttons. Some machines let players line up medals in small hoppers, while others use more elaborate "gun" style mechanisms to aim them. Many machines are based around a coin pusher mechanism – a jackpot in this part of the machine may bring other buttons into play which activate further stages of the lottery process – giant roulette-style wheels, digital screens and various other mechanisms unique to the theme of each game.

Without a potential cash incentive, the architecture of the medal game serves as a spectacle that holds the player in position and makes them spend money. In his 2015 book *Uncertainty in Games,* game designer and writer Greg Costikyan argues that "games of pure chance[…] rely for their appeal on the tension of winning something of real and tangible value." For Costikyan, roulette without real stakes would mean "watching a ball rolling around a wheel [which] might be fascinating to a cat, but not to a human being." Without the tension of monetary reward, therefore, the architecture of the medal games cabinet has to move far beyond a simple ball and wheel in order to captivate the player. In fact, they resonate with Schüll's studies of electronic gambling machines in Las Vegas, where people are drawn to "the world-dissolving state of subjective suspension and affective calm they derive from machine play." As Schüll argues, the design of such machines – from their physical interface to the programmed jackpot schedule and even their positioning within casinos – helps to draw players into a "zone" of nothingness itself, where spending "time on device" is a motivation that goes beyond monetary reward. Given that medal games dispense with money jackpots entirely, and medals won can only be fed back into machines or banked for later play, their neutered form of gambling foregrounds the aesthetic pleasure of the machine and repeated engagement with its highly articulated mechanisms of chance. In this context, cabinet designs are not incidental or gratuitous but should be considered an intrinsic part of the gaming process.

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There are a number of companies that produce medal game machines, many of whom will be instantly recognisable to videogame fans. Manufacturers such as Capcom, Konami, Namco and Taito share a similar history, with all having been established as some form of importer or manufacturer of amusement machines and having had a role in the late 1970s arcade boom. As Japan's gambling laws have constricted and relaxed over the last century, all of these companies have played key roles in the development of legal, amusement-based lottery machines. Taito, in particular, still operates many arcades in Japan, meaning that their medal game innovations can quickly be brought to market.

Although these companies share some history, the largest medal game producer, and the company with the most influential and international reputation, is Sega. Sega's background as one of the leading medal games manufacturers far precedes *Hyozaaan!!!* and dates back some 40 years. Sega began life as a company called Service Games of Japan – an American-owned importer and producer of slot machine games for US servicemen stationed abroad. Around the 1960s, the company transitioned into arcade and amusement games before later moving into videogames. Many of its titles began as reproductions of casino environments: the roulette-based *Faro* (1974), *Caribbean Boule* (1991) and *Roulette Club* (1996), the latter of which had a set of demountable loggias that could encase the cabinet, increasing its visual presence while making overt references to the gaming-pastiche architecture of Las Vegas. Sports arenas also provide inspiration, from the horse-racing track simulations of *Grand Derby* (1981) and *StarHorse 4* (2019), through to *Boat Race Ocean Heats* (2001) based on kyōtei powerboat racing courses. These machines are medal-based representations of the kōei kyōgi legal gambling sports, yet unlike their real counterparts all wages are placed and won in medals. Set against these titles are more esoteric medal cabinets such as *Castle Coaster* (1995), a coin-pusher containing a Disneyesque castle and miniature rollercoaster, and ticket redemption games such as *Udderly Tickets* (1997), a life-sized cow-milking game produced by offshoot company Sega Pinball Inc.

Game cabinets were typically the work of specialised subdivisions of the company, such as Sega Amusement Machine Research and Development Department #4 (Sega AM4), whose designs focussed primarily on user engagement with arcade machines. This group was most notable for its "ride-on" hydraulic arcade cabinets (the taikan series) such as *Out Run* and *Hang-On* (1985). In time, another group spun off from this to form Sega AM6, a division that worked exclusively in medal games and the user relationship to these machines. In his 2018 book *The Sega Arcade Revolution*, game historian Ken Horowitz details how "cabinets were planned in real sizes (no miniatures were used), and planning was done around players." Rather than mere casings, the architecture of cabinets and their machinery became R&D projects. Other manufacturers, possessing similar backgrounds in amusement machines, also retain specialised design divisions. Technical accomplishments by all these medal game manufacturers are closely protected by patents and each new title typically involves numerous supporting applications on technologies from ball-retention systems to lighting configurations.

As described in a 2011 patent application for Sega's *Kazaaan!!*, the cabinet design "makes it possible for the player to directly visually confirm the lottery process, and thus it is less likely to give rise to doubts about software operations and cheating, and it has credibility for the players." In the same application, Sega's engineers argue that the three-dimensional mechanisms make it more difficult for the player to predict the lottery's results compared to software routines displayed on a screen. As Schüll points out, mechanical systems "perpetuate the player's sense of being involved with a game that reacts to them in a kinetically lively and direct manner." The flashing lights and spinning objects in a medal game cabinet are designed as a system which prizes the physical spectacle as inherently more truthful than a screen-based game, while simultaneously making it harder for the player to discern and exploit patterns.

Another title by Sega that I have regularly encountered in Japan is *The Medal Tower of Babel* (2016). Ostensibly a typical coin-pusher game, it is enlivened by the addition of an ever-growing tower of medals which are precisely stacked and spun as they rise, looming over tiny plastic villages below. The mechanisms of the game twist and pile these thin metal discs into concentric circles laid layer-upon-layer, rising to a point above a standing observer's eye level. Upon winning the game, the mechanism topples the tower, sending showers of tokens tumbling into the jackpot trays. Such a display is intrinsic to maintaining the spectacle, with Sega's engineers designing elaborate mechanical choreographies "in order to create anticipation for the lottery draw or to make it easier to see the latter stages of the lottery from the surrounding area." The aim of these cabinets is not only to captivate the individual player, but also to capture the attention of people nearby.

In *The Medal Tower of Babel* medals manifest as stacking discs, but they take various forms in other games. Their designers at Sega define them thus: "spherical balls, disk-shaped medals, and multi-sided objects such as dice and similar." There can be any manner of movement, for example, "rolling accompanying rotation of the lottery media, or sliding not accompanied by rotating." Medals are designed in relation to the choreography that they are expected to perform within a system, and movements are often translated from one media to another. Konami's *Marble Fever* (2018) uses elaborate systems of branching marble runs, along with digital screens, to regulate its lottery.

The act of display is not only limited to mechanical systems. Takeya Ltd's 'Display Device for Gaming Machine' technical document presents innovations including exploiting electrical phenomena for rapidly suppressing the "afterglow" of LED bulbs within a cabinet to produce flashing light effects. Engineers realised they could then utilise the same system to extend the LED afterglow for dramatic light fades during tension points in the lottery. The Second Stage in the Sega title *Gingaaan!!* (2016) uses a rapid sequence of lights alongside subtle undulations in a moving metal plate to produce various effects as balls wobble towards (or away from) one of nine holes. Should the media plop into the correct holes, the next stages begin, including a roulette-style spinning wheel and a spherical bingo ball blower, both of which are covered in lines of LED strips.

The Medal Tower of Babel or *Gingaaan!!* are cabinets of significant size, but they pale in comparison to the scale of machines such as Sega's *Hokuto no Ken Battle Medal* (2013), which can seat six people around a lottery machine inspired by the long-running manga series of the same name. Hokuto's proportions come from its horizontal coin pusher mechanisms and the giant plastic statue of Raoh, the main villain of the manga, who sits at the centre of the cabinet. Larger still is Konami's *Grand Cross* series, which can seat up to 32 players at a time, all gazing into an encapsulated space of whirring mechanisms and cascading

colours that is not too far off the size of a typical Tokyo one-bedroom apartment. Within these cases, pulsating flashes of light and swinging armatures create an attention-grabbing event around the machine as others are drawn in by the seemingly imminent jackpot. In the past these machines would have simply replicated casino games, but real gaming floors are now coming. In response, medal game designers are creating ever more fantastical worlds within their cases as surrogates for the lost tension of hard currency.

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Obtaining a jackpot in medal games is a matter of chance, controlled only by the number of the tokens one is willing to funnel into the cabinet. Unsurprisingly, however, there are numerous internet resources to help players try to flout the probabilities. Websites such as *Medalgamefan* have dedicated communities producing tables and spreadsheets that document the odds of each machine to understand the sequences of events that lead to a jackpot. Vast tables of game stages and odds are uploaded by volunteers interested in the inner workings of the lottery machine. These players attempt to unpick the algorithm of the cabinet to make sense of the displays which have been precisely designed by their manufacturers to be intriguing yet unintelligible. The site even contains interactive "jackpot simulators" that players can use to explore the systems of a game online. We might see this as a certain form of obsessive behaviour. As literary critic Hiroki Azuma has argued in his 2001 book *Otaku: Japan's Database Animals*, otaku culture operates on a model of "database consumption," a form of consumerism that moves away from grand narratives towards information sorting. The "narrative" theme of most medal game cabinets is used to attract players, but does not need to make any logical sense. In fact, it is the workings of the lottery that the most enthusiastic players really want to consume.

These principles apply across different medal games, which often share similar features. Mechanisms such as coin pushers, ball runs and crane arms are very common in the internal workings of the machine. Most game cabinets are some form of symmetrical polygon in plan, typically constructed from moulded plastic, acrylic panels and water-cut metal components. But they also often share computer architecture. Many Sega titleswere built using its NAOMI architecture (New Arcade Operating Machine Idea), which is a close relative of its 1998 Dreamcast console. The horse racing medal game *Star Horse* (2000) uses the same underlying system as the more internationally known arcade game *Crazy Taxi* (1999). As games theorist Ian Bogost argued in his 2006 book *Unit Operations: An Approach to Videogames Criticism*, the underlying architecture of games (software called "game engines") provides a connection "far beyond literary devices and genres" as "game engines regulate individual videogames' artistic, cultural, and narrative expression." There is still an innate connection between the medal game and the arcade on the level of systems architecture.

In fact, there are several titles that blur this distinction between a large kinematic machine and a videogame. Capcom's *Mario Party Fushigi no Korokoro Catcher* (2009) is a giant cabinet integrated with a version of Nintendo's *Mario Party 8*. As coins are pushed through the mechanisms and bonus balls are captured with crane arms, the famous plumber jumps around a virtual board game, picking up prizes or falling prey to traps and monsters. Mario is licensed to Capcom by his owners Nintendo and subsequently placed into a completely different context – doomed to jump around a world dictated by chance as giant moulded plastic versions of his red cap circle overhead and coins shuffle back and forth. The aesthetics of the cabinet mechanisms are directly integrated with the virtual worlds that Mario traverses, full of castles and dungeons populated by monsters. In *Mario Party*, as with *Hokuto No Ken* and other titles, well known cultural characters and narratives are used to draw players towards the lottery, even if their original narrative context has been completely removed. Using themed characters in this way reinforces Azuma's contention that "in the multimedia environment[...] it is only characters that unite various works and products." The lottery is played out across both the physical and virtual architecture provided by the game, as well as across cultural spheres. Medal games have moved from the casino simulation, into a world of exuberant mechanical systems and onwards into videogame-integrated units that attach culturally iconic figures to the lottery process.

What is the future of the medal game and its unique position within Japan's gambling economy? The true impact of Japan's legalisation of integrated resort casinos is unlikely to be felt for several years, and they are expected to be strictly regulated. While the potential for casino resorts has piqued the interest of American groups such as MGM and Las Vegas Sands, parent companies of medal game manufacturers

such as Sega Sammy Holdings have expressed an interest in bidding too. Sega Sammy also produces pachinko machines, alongside companies such as Sankyo and Heiwa Corporation, but the pachinko industry is likely to be challenged by casino slots and their American manufacturers like Bally and IGT. Whatever effect the law has on the pachinko industry – most likely to accelerate its contraction – it is unlikely to have a large bearing on medal games which sit in the unique position of being gambling lotteries with no financial incentive – destined to never escape the upper floors of the arcade. Ironically, this wider arcade industry is now under threat from other places following prime minister Shinzo Abe's announcement of a rise in consumption tax, with arcade operators expected to absorb any shortfall to keep the industry running on 100-yen coins. However, given money could be electronically changed into medals at the exchange rate of the arcade's choosing, if any machines have the capability to survive this threat to the urban typology of the arcade, it will be the medal games which become ever more intricate, complex and striking in their displays.

Over the last few years, I have photographed, drawn and researched these games to understand their status as design objects. These drawings, alongside photographic recordings made on visits to Japan and studies of technical documentation, reveal the elaborate yet inscrutable systems that underpin medal games. Beneath the moulded plastic surfaces are layers of watercut aluminium and steel, ball runs and hoppers, and devices for sorting, jiggling and bouncing medals through the system. Despite the complexity of the visible workings within these cabinets, there is still a distinction between those elements designed to be seen and those working beneath the surface. This places the medal game in Japan's long history of automation, from Edo-era karakuri puppet automata to architect Arata Isozaki's robots for Expo 70, or the country's ubiquitous vending machines. Yet unlike the Edo automaton in which, as architect Kisho Kurokawa argues in his book *Each One a Hero – The Philosophy of Symbiosis*, "the technology that was incorporated into a device was not displayed on its exterior but incorporated invisibly in the interior, giving people a feeling of wonder and mystery," the medal game's enigmatic qualities come from the relationship between mechanism and operation. If, as Kurokawa says, "the role of machines was not to express their own independent identities but that of human beings," then in medal games this identity is not anthropomorphic, but a manifestation of our desire to engage with chance and uncertainty. In this regard, the medal game may veer closer to Reyner Banham's definition of a gizmo in his *Design By Choice* (1981): "a small self-contained unit of high performance in relation to its size and cost, whose function is to transform some undifferentiated set of circumstances to a condition nearer human desires."

What is unique to the medal game is the architectural complexity visible within the cabinet. Each medal game is a world within a world, an environment made for orbs and coins. Rather than evoking a human activity, like the tea-making karakuri, each medal game has its own set of logics and fictional scenarios playing out behind the glass. Divorced from monetary exchange, it has no alternative way of being other than to envelope the senses of the player. The luminosity and intensity of these machines is such that it does not matter if they are placed on faded carpets, next to the toilets, or on the fifth floor of a nondescript building in a less travelled neighbourhood; they will draw you towards them through cacophony. Once in their presence, it is up to the viewer whether to try and discern their patterns or simply give in, and drift into the overload, medal by medal.

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[i] According to *The Japan Times*, as of August 2019 four out of five purchases in Japan are still made with cash.