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Ross, J.A.; Nagib, L.; Solomon, S.

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Intermediality and the Carousel Slide Projector

Julian Ross

The 2017 exhibition *Slides: A History of Projected Photography* at Musée de l'Élysée in Lausanne, Switzerland, set out to present the history of projected still images through two overarching methods: first, by showcasing the history of lens-based media and its development through the display of mostly archaic projection apparatuses and other related ephemera; second, through installations of various artworks using the slide medium. As the exhibition title and the list of exhibited works suggest, the curators considered the role of their show to be a survey of a bygone era. With the exception of one recent work, all twenty-one artworks presented in the context of this exhibition were from the 1960s and 1970s, the period in which the slide projector was at the height of its popularity.¹ With Kodak terminating the industrial production of carousel slide projectors in 2004, the omission of contemporary artworks using the now defunct medium is somewhat understandable. Nevertheless, it contributes to the widespread impression that still image projection is a thing of the past, an assumption that the surge of slide-based works made and exhibited since 2004 proves otherwise.

While smartphone apps are certainly now the primary method for photo-sharing, the carousel slide projector, almost two decades since its demise, still holds a prominent place within the field of contemporary art and (audio) visual media. At the 2014 Turner Prize exhibition, two out of four artists presented slide-based works in the annual exhibition of recent works by up-and-coming British artists.² Artists have expressed fascination with the characteristics of the slide projector: the rhythmic oscillation between light and darkness; the sculptural quality of the projector apparatus, often visibly present within the exhibition site; the saturated colours and high resolution of the 35mm slide film; and the pulsating sound the machine emits as the slides click in and out of the frame. Yet the key reason for its continuing relevance is arguably its innate intermediality, despite the defining characteristics that have

been outlined. Situated between the still and moving image, the slide projector is known for its ephemerality. Tracing the etymology of “dia” (from Greek, “through”), the prefix used for the term for slides in many languages, reveals that slides intersect with notions like “through” and “between,” and as such, one might suggest it is by definition in between.³ Neither entirely photography nor film, slide projection itself is intermedial, existing in the interstices between the two media. Perhaps because of its effervescence, slide projection also has the ability to interact with other media. In fact, its definitions as a distinct medial form—its engagement with presence and the present—become clearest in the intermedial encounter with other distinct media.

While we have established that slides have a certain elusive quality, this is not their only mode of being. Indeed, this might be the experience of looking at or working with slides, especially for many artists with a background in fine arts; paintings, for example, don’t vanish off the wall. For filmmakers working with analogue film, however, slide projectors offer precisely the opposite. Running at twenty-four (or sometimes several fewer) frames per second, individual frames on a filmstrip are invisible to the human eye.⁴ Slide projection, on the other hand, with its slower projection speed and the darkness that bookends each slide, makes each frame visible. Each slide is pronounced as if it were a punctuation mark in a sentence. Moreover, the loud clicking sound that the mechanics of the projector makes as it shifts to the subsequent slide is similarly emphatic, particularly in a gallery or museum space where visitors usually take part in a quiet spectatorship, and even more so on the rare occasion slides are presented in the cinema space. Rather than hidden in a projection booth, as we often find in cinematic projection, the carousel slide projector is usually situated in the middle of an exhibition space and visitors cautiously position themselves around it, attempting not to disrupt the projection beam. Calling for our attention through the boldly audible clicks and the oscillation between lightness and darkness, the slide projector captures our attention and demands we notice it. Its presence is assertive. Its survival into the digital age, contrary to expectations, is perhaps due to this factor; rather than adapting to the digital, its stubborn resistance has ensured its enduring relevance.

As a form of media invented in the age of mechanical reproduction, slide film is part of the economy of reproducibles, as it is possible to produce slide duplicates. As such, what it projects is a photographic document of a past event. Yet, unlike print film, reversal film is photochemically processed as a positive image, and therefore it does not undergo the same intermediary process of printing from a negative. Presenting exactly what was captured on film, slide film more directly embodies the Bazinian continuum between the event of reality and the site of a photo image: what the camera saw is what you

get.⁵ In such ways, the slide image is at an intimate distance from the recorded event. The digital recorded image is also a translation, and arguably even more so than print film, as the captured moment is interpreted into pixels. A close observation of their renditions of “black” highlights the difference between a projected slide and its digital counterpart. While even “black”—as seen in intertitles, for example—is a pixel interpretation in the digital image and its projection, the alternation to “black” for slide projections is a direct result of the projection beam being physically interrupted by the mechanism of the apparatus that allows the switch from one image to the next. In this way, the display of “black” in a slide projection is an act that takes place in the present moment in a way that is unique for the projected analogue image. In its carousel form, slides also offer an alternative to cinema projection, and its fixed sequential succession of images as carousel slide projection has the function of a loop inherent in its form, where it is often impossible to determine a beginning or an end. Unlike cinema, where each image can be placed within the context of a sequence, the carousel slide projection does not have a “first” image and, as such, is always in the present moment, divorced from a sense of progression, narrative or otherwise.

In this chapter, I will propose that key characteristics of the carousel slide projector—namely, its presence and its engagement with the present—are further accentuated, first, by its placement into the contemporary context after it was effectively made redundant by the industry and, second, through its juxtaposition with other media in an intermedial encounter. Despite Kodak’s termination of its production in 2004, the carousel slide projector has long outlasted its industrial demise in a way that makes us question whether the user or the industrial producer determines the expiry date of a technological apparatus. In an age of swipe and scroll, technology and media are declared outdated at an accelerated pace. In a show of resistance against such imposed progress and the incessant capitalist promotion of the new, we must take a moment to consider the afterlife of so-called outmoded technology, as the line of scholarly enquiry known as media archaeology has continued to promulgate in recent years.⁶ The use of the carousel slide projector in the current context allows us to assess what we mean by progress and what we have lost or gained in the digital evolution. Not only finding relevance but excelling in the contemporary context, the carousel slide projector similarly reveals its unique characteristics through juxtaposition with other distinct media. Embodying features of two fundamentally different media, cinema and photography, the carousel slide projector showcases the porosity of its medial borders that allows for a fluidity in its interactions with other media in ways that also give shape to its key characteristics.

The chapter will examine the role of the carousel slide projector in two contemporary works to consider how the key features of the projector apparatus are highlighted through the gesture of revisiting the machine after its cessation and positioning the object among other distinct media. First, I will examine the carousel slide projector being used within the framework of contemporary performance. Through my analysis of Brazilian artist Pablo Pijnappel's *Casa de Michèle* (2014), a slideshow involving a live telephone conversation, I will discuss how key characteristics of the carousel slide projector are brought to the foreground by placing it in dialogue with other medial modes. Second, I will explore how the specificity of the slide projector is also highlighted in its presentation as an installation. In a close analysis of Thai artist Prapat Jiwangsan's slide-based installation *Non-chronological History* (2013), I will propose its multiprojection and intermedial formation emphasises its unique characteristics as a form of projection media. Apart from being two contemporary works that present the two different modes of performance and installation, the rationale for choosing these two case studies is twofold. First, being works that emerge out of Brazil and Thailand, they both exemplify the existence of slide-based work outside of the Euro-American circles that most recent studies have confined them to. The history of the slide projector and its use by artists needs to be reexamined beyond its Eurocentric geographical scope to give a fuller picture of the impact of this technology. Much of the academic and curatorial discourse thus far has entirely neglected slide-based activities and artworks produced from countries outside of North America and Europe. *Slides: A History of Projected Photography*, the aforementioned exhibition at Musée de l'Élysée, featured no artworks produced from outside of these two continents despite purporting to survey the history of the medium. Neither did *Slideshow*, curated by Darsie Alexander for the Baltimore Museum of Art in 2005, an exhibition serendipitously offered to audiences across the United States just a year after Kodak decided to terminate production of the projector apparatus.⁷ The omission of works outside of these Euro-American circles gives a one-sided history of the slide projector, resulting in narrow understandings of their use within and beyond artistic purposes. Considering slide projectors were used as pedagogical tools in Taiwan and Korea when they were under Japanese colonial rule, for example, nostalgia cannot be the only perspective from which we analyse slide-based works, as not everybody shared the same historical relationship with the technology. As Rosalind Krauss (1997: 5) notes, mediums "acquire histories" and, as such, are in continual negotiation with external factors that determine their existence and development. Second, as both Pablo Pijnappel and Prapat Jiwangsan also work with analogue film or digital film, their use

of slides can be interpreted as a choice that came with a recognition of what other medial forms offer. In both works, the carousel slide projector invites a consideration of time through its (dis)placement into the present, where it allegedly no longer belongs.

Slides as Performance: Pablo Pijnappel's *Casa da Michèle* (2014)

The story of media history is often defined by the advent of technology, so the continued artistic use of an apparatus long after its industrial demise challenges this story.⁸ In discussing medium specificity, Rosalind Krauss (1999) proposed to separate “medium” and “technical support” by considering media to be a set of conventions that are recursively made over time. In such ways, the medium can be made, or “invented,” while the technical support remains intact.⁹ Following this logic, media can evolve when the technological support finds itself in a position of obsolescence; thus, media can find new purpose, meanings, and sets of conventions. A teleological sense of progress is often expected with media, particularly the support for media, where new technological devices would render previous models obsolete by offering something its predecessors were not able to do. Yet, as Krauss (1997: 5) notes, the slide tape “must have been born obsolete,” as it arrived into the consumer market when most of its technicalities had already been surpassed by film and video. Invented half a century into the history of cinema and rendered outdated in the midst of cinema’s continued dominance, the slide projector nonetheless provided artists with something neither film nor photography gave them, namely, something in between both, which Krauss characterised as a “static seriality” (26). This particular temporality of the carousel slide projector is further emphasised when it is juxtaposed with another medium that possesses an entirely different temporal register, for example, performance. The ease of its use and the ability for a user to control its temporality meant that slide projectors were adopted by artists into slideshows, in other words, live presentations involving a slide projector, which accompanied the prevalence of performance in contemporary art from 1960s onwards. This symbiotic relationship, where one medium influences the development of the other, is in line with Philip Auslander’s (1996: 198) suggestion that liveness in performance emerged as its key characteristic only with the arrival of recording technologies. This section will focus on a recent slideshow performance by Pablo Pijnappel to examine the mutual reciprocation between the two mediums.

Born in Paris in 1979, Pablo Pijnappel is an artist based in Rio de Janeiro and Rotterdam with an artistic practice that primarily spans photography and film. His work interrogates memory as a subject but also as an experience for exhibition visitors and audiences that encounter his work. In his exploration of what he appropriately calls the “mechanisms of memory” (Pijnappel 2017: 8), his frequent choices of media are often 16mm analogue film and 35mm slides, both of which are considered obsolete forms of photographic media as their digital equivalents have surpassed them in popular consumption. As such, Pijnappel’s choice of old media evokes nostalgia and a tangible sense of history. The use of old media as a historical artefact helps the artist stage an interplay with time, with storytelling as his chosen method, a narrative device that brings about a sense of the present regardless of the content of the story. In his film *Lucas* (2013), for example, Pijnappel films himself in a single take delivering a story accompanied by several images printed on paper that he displays in front of him. Loosely based on the fragmentary novel *A Certain Lucas (Untal Lucas)* by Julio Cortázar, the artist-cum-storyteller shares glimpses of an encounter and stories shared by the titular protagonist Lucas in a manner that evokes the Japanese storytelling tradition of *kamishibai*, where on-street performers would tell stories armed with a stack of paper, each piece with a single drawing, that they would slide one by one out of its frame and put aside as the story progresses. In the case of *Lucas*, however, Pijnappel accentuates the materiality of each page by spinning it around, waving it, and crumbling it into a ball in moments within the story where the gesture would reflect on the described scenario. In this way, the interplay between the image and the story places an emphasis on the present moment in which the story is being shared. Considering storytelling to be a key part of his artistic practice, he describes it as a mode of recollection that involves “always looking back, or at least, to project the past into the future” (2017: 8). Pijnappel expanded on this particular aspect of his artistic practice through storytelling as live performance and brought the carousel slide projector with him.

Carousel slide projectors have always had a strong association with storytelling. As with many iterations in the history of slide projectors, the carousel slide projector was intended as a domestic product for household entertainment. Storytelling took place, albeit in a more private manner between family and friends, when members of a household shared personal accounts accompanied by the projection of family photos taken on holidays. The popularity of the medium beyond this purpose was mostly happenstance, although its ease of use was part of its design, enhancing its accessibility, which certainly contributed to its popularity among artists. Entering the market at a time when small-gauge film and video were both also in their ascendance, the carousel

slide projector was affordable, simple to operate even for those without much technical knowhow, and lightweight, relatively speaking, increasing its portability. The carousel slide projector also emerged at a time when performance was becoming popular as a mode of artistic expression, despite its fundamental difficulties in thriving in the art market due to its lack of a purchasable art object. Jack Smith, Dan Graham, and Nan Goldin used the carousel slide projector in their performances, which would often involve storytelling and have various iterations.¹⁰ The performances were often the kind staged in front of intimate audiences who gathered together at alternative spaces, which once again benefitted from the operational simplicity and ease of mobility that the projector apparatus provided. Often also used in lecture theatres in educational environments, the carousel slide projector can be seen as an early precursor to the artist's adoption of the lecture performance, a contemporary mode of artistic expression that often incorporates PowerPoint software, a derivative of slideshows. Preceding the carousel slide projector by centuries, the magic lantern slide, the earliest form of slide projectors, was another instrument for stage performances and entertainment shows where storytelling held a central position. The slide projector thus had an intimate relationship with storytelling as a mode of performance from the outset of its invention.

Pijnappel taps into this history of the projection apparatus in his performance *Casa da Michèle* (2014), a live telephone conversation and slideshow, which the artist staged on 1 March 2014 at the Galerie Juliette Jongma in Amsterdam.¹¹ Pijnappel invited artist Adaire Reeford to talk to him about a film he was trying to make in Rio de Janeiro while staying in the house of the famous French artist Michèle Gálvez Forst, armed with a carousel full of photographs made during his location scouting. Reeford, however, got stuck in a traffic jam on his way to the airport and missed his flight. Changing plans, Pijnappel and Reeford connected over a phone conversation instead; with the telephone wired into a PA system, audiences, including myself, listened in for close to an hour while watching projected photographs of serene street corners, museum artefacts, and a random assortment of images taken by Reeford while he recounted his days spent as an artist in residence, which mostly involved social occasions like dinner parties and gallery openings. With frequent detours, the story was delivered in a relaxed tone and with a touch of humour. The projected images would at times confirm accounts shared by Pijnappel's faceless conversation partner, attesting to the power of visual affirmation for the experience of the listener. In other moments, however, the projected images would contradict details offered in the story and begin to undermine its authenticity, leading the audience to ask about the veracity of the performance itself: If Reeford was unable to make it, how did the

photographic slides arrive in Amsterdam? And why would Pijnappel invite another artist to share his experience as an artist in residence in Rio de Janeiro for the closing event of his exhibition? Though it was never revealed during the performance, Reeford is, in fact, a fictional character, and the entire situation was staged.

While audiences sat listening to the performance, their bodies were comfortably fixed in their seats but their minds were continuously activated as the performance encouraged connections between image and story. As Reeford spoke, the slide images, eighty in total, appeared and disappeared in perpetual rotation; we'd see the same image several times throughout the performance. Occasionally the improvised conversation would sync with the projected slide image, and at other times Reeford's recollections would appear to refer to an image we'd just seen or would see shortly thereafter.¹² These coincidental moments highlight the cross-temporal oscillations that take place in the act of storytelling. For example, an image of the viewing stands at a horse race appeared when Reeford recounted a story of how he gambled on the jockey with the longest nose, boasting that his beginner's luck rewarded him with some profit. In these moments of unrehearsed coincidence, the liveness of the performance would be highlighted because of the tension created between the immediacy of the conversation and the projected image photographed in the distant past. The performance also encouraged its audience to engage in their own process of memory by making spoken references to images they would have encountered while watching the carousel go through its numerous rotations. The cross-temporal condition of storytelling—where the present meets the past or an imagined future—is emphasised even further in the dynamic interplay between live performance and slide projection. Containing photographic records taken from another place and in the past, slides are presented in the context of a live performance with a devotion to the here and now. While the two media are brought together in their concurrent staging, the juxtaposition draws out the essential qualities of both. This intermedial encounter, where the idiosyncracies of each end up being highlighted, recalls 1960s expanded cinema where the “liveness” of performance is brought together with cinema in a way that highlights the reproducibility of the film medium and its machinic reliance by way of comparison. Historical accounts of expanded cinema have found that artists and filmmakers were using both film and slide projection in their expanded cinema performance.¹³ But what is it about slides that offered something distinct? Carolee Schneemann, in conversation with Gene Youngblood (1970: 368), stated, “I like using slides against films because I can start and stop, overlap, black out, manipulate.” Again, its mechanical characteristics and relative ease of use allow for carousel slide

projectors to offer moment-to-moment shifts for artists and, therefore, to be adopted into the language of performance and the immediacy it requires.

Slides as Installation: Prapat Jiwarangsan's *Non-chronological History* (2013)

Similarly to performance as a mode of expression, installations provide a platform and avenue for an engagement with the present. Art historian and philosopher Juliane Rebentisch (2012: 185), in fact, suggests we should call a work an installation only when there is a “structure of temporal openness.” With the loop structure embedded into its very form, the carousel slide projector was quickly adopted into the exhibition context in the 1960s. Arguably, it was the first projector apparatus that offered the installation form as an option for moving image projection, and its early uses in the art context foreshadowed the prevalence of moving image installation that was to take over the artworld in the years to come. Installation remains the preferred format in the artistic use of the carousel slide projector. This section will focus on a slide-based installation by Thai artist Prapat Jiwarangsan to examine how the framework of an installation offers opportunities for contemporary artists using the carousel slide projector to stage an interaction with the present and with other media.

As its title suggests, *Non-chronological History* (2013) by Prapat Jiwarangsan reshuffles the chronology of over two hundred years of Thai political history in its simultaneous multiprojection formation. What is visible on the individual slides is a seemingly endless list of Thai names, which are relevant in one way or another to Thai history, but in this presentation are taken entirely out of context and stripped of individual status; some of the names are well-known and many others are less so, and each name is presented in identical fashion in order to de-emphasise any preestablished hierarchy of importance. The multiprojection creates associations between the names that establish continuity between the names and their associated historical events based not on linearity but on interconnectivity. The random connections that are configured between the names allow for speculation on the emergence of deeper connections between various points in history. For example, Praison Thompson, one of the names presented in the installation, was one of ninety-three people killed in the 2010 military crackdown on protests that took place near the Democracy Monument in the city centre of Bangkok. This name might appear before, after, or together with, for example, Bat Pheungphrakhun, who was a member of the Khana Ratsadon (Peoples' Party), a Siamese group of military civil officers who staged a coup against King

Prajadhipok, which led to the transformation of the country's absolute monarchy into a constitutional monarchy in 1932. Living almost a hundred years apart, the two ostensibly have little to do with one another, but the installation establishes a continuum and situates them together in interconnectivity. In its most recent installation involving nine carousel slide projectors, approximately seven hundred names are displayed as individual slides; because each projector is set at different projection speeds, the potential associations that develop between them are seemingly endless. Most important, these relations are subject to chance rather than predetermined, as they would be if it were a film projection, where the sequentiality would be fixed.

The stipulated duration of *Non-chronological History* at 59 minutes 57 seconds similarly rejects the perfect circle of the hour in a way that proposes reevaluations of history cannot be neatly fit into preestablished experiences of time or understandings of history. Yet, in principle, the work functions as a loop, as its duration is dependent on the viewers' attention, the hours the space is open, and the durability of the projector. Jiwangsan approaches the installation of his work differently on each occasion: the first iteration was installed at the Bangkok Art & Culture Centre in 2014; its second version was presented in the context of the exhibition *Concept Context Contestation: Art and the Collective in Southeast Asia*, a 2015 touring exhibition in Yogyakarta, where he included names of Southeast Asian citizens who had had a role in Southeast Asian political history since the Cold War era, thus establishing an intraregional set of possible connections. In 2016, at a solo exhibition in Corner Art Space in Seoul, he presented the previous two versions together. Most recently, in 2019, his installation used nine slide projectors, three sets of three projectors stacked on top of each other, all projected against the same wall in a grid-like formation (Figure 5.1).¹⁴ The varying status of the work appears to suggest that Jiwangsan considers history, the subject of this piece, as something that can and should be endlessly reworked and rethought.

Thailand has experienced an extended period of instability over the past century, only selectively remembered in official state history and in history lessons at school, and marked by twelve coups since the end of direct rule by the kings in 1932. With the latest coup staged in 2014, it is no mistake that Jiwangsan first presented this project in the same year, another moment of reflection for Thai citizens who have been experiencing history as recurring. Jiwangsan includes several slides with no names in each carousel, which appear at random in the projections. These slides, for Jiwangsan, represent two groups of people who are left unaccounted for: actors or victims of history who remain anonymous or unknown and people in the future who will take



Figure 5.1 The slide projectors for *Non-chronological History* (2013) by Prapat Jiwangsan at group exhibition *Blackout* in Ambika P3, London, March 2019. Photo by David Freeman, University of Westminster.

part in the formation of Thai history.¹⁵ In this way, Jiwangsan utilises the circularity of the carousel slide projector in his recognition of history as an act in continual development but one that often repeats itself. Newly suggested connections are drawn between different moments in the past, and even possible futures, but each moment in time is pulled into the present. In this regard, it is interesting to note that Jiwangsan has chosen digital video for his various works that deal with the subject of Thai migration to other parts of the world: to South Korea in *The Wandering Ghost* (2017), to Japan in *Destination Nowhere* (2018), and to Singapore in *Ploy* (2020). In his film *Dok-rak (The Asylum)*, 2015), one of his documentary subjects is a child from Myanmar seeking refuge in Thailand. Although the decision to migrate is not a choice made out of a sense of freedom but rather one that is forced, Jiwangsan uses single-channel video when his subjects are in transition; in conveying a sense of his home country being stuck, he chooses to work with the carousel slide format.

As with Pijnappel's performance *Casa de Michèle*, the particularities of the carousel slide projector are highlighted through its juxtaposition with other media in the installation of *Non-chronological History*. Jiwangsan stages a play of contrasts between photographic media in his most recent installations

of the work by presenting the slide installation alongside *Dust under Feet* (2011), his project that involves a pile of photographs the size of dust particles that each depict individual portraits entirely detached from any context or name.¹⁶ In contrast to the ephemerality of the slide projections, the mini-photographs gathered on a tabletop are resolutely material, as they are visible first and foremost as an accumulation of tiny bits of material and only later, with the assistance of magnifying glasses, reveal themselves to be a series of portrait photographs.¹⁷ The anonymous faces represent Thai citizens whose names might not be widely known but who nevertheless are impacted by historical events.¹⁸ While addressing the individual in the broader current of history, the two artworks juxtaposed together, which is currently Jiwangsan's preferred mode of display, offer a staging of contrasts that highlight the specificities of each. The loud cacophony of mechanical sounds emitted by the nine slide projectors is amplified by the silence of the display of miniature photographs. The physical interactivity expected in the experience of *Dust under Feet* differentiates itself from the automatic rotation of the slides that continue onwards, with the loop as its structural determinant. In such ways, the interaction with other media accentuates the specificities of the carousel slide projector.

In his use of the carousel slide projector, Jiwangsan also gestures towards its use in education. Alongside overhead projectors, carousel slide projectors were a familiar sight in universities and schools in the past century, until digital beamers were installed in the classroom. The portable and simple apparatus provided a useful way to initiate the collective study of a photograph or an illustration, often to accompany science and art history lessons. Jiwangsan deals with the subject of education directly in *Aesthetics 101* (2019), a slide-based installation that is an artistic outcome of his sifting through seven thousand slides that he inherited from Somkiat Tangnamo, an art history professor who was also the founder of Midnight University, a Thailand-based free and online educational project and discussion forum for political and social issues. Although Tangnamo passed away in 2010, the online forum he founded continued to be active until 2014, when Thailand's military junta blocked access to its website. Continuing his legacy for education and commitment to social debate, Jiwangsan presents a selection of Tangnamo's slides that he used for his classes that are made visible to exhibition visitors through carousel slide projectors and lightboxes.¹⁹ Just as it does for *Non-chronological History*, the multiprojection slide installation initiates random connections between different projected images and encourages the exhibition visitor to come up with their own associations.

Conclusion

An artist who has made several digital films, Jiwarangsan's choice of the carousel slide projector is deliberate.²⁰ Unlike artists in the 1960s and 1970s who found an affinity with the projector at least partially due to its portability and ease of use, the decision by Prapat Jiwarangsan and Pablo Pijnappel to use this antiquated object comes at significant cost in both budgetary and technical limitations. Due to decreasing consumer demand, increasingly few laboratories take on the photochemical development of slide film, and for similar reasons most technicians no longer possess the technical expertise and experience required. At the current state, their digital equivalents would provide contemporary artists with what the carousel slide projectors offered artists in the 1960s. As such, the use of the carousel slide projector comes down to other factors, and it has been the primary undertaking of this chapter to pinpoint some of the artists' motivations.

Reasons contemporary artists may utilise the defunct medium despite its apparent obsolescence are manifold, but can be broadly categorised into two thematic frameworks. First, the carousel slide projector has presence. In the contemporary context, where digital media increasingly seeks to conceal itself and its mechanisms, the carousel slide projector is both physically and sonically assertive. Second, despite its display of reproduced images, the carousel slide projector resists the linearity of progression found in cinematic projection and, with its looped structure, engages with the present. As my analysis of Pablo Pijnappel's and Prapat Jiwarangsan's slide-based works has demonstrated, these key characteristics of the carousel slide projector are given attention in the staging of the projector apparatus in two ways: its use in the contemporary context after the demise of its industrial production and in intermedial dialogue with other distinct media.

An analysis of only the artistic use of the carousel slide projector during the time of its industrial production would be a disservice to the number of artistic projects that continue its legacy beyond its expiry date. In fact, observing its use in the current digital context gives a stronger indication of its specific characteristics that contribute to its excelling in its afterlife. While I hope my analysis of the two case studies in this chapter contributes to internationalising this field of study, there is much work to be done in exploring both historical and contemporary slide-based works on a global scale; achieving this would provide us with a dynamic history of the slide projector which, much like its carousel form, will not offer a clear-cut sense of linear progression.

Notes

This research on contemporary uses of the carousel slide project was undertaken as part of my Leverhulme Early Career Fellowship at the Centre for Research and Education in Arts and Media, University of Westminster, in 2015–2018.

1. The only artwork exhibited was *Sea Grammar* (2015) by Swedish artist Runo Lagomarsino, which involves a series of slides depicting the view of the sea interrupted by perforations that accumulate in number as the carousel rotates.
2. James Richards's *The Screens* (2013) involved four slide projectors positioned adjacently and facing the same wall, and Tris Vona Michell presented several slide-based works, including *Finding Chopin: Dans l'Essex* (2014).
3. Tina Weidner (2011), a conservator at Tate who led the research project *Dying Technologies: The End of 35 mm Slide Transparencies* (2011–2012), breaks down the etymologies of the words used to describe slides in several languages: "All three terms *slide*, *transparency* and *dia* describe an ephemeral presence, a state in which a picture is formed, lasts and disappears." Weidner references the exhibition catalogue of the German exhibition: Bauer (2000).
4. In the case of flicker films such as *Arnulf Rainer* (Peter Kubelka, 1960) and *The Flicker* (Tony Conrad, 1966), where black film leader and clear film leader oscillate in quick succession, the subject of the films is arguably the individual frames, and as such, viewers are encouraged to be more attentive to them or, at least, the existence of individual frames in the composition of a film.
5. Instant film, most famously produced by the Polaroid Corporation, also establishes a direct continuum between the photographed event and the photograph and has similarly been a subject of a resurgence of interest.
6. Media archaeology, as seen in Zielinski (2006), Parikka (2012), and Huhtamo (2013), maps out a genealogy of media that questions the commonplace trajectory of its development as becoming progressively complex. In this scholarly field, defunct and forgotten forms of media are excavated and their place in the history of media reassessed. I consider my project on carousel slide projectors and their artistic use to be in touch with and in response to this line of enquiry.
7. The exhibition was first presented at the Baltimore Museum of Art between 27 February and 15 May 2005, after which it travelled to Contemporary Arts Center in Cincinnati, Ohio (2 July–11 September 2005) and the Brooklyn Museum in New York (7 October 2005–8 January 2006).
8. Again, the assumed linearity of technological and, in the case of cinema and other artistic media, creative progression can be undermined by such examples that complicate the history of technology as a succession of inventions. Jean-Louis Comolli (2015: 198) points out the issue of the overuse of the "fixed syntagm 'for the first time'" as it alludes to film language as something that is progressively developing as if film history was working towards a unified goal: "Ineluctably, it seems, the decisive operation of these 'histories' is to evoke and give an overview of the greatest possible number of technical, stylistic and formal innovations, each one of which is presented (and sought out) as the initiation of a succession of aesthetic developments (the 'progress' of a 'language') whose finality, endpoint or perfection is the cinema such as it is practised at the moment when each historian writes its history."

9. Krauss (1999: 289–305) expands on this further.
10. While their slide-based artworks are often exhibited as installations, many of them were originally performances: Nan Goldin's *The Ballad of Sexual Dependency*, for example, was originally a series of improvised live performances with slide projectors prior to its current form as an installation. For example, it was presented at the 1985 Whitney Biennial as a screening.
11. The performance was presented as the closing event for his solo show *Pareciam ser de um cinza translúcido*, held between 11 January and 1 March 2014 at the gallery. The aforementioned film *Lucas* was also installed in 16mm projection as part of the exhibition.
12. The play with synchronisation between audio and image evokes Hollis Frampton's (*nostalgia*) (1971), a film where the audience is shown a series of still photographs placed on an active burner one after another. As the photograph disintegrates, we hear a story that relates to the image that we will see next, an asynchronic pattern that continues throughout the film and similarly expects an active spectatorship from the audience.
13. Andrew V. Uroskie (2014: 167, 240) discusses the works of Stan VanDerBeek and Ken Dewey that combined slides and film projection. In my research on 1960–1970s Japanese expanded cinema, I have come across works that combine film and slide projection by artists such as Hiroshi Manabe, Takahiko Imura, Toshio Matsumoto, and Kenji Kanesaka and in the collective work *Document 6.15* by Van Film Science Research Centre (see Ross 2014).
14. This version of the installation was presented in the context of *Blackout*, a group exhibition I curated in 2019 that was presented in the following venues: Kunstal, Rotterdam, as part of International Film Festival Rotterdam, 24 January–3 February; Ambika P3, London, 12–17 March; and Greylight Projects, Brussels, 3–14 April, in the context of the multi-university research project B-Magic. While it was previously presented in variations of a triple-projection version, Jiwangsan always intended for the piece to involve nine projectors and had prepared eight hundred slides, which are in fact enough for sets of carousels. Nonetheless, until his participation in *Blackout*, he had not been able to realise his original intentions due to budgetary and technical limitations. *Non-chronological History* featured alongside nine other installations using the carousel slide projector in various ways, all made after Kodak cancelled its industrial production.
15. Jiwangsan in conversation with me during the installation of *Non-chronological History* at Kunsthall Rotterdam, 2019.
16. Jiwangsan presents both works under one title, *Non-chronological History*, on his artist website, <http://www.prapat-jiwangsan.com/>.
17. According to 10 Chancery Lane Gallery, Hong Kong, which represents the artist, the artwork comprises three thousand digital prints.
18. The title of the work is an allusion to the Thai phrase “May the power of the dust on the soles and the dust under the soles of your royal feet protect my head and the top of my head,” which is a formal address expected to be delivered to the king as a form of subjugation.
19. *Aesthetics 101* was commissioned for the 2019 Singapore Biennale, 22 November 2019–22 March 2020, and installed appropriately for the duration of the show at an educational institution, the LASALLE College of the Arts. At this installation, Jiwangsan used two carousel slide projectors, four LED video projectors, and two lightboxes that were accompanied by magnifying glasses. According to Jiwangsan, the analogue and digital hybrid formation was primarily due to technical limitations. An earlier version of *Aesthetics 101* was presented as a digital film at the film festival EXiS in Seoul, South Korea, in 2016.

20. Jiwangsan's recent digital films include *Parasite Family* (2022), *Ploy* (2020), *Destination Nowhere* (2018), *The Wandering Ghost* (2017), and *The Asylum* (2015). His films have been presented as installations in galleries and museums but also as cinematic projections at international film festivals, including at International Film Festival Rotterdam, Singapore International Film Festival, and Internationale Kurzfilmtage Winterthur.

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