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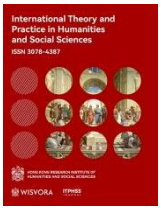

A Research study on Lee Bul's Cyborgs series – From a perspective of lighting

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Abstract

Whereas previous artist studies of Lee Bul's Cyborg Series have fixated primarily on tangible elements such as objects, displays, and space, the influential intangible element of lighting has proven neglected. By reviewing and categorizing previous reviews, critics, and interpretations from curators, scholars, and writers, this paper identifies this omitted perspective and constructs a unique research framework for analysis. Lee's Cyborg series was impacted by the Cyborg Theory proposed by Donna Hoaraway, which had potentially huge implications for feminist art. Interpretations through lighting are essential, which enriched Lee's attitudes towards the notion of cyborgs. Based on the lighting theory established by Stanley McCandless and the analysis of lighting methods in the visual arts, this article devises its own lighting questions for analytical purposes and presents a distinct account and interpretation of key exhibitions after researching nearly sixty solo exhibitions that spanned over a decade. This paper argues that by changing the lighting's key parameters, including intensity, distribution, color, and movement, ambivalent attitudes towards cyborgs are successfully transmitted to the viewers by the artist and the exhibition curators. Thus, it is not only the tangible elements of an artist's work that scholars should focus on, but also the intangible elements that play a major role in the interpretation of an artwork.

1.Introduction

The cyborg, as "a hybrid of machine and organisms", "resolutely committed to partiality, irony, intimacy, and perversity". It is "oppositional, utopian, and completely without innocence". (Haraway et al., 1991) Haraway writes in her essay "*A Cyborg Manifesto*". While it was Haraway who textualized cyborgs, Lee is the first artist to use sculptures to explore and criticize the meanings behind the term "cyborgs" through the lens of Asian culture. Her artworks therefore lead to extensive cogitation and discussion, both in a local and international context. However, previous commentary and debates were mainly based upon visual observations and analysis of tangible parameters such as sculpting details and ways of displaying, while none of them voiced opinions regarding the influences of intangible elements such as lighting. To fill the gap, this paper will concentrate on examining the impact of lighting on Lee's cyborgs, as well as how her use of diverse lighting techniques communicates emotions or expressions to the audience.

Stanley McCandless is widely regarded as the father of modern lighting design. His insights into stage lighting continue to significantly influence contemporary lighting designers. This essay employs the lighting theory developed by McCandless, in conjunction with a systematic lighting analysis method, to present a unique perspective that explores the complex emotions and profound ideas evoked by the artist's cyborg sculptures. According to McCandless's lighting theory, "moods are often triggered by particular lighting scenarios". (Lee et al., 2008) "A discussion of lighting would be incomplete without some mentions of the objects and surfaces". (MacCandless et al., 1947) Drawing upon McCandless's theory, this paper explores how the essential elements of lighting—namely intensity, distribution, color, and movement—have influenced the presentation of shapes and textures in cyborg sculptures that evoke varied psychological responses from audiences. Through this kind of strategic lighting design, this article argues and concludes that ambivalent attitudes towards Lee's *Cyborgs series* can be investigated not only by the tangible elements but also by the intangible parameters.

To demonstrate my argument, this paper will be organized into the following sections. Firstly, a neglected analysis of lighting is discovered by reviewing and categorizing previous reviews of the *Cyborg series*. Secondly, we focus on the research framework, including methodology, methods for lighting analysis, and exhibition selection. After an exhaustive study of Lee's approximately sixty solo exhibitions from 1998 to 2019, we selected seven of them to conduct the analysis. Finally, a summary and conclusions are provided at the end of this paper.

2. Comments Review on *Cyborg* Series

Through a review of previous comments, this paper finds that earlier comments were mainly grounded in posthumanism, cyborg theory, and feminist theory, which stemmed from an examination of tangible elements such as sculptural shapes and details, materials, colors, and exhibition displays. Firstly, from the perspective of post-humanism, curator Rachel Kent intuitively feels the desire for a perfect and eternal body in Lee's cyborgs. In comparison, some of the following curators and writers post more controversial comments derived from the perspectives of Cyborg Theory and feminist theory. Scholar Jeon Hye-sook argues that by creating those disabled female cyborgs, Lee breaks the stereotype of the male gaze, indicating that women are better suited to work with technology than men. (Jeon et al., 2017) Nevertheless, the armor-like corsets depicted in the sculptures contribute to a more pessimistic perspective among some scholars. Writer Yvonne Volkart suggests that gender and female sexual characteristics continue to hold significance, even in cyberspace. Meanwhile, Volkart mentions that by creating "puppet girls", men "hope to master the uncontrollable nature of femininity". (Yvonne et al., 2000) Lee's cyborgs reveal her concern about the lack of subjectivity in women. The view is also supported by Kurzmeyer, who asserts that "as feminine posthumans, they are still oppressed by men, and their position remains unchanged in the progress of science and technology". (Kurzmeyer et al., 1999) The artist herself talks in an interview for her cyborgs, "Interestingly, these cyborgs always have a master, usually a young man or boy who programs or controls them". (Bul et al., 1998)

In the post-war period, Japan has shown a strong desire to build a high-tech-driven powerhouse, as has South Korea. To build a technologically strong country, the government implemented science education for the younger generation. Japanese animated characters such as Astro Boy and Mazinger Z therefore became particularly popular in South Korea and gradually influenced the daily lives of children during the 1970s and 1980s. Kurzmeye notices this cultural penetration has a significant impact on Lee's cyborg. She comments that the cyborgs are reminiscent of the

fearless, invincible female figures of Japanese anime. As claimed by Lee in an interview when talking about her inspirations, "I have acknowledged Haraway's theory, but the originality is from the cyborgs in animations, especially Japanese *manga* and *anime*". (Bul et al., 1998) Unfortunately, the souls of those girl warriors are sealed inside mechanical bodies, as in the Japanese anime *Ghost in the Shell*, the curator Rebecca Gordon Nesbitt adds, and Lee's cyborgs are merely the representations of shells containing souls or ghosts. (Rebecca et al., 2001)

Public remarks and interpretations of Lee's cyborgs also centered on the choice of color, the use of materials, and the presentation of the sculptures. Jieun Rhee gives a relatively negative view on white-skinned cyborgs, she argues that the white color "eases the wildness" of the cyborgs. As a result, such white-painted cyborgs evoke associations with classical sculptures commonly found in museums. (Rhee et al., 2011) The truncated white figures have idealized body shapes that recall Roman art. According to Lee, the use of white, which has connotations of "timelessness" and virtue, as well as classical sculpture techniques, alludes to the perfectibility that her cyborgs imply. (Kataoka et al., 2012) The use of materials is noticed by scholar Jihyung Ha, who points out the ironic meaning behind the application of silicone in her dissertation. Silicone is normally a medical material used to repair or beautify the body, so the fact that Lee applies this material to those incomplete bodies is eerily ironic. Ha also refers to the supports used in the installation and indicates the lack of independence of women in the future. (Ha et al., 2014) Lee's cyborgs, with missing heads and limbs, are always displayed hanging on wire from the ceiling. Kuroda, a Japanese art historian, portrays them as Korean female victims whose body parts have been plucked off, like "the corpses after the violence of sexuality". (Kuroda et al., 2000) However, the writer Keira McCarthy holds a more positive view on the sculpture's display, where the cyborgs are suspended in an exhibition either low to the floor or further off the ground. She argues that, compared to the ones hung lower, the ones hung higher look less eroticized and create a male gaze rejection. (McCarthy et al., 2022)

After reviewing and categorizing previous comments and interpretations, this paper identifies the intangible parameters, such as lighting, applied to Lee's cyborgs that have been neglected in the discussion. Consequently, a comprehensive elucidation and examination of the lighting is provided below.

3. Research Framework

3.1 Lighting Theory

This paper applies the lighting theory according to Stanley McCandless's book, *A method of lighting the stage*, which was published in 1932. Light can be defined and described based on four qualities: intensity, distribution, color, and movement. Intensity relates to the brightness of the light. McCandless defines distribution as forms, which relate to two specific properties: angle (or direction) and quality. Angle refers to the direction from which the light is coming, and quality refers to the texture and characteristics of the light. Color is the easiest to define but hardly to control as it might be altered due to object absorption. Movement also refers to changes by McCandless, it refers to the changes in light from moment to moment, it can be a shifting of light color or relocation of light sources. Disparate psychological responses can be triggered by different lighting scenarios in the same space. To create a mood through light, intensity is one of the primary elements. Audiences produced a positive and healthy emotion in a well-lighted environment, while a negative feeling occurred in a darker room or corridor. (Dunham et al., 2015) When light strikes on the surface of an object, it not only helps people see the forms, but also "judge the spatial relationship between objects based on prior experience and memory". (Dunham

et al., 2015) The colors red, orange, and yellow, which are located on the warm side of the spectrum, might evoke feelings of comfort and anger. Blue, purple, and green, which are on the cool side of the spectrum, might raise feelings of calmness and depression. The dynamic nature of lighting can also contribute to the dramatic quality of an event. (Dunham et al., 2015)

3.2 Lighting analysis method

Except for the mentioned parameters of light theory to be considered, this paper also references the light observation method from the book *Light for Visual Artist.* To Lee's *Cyborgs series*, the following questions for a thorough analysis was carried out:

Is the overall atmosphere bright or dark? What is the key light in this installation? Does it come from lamps or the sun? Any other lights except the key light? What is the color of the lights? Is the light a direct light or a reflected light? Has the lighting created clear outlines of the subject? What does the subject look like under the light? Are there any atmospheric factors, such as fog or smoke, that affect the lighting? Does the lighting move, and how does it feel when changing from time to time? What kinds of sensations does the lighting convey? (Yot et al., 2021)

3.3 Exhibition Selection

To find the appropriate exhibitions and conduct the analysis on Lee's *Cyborgs series*, the following criteria must be satisfied:

The selected exhibition must be Lee's solo exhibition.

The exhibition that shares space with Lee's other works except for the *Cyborg series* is excluded.

Given the conflicting interests of artists, galleries, and museums, the presentation of Lee's "Cyborgs" was affected by a group show. Furthermore, when the *Cyborgs series* is present in the same space as Lee's other works, a new meaning is created, and the originality and intentions of the series was lost. However, the *Monster* series is the "dark doppelganger" (Kim et al., 2002) of Cyborgs, and the *Anagram series* is a combination of cyborgs and monsters. All three series are in relation to Haraway's Cyborg Theory, which interrogates critical issues of gender, race, and class identity. As a result, the exhibitions, which include the *Monsters* and *Anagram,* together with the *Cyborgs,* still be included.

To ensure the accuracy of this research, a summarized table of Lee's previous solo exhibitions provided by Lehmann Maupin (Table 1.1), a gallery that represents a diverse range of contemporary artists, is used as a database for this paper. From 1998 to 2019, the Cyborgs series has been shown seventeen times, according to the database. After removing exhibitions that presented in the same ways or those without photo resources, seven out of fifty-eight exhibitions have been selected in this paper for discussions and analysis. Among which, two exhibitions for *Cyborg Red and Blue* and five exhibitions for the *Cyborg W series* are chosen. A table of selected solo exhibitions with additional details stated in Table 2.1.

Table 1.1 Lee Bul's Selected Solo Exhibitions, *Lehman Maupin*

Year	Exhibition place
Dark Exhibition space	
1999	48th Venice Biennial
2002	Le Consortium Museum
2004	Museum of Contemporary Art (MCA)

2012	Mori Art Museum
Bright Exhibition space	
1998	Artsonje Center
2003	The Japan Foundation
2018	Martin Gropius Bau

Source:https://www.lehmannmaupin.com/attachment/en/5b363dcb6aa72c840f8e552f/TextOneColumnWithFile/5b3649fba09a72437d8b4d36 [accessed on 13rd March 2023]

Table 2.1 Lee Bul's Solo Exhibitions List Provided by Lehmann Maupin

Number	Year	Solo Exhibition	Country	Does the exhibition include any Cyborg series?	Any photos available of the Cyborg series in the exhibition?
1	1998	Artsonje Center	Seoul, South Korea	● ▲	Yes
2	1999	48th Venice Biannale	Venice, Italy	▲	Yes
3		Kunsthalle Bern	Bern, Switzerland	▲	No
4	2000	Fukuoka Asian Art Museum	Fukuoka, Japan	No	No
5		Kukje Gallery	Seoul, South Korea	No	No
6	2001	Fabric Workshop and Museum	Philadelphia, PA	No	No
7		SCAI the Bathhouse	Tokyo, Japan	Yes	No
8		San Francisco Art Institute	San Francisco, CA	No	No
9		BAWAG Foundation	Vienna, Australia	No	No
10	2002	Lehmann Maupin	Toronto, Canada	Yes	No
11		MAC	Marseille, France	Yes	No
12		Jean Paul Slusser Gallery	Ann Arbor, MI	No	No
13		New Museum of Contemporary Art	New York, NY	No	No
14		Le Consortium	Dijon, France	●	Yes
15		PKM Gallery	Seoul, South Korea	No	No
16		Rodin Gallery, Samsung Museum of Art	Seoul, South Korea	No	No
17		Orange County Museum of Art	Newport Beach, CA	No	No
18	2003	Henry Art Gallery	Seattle, WA	No	No
19		Centre for Contemporary Arts	Glasgow, Scotland	No	No
20		Ohara Museum of Art	Kurashiki, Japan	●	No
21		The Japan Foundation	Tokyo, Japan	● ▲	Yes
22		Scottsdale Museum of Contemporary Art	Scottsdale, AZ	No	No

23	2004	MCA, Museum of Contemporary Art	Sydney, Australia	▲	Yes
24		PKM Gallery	Seoul, South Korea	No	No
25		Deitch Projects	Ney York, NY	No	No
26	2005	SCAI the Bathhouse	Tokyo, Japan	No	No
27		Govett-Brewster Art Gallery	New Plymouth, NZ	No	No
28	2007	Fondation Cartier pour l'art contemporain	Paris, France	No	No
29		Galerie Thaddaeus Ropac	Salzburg, Austria	No	No
30		PKM Gallery	Seoul, South Korea	No	No
31		Domus Artium 2002	Salamanca, Spain	Yes	No
32	2008	PKM Gallery	Seoul, South Korea	No	No
33		Lehmann Maupin	New York, NY	No	No
34	2009	Galerie Thaddaeus Ropac	Paris, France	No	No
35	2010	PKM Gallery	Seoul, South Korea	No	No
36		Lehmann Maupin	New York, NY	No	No
37	2012	Artsonje Center	Seoul, South Korea	Yes	No
38		Mori Art Museum	Tokyo, Japan	▲	Yes
39	2013	MUDAM	Luxembourg	Yes	No
40		Galerie Thaddaeus Ropac	Paris, France	No	No
41		Lehmann Maupin	Hong Kong	No	No
42	2014	Korean Cultural Centre	London, UK	No	No
43		National Museum of Modern and Contemporary Art	Seoul, South Korea	No	No
44		Lehmann Maupin	New York, NY	No	No
45		Ikon Gallery	Bermingham, UK	No	No
46	2015	Vancouver Art Gallery	Vancouver, Canada	No	No
47		Palais de Tokyo	Paris, France	No	No
48		PKM Gallery	Seoul, South Korea	No	No
49		Espai d'art contemporani de Castelló	Castelló, Spain	No	No
50		Swarovski Crystal Worlds	Innsbrusk, Astria	No	No
51		Musée d’art modern de Saint-Etienne	France	No	No
52	2016	Artsonje Center	Seoul, South Korea	Yes	No
53	2017	Thaddeus Ropac	London, UK	No	No
54		Lehmann Maupin	Ney York, NY	No	No
55	2018	Martin Gropius-Bau	Berlin, Germany	▲	Yes
56		Hayward Gallery	London, UK	▲	Yes

57	2019	Lehmann Maupin	New York, NY	No	No
58		SCAD Museum of Art	Savannah, GA	No	No

Source: Lehmann Maupin, various of sources.
https://www.lehmannmaupin.com/attachment/en/5b363dcb6aa72c840f8e552f/TextOneColumnWithFile/5b3649fba09a72437d8b4d36; [Accessed on 15th March 2023]

Note 1: ▲ Yes, Cyborg Red and Blue

Note 2: ● Yes, Cyborg W series

4. Lighting Descriptions and Analysis on Selected Exhibitions

4.1 Artsonje Center – *Cyborg Red and Blue* (1998)

The key light of Cyborg Red and Cyborg Blue (Figure 1.1) is the brightest light source that illuminates the main subject. In this exhibition, the key light is the lamplight that strikes from the back of the sculptures. According to the directions of the shadows of the objects, we can assert that the key light is a backlight in this exhibition. The backlight, if acting as the only light source in the event, can generally create a rimming effect around the subject by casting "an outline of highlight around its edges". (Dunham et al., 2015) (Figure 2.1) However, there is also environmental light surrounding this work (Figure 1). As a result, the outlines of the pieces come to be gentle and inconspicuous, especially the right calf of Cyborg blue. Silicone is selected by the artist due to its skin-like texture and transparency properties. However, due to the heavy thickness of the material, minimal backlight passes through, with the majority reflecting on the white wall. The white color is calmer than red. (Shahidi et al., 2021) The color white light illuminates the whole installation space, and blue makes people feel calm and at ease. These two colors also counteract the negative effects of red, which is also associated with anger and anxiety except for warmth, to create a peaceful and calming space. Most importantly, under the soft white light, the sculpted armor-like corsets on those cyborgs seem to disappear. Rather than erotic, cyborgs appear in their purest form set against the mild lighting background.

Figure 1.1 Lee Bul, Cyborg Red and Cyborg Blue, 1997-1998, cast silicone, paint. pigment, steel pipe support and base, 160 x 70 x 110 cm (each)., the installation view of Artsonje Center, South Korea, 1998, https://www.lehmannmaupin.com/ch/guo-ji-zhan-lan/li-pei-from-me-belongs-to-you-only, [Accessed on 18th January 2025]

Figure 2.1 Richard Dunham, "Backlight" in Stage Lighting: Fundamentals and Applications (Focal Press, 2015), part one, para.21, O'Reilly https://www.oreilly.com/library/view/stage-lighting/9781317343936/, [Accessed on 18th January 2025]

Backlight is regularly used to emphasize the contours of the crafted edges, producing a "halo-like appearance" (Dunham et al., 2015) for the object, or to help separate a subject from its background. However, the exhibition is set to deftly eliminate these original features of this light angle so as to create a harmonious environment with the aid of additional light sources in the space. The striking features of color, texture, and corset details are all substantially softened under this specific lighting, and the cyborgs appear to be goddesses.

4.2 48th Venice Biennial- *Cyborg W Series* (1999)

A low sidelight is the key light and only light source for this installation and is lit on the cyborg (Figure 3.1) at a steeper upward angle. The light is pale and intense, irradiating the surfaces of the white cyborgs and dazzling the viewers. In addition, cyborgs are still crafted with missing heads and limbs, suspended from the ceiling only by wires. The cyborg sculptures, the wires, and those rusting iron frames nearby all come together to form clear shadows on the walls. Some parts of the armor corset are sharply defined around the divide between light and shade. Due to abundant light reflection, the space has a mixed hue of faint blue, gray green, and deep ginger. The overall color palette of the environment was so dim, coupled with the limbless and headless human-like sculptures, the entire setting evoking an unsettling atmosphere and recalling a dismemberment scene.

Figure 3.1 Lee Bul, Cyborg W1, Cyborg W3, Cyborg W4 (from left to right), 1998, cast silicone, polyurethane filling, paint pigment. 185 x 56 x 58 cm, 185 x 81 x 58 cm, and 188 x 60 x 50 cm., the installation view of the 48th Venice Biennial, Italy, 1999 https://aaa.org.hk/en/collections/search/library/lee-bul-from-me-belongs-to-you-only, [Accessed on 18th January 2025]

By utilizing an angled, low sidelight, the lighting setting in this exhibition produces a dramatic, ghostly quality for the sculptures. From the installation perspective, the light effects cause certain parts of the cyborg bodies to be illuminated by intense white light. The stark contrast between the bright and dark sides of the cyborgs creates an illusion that their bodies are fragmented, with only the illuminated white portions appearing visible. For instance, the sculpture, which is positioned furthest from the viewpoint, seems like a female body cut in the middle, with the other side of the body missing.

4.3 Le Consortium Museum- *Cyborg Red and Blue* (2002)

In contrast to the previous set on view at the Artsonje Center, the exhibit at Le Consortium (Figure 4.1) is in a dimly lit space. The key light is a harsh one that is exposed from the top of the space. This downlight helps to create excessive shadows, forming mechanically shaped shadows that create a non-human feeling in the shadows of these female-like figures. In addition to the downward light of the lamp, the backlight is a second, equally mesmerizing illumination that reflects off the walls and creates a dappled glow. In this installation, lamps with a leaky top and bottom are selected by the curator and the artist to formulate two symmetrical sets of lighting bands that resemble sonic icons. The cut edges of the sculptures stand out against the down-light and backlight. Apart from the darkness, red and blue lighting blending with each other in the dark environment can swiftly remind viewers of the red-light district in South Korea (Figure 5.1). The whole scene serves to construct an atmosphere of eroticism and repression.

Figure 4.1 Lee Bul, Cyborg Red and Blue,1997-1998, cast silicone, paint pigment, steel pipe support and base, 160 x 70 x 110 cm (each)., the installation view of Le Consortium, France, 2002, https://edspace.american.edu/cy-candy/lee-bul/transition-to-cyborgs/, [Accessed on 18th January 2025]

Figure 5.1 A photo of prostitutes in the street of South Korea , Zhihu, https://zhuanlan.zhihu.com/p/567491257, [Accessed on 18th January 2025]

Harshness or distortion is often characteristic of the downlight, (Dunham et al., 2015) and this artwork continues the traditional usages of this light setting. On top of that, the curator and the artist give extra texture to the space using colored lighting, which guides one into the imagined territory of a red-light district. The dappled light echoes with a sonic icon-like glow that provides the kind of electronic sensation seen mostly in sci-fi movies. The cyborgs in this installation suggest that sexual oppression of women is likely to persist in the future.

4.4 The Japan Foundation – *Cyborg W Series* (2003)

The cyborgs (Figure 6.1) are displayed in a bright environment, but the texture of the lighting appears stiff and formal. The curator and the artist use a keyhole lamp to illuminate a cyborg set

from near the ceiling, through which details of the cyborgs are clearly and completely revealed. Supplemental lights come from all directions to illuminate every cyborg in this exhibition. For instance, in the closest cyborg depicted in the photograph, one can distinctly observe the rounded weld spots sculpted onto its corselet. Additionally, even the cyborg sculpture furthest from the viewpoint, we can see its protruding decorative elements on the leg. Every detail is meticulously exposed under the lighting, which paradoxically imparts a sense of ordinariness to these otherwise intricate sculptures. Furthermore, the entire exhibition space is bathed in white light, creating an atmosphere where viewers may perceive themselves as standing in a relatively confined space, evoking a sense of oppression.

Figure 6.1 Lee Bul, Cyborgs W4 (left), Cyborgs W1 (right) in "Cyborgs and Monsters",1998, cyborgs are made of cast silicone, polyurethane filling, paint pigment.185 x 81 x 58 cm, 185 x 56 x 58 cm., the installation view of the Japan Foundation, Japan, 2003, https://www.koreana.or.kr/koreana/na/ntt/selectNttInfo.do?mi=1546&nttSn=52294&bbsId=1113&langTy=KOR, [Accessed on 18th January 2025]

4.5 MCA – *Cyborg W Series* (2004)

The exhibition of *Cyborg W series* (Figure 7.1) is set in an entirely dark environment. The curator and the artist shine a spotlight on the front face of the cyborg, and the light casts directly on the wall, forming a circle in which a massive cyborg shadow settle. A frost, a diffusive treatment applied to the lamp, alters the quality of the light, resulting in blurred edges. A whiteboard is also set up under the cyborg sculptures for supplementary lighting purposes. In this pitch-black environment, the cyborg stands out against the dazzling white lighting.

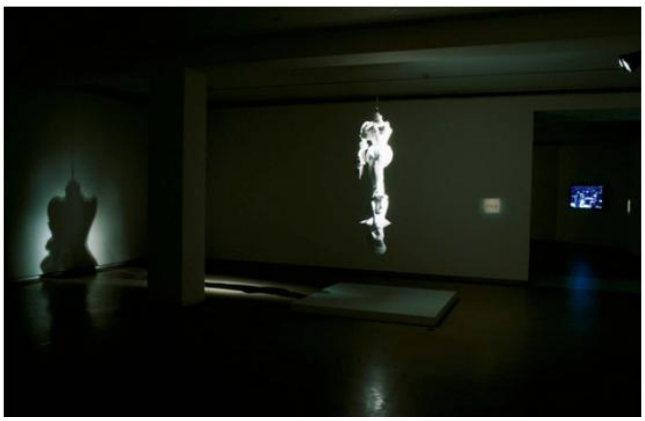

Figure 7.1 Lee Bul, Cyborg W4, 1998. cast silicone, polyurethane filling, paint pigment, 188 x 60 x 50 cm, mother-of-pearl inlay on panel, polyurethane coating., the installation view of MCA, Australia, 2004 https://www.mca.com.au/exhibitions/lee-bul/, [Accessed on 18th January 2025]

Since the cyborg is also painted white, the feminine features seem to be indistinguishable under the glaring light. Standing a few steps back from the sculpture, its outlines often have a sharp-edged look that conveys a sense of masculinity. A single light shines on the cyborg in the center of a spacious area, creating an illumination reminiscent of a stage lighting setup. Horror no longer applies under such circumstances, but a romantic representation.

4.6 *Mori Art Museum － Cyborg W Series (2012)*

Unlike previous ones, the lighting setup in this show is the most complex and unpredictable. Five cyborgs hang separately in a short distance from one to another, with every one or two cyborgs placed under a key lamp light in a white color setting. All spotlights illuminate the cyborg at a downward angle. From the installation view in the Figure 8.1, the first three cyborgs, from left to right, are moderately illuminated by key lights positioned on their front, back, or side faces. Two cyborgs hanging close to the left side of the photo are sharing a pivotal light, with the shadow of one falling over the other. The similar hanging position is also applied to the two cyborg sculptures that are shown on the far right-hand side in this installation view. In weak lighting, the details of cyborg outfits are often partly hidden and partly visible, along with the lines of sculptures that flicker and fade, thus evoking a dual sensation of sex and mystery. Even though the show remained set in a darkened environment, the cyborgs, lit by soft, faint lights, exuded a sense of femininity.

Figure 8.1 Lee Bul, Cyborg W2, Cyborg W3, Cyborg W4, Cyborg W8, Cyborg W2 (from left to right) in

"Lee Bul: From Me, Belongs To You," 1997-2006, cyborgs are made of cast silicone, polyurethane filling, paint pigment, 185 x 56 x 58 cm, 185 x 81 x 58 cm, 188 x 60 x 50 cm, 181 x 65 x 115 cm, and 185 x 56 x 58 cm., the installation view of Mori Art Museum, Japan. 2012, https://www.shift.jp.org/en/archives/2012/08/lee_bul_exhibition.html, [Accessed on 18th January 2025]

4.7 Martin Gropius Bau – *Cyborg W Series* (2018)

Instead of manipulating artificial light, this exhibition is the first to apply natural light to her cyborgs. From the installation view (Figure 9.1), four cyborgs are hanged in symmetrical fashion. If we were to draw a vertical and horizontal line between the two respective pairs of the cyborgs, a cross shape would be formed, hinting at Lee's religious inspiration. Natural light is the only source of light for the exhibition, so the lighting on the cyborgs changes correspondingly with the modification of the daylight.

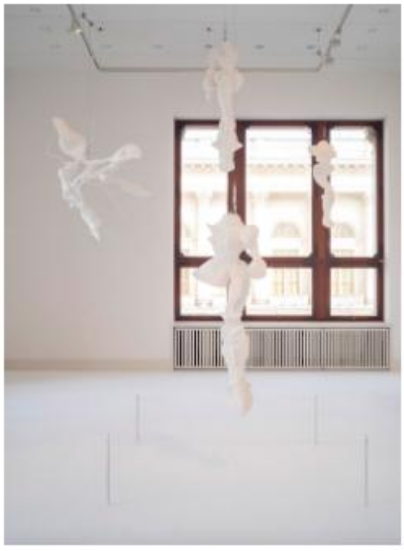

Figure 9.1 Lee Bul, Cyborg W4, Cyborg W3, Cyborg W2 (from left to right) in "Lee Bul: Crash," 1998, cast silicone, polyurethane filling, paint pigment,188 x 60 x 50 cm, 185 x 81 x 58 cm, and 185 x 56 x 58 cm., the installation view of Martin Gropius Bau, Germany, 2018, https://edspace.american.edu/cy-candy/lee-bul/transition-to-cyborgs/, [Accessed on 18th January 2025]

The entire space is painted white, the same as the cyborgs. Natural light is thus sufficiently absorbed and reflected by the interior objects to achieve a visually soothing brightness balance. Under these circumstances, the outlines of the cyborgs are less visible, as are the shadows. The sense of sanctity and purity that emanates from the installation has been successfully transmitted.

5. Conclusion

Based on the above description and analysis, this article concludes with key findings by splitting the exhibitions into bright or dark spaces. A summary table of light analysis is listed in

Table 3.1.

Table 3.1 A summary Table of Light Analysis

Exhibition place	Country	*Cyborg series*	Light type	Key light	Supplementary light	Light color of key light	Overall lighting texture
Bright Exhibition space							
Artsonje Center	South Korea	*Cyborg Red and Blue*	Spotlight	Backlight	Moderate amount of environmental light	White	Soft and cold
The Japan Foundation	apan	*Cyborg W Series*	Spotlight	A high sidelight in a downward angle	Large amount of environmental light	White	Stiff and cold
Martin Gropius Bau	Germany	*Cyborg W Series*	Natural light	Natural light	Natural light	Not applicable	Natural and soft
Dark Exhibition space							
48th Venice Biennial	Italy	*Cyborg W Series*	Lamplight	A low sidelight in an upward angle	Large amounts of reflected light	White	Harsh and cold
Le Consortium centre	France	*Cyborg Red and Blue*	Spotlight	Downlight	Backlight and few amount of reflected light	White	Strong and cold
MCA	Australia	*Cyborg W Series*	Spotlight	A direct sidelight	Few amounts of reflected light	White	Strong and cold
Mori Art Museum	Japan	*Cyborg W Series*	Spotlight	A high sidelight in a downward angle	No	White	Weak and soft

Source: Lehmann Maupin, various of sources.

For the exhibitions displayed in bright spaces, Lee's works can transmit the holy, pure, and natural sides of the cyborgs most of the time. Those cyborgs become beings of extraordinary power, not human but godlike. To achieve this effect, the exhibitions apply backlight and natural light to smooth out sculpted lines that usually indicate femininity, such as full breasts, slender waists, rounded hips, and sexy corsets. One notable exception is the exhibit at the Japan

Foundation. The cyborgs showcased in that display appear to mediocrity. The paper argues that even though the exhibit is set in a bright space, the undertones of depression expressed by the cyborg trace back to the spatial constraints. Typically, light and color have no significant effect on the perception of room size, and only anxious people described the space as smaller. (Shahidi et al., 2021).

In the dark exhibition spaces, except for the one in Venice, Lee's works are frequently applied with spotlights, which normally help focus on objects and narrow the area of illumination. For the Le Consortium exhibition, a spotlight is used as the key light to illuminate Lee's cyborgs from above. This downlighting generally creates a strong sense of dimension or modeling, which also tends to produce shadows that are not very naturalistic. (Dunham et al., 2015) As a result, the shadows look mechanized and artificial. In addition, other backlights are applied to illuminate her silicone-made cyborgs, while the refractions of those lights on the wall create a colored atmosphere that reminds viewers of a red-light district. Moreover, the sonic-like lighting offers an electronic sensation that is mostly seen in sci-fi films that reflect on the walls behind the cyborgs, indicating women as a secondary sex (Beauvoir et al., 2011) that primarily continue to be oppressed under a patriarchal society in the foreseeable future.

In addition to the lighting applications that had been discussed above in this paper, strong low-side lighting and spotlighting have been applied separately to constitute different expressions on pieces exhibited in Venice and Australia. With similar lighting intensity, but by changing the size of the lighting areas and the angle of the lamps, the curator and the artist give two entirely different temperaments to the cyborgs. The one in Venice tends to be more feminine, with ghostly shadows and twisted illuminated sides that terrify the audiences. However, the other, in Australia, reveals masculinity under a strong white spotlight with a stage lighting-like presentation that entertains viewers and is a satirical representation of cyborgs.

Finally, the cyborg sculptures at the Mori Art Museum are the most natural and vivid in the dark spaces. For those downward-angled spot lamps, the curator and the artist strategically change the size of the illuminated areas and the texture of the lighting one by one, forming lighting spots with a sense of natural beauty. The feminine parts of cyborgs are revealed under this specific lighting design, which implies a passionate sexual desire.

The cyborgs appear complex and contradictory under strategic lighting design because viewers' perceptions of the same cyborg are manipulated by the curator and the artist under different lighting scenarios. Exhibition atmospheres and temperaments of the cyborgs are modified, sublimated, or distorted via altered lighting parameters such as intensity, distribution, color, and movement. In bright spaces, these cyborgs appear godlike and are capable of evoking sensations of sanctity and purity. Conversely, in dark spaces, they appear in sexual or distorted ways, fulfilling the male gaze and amplifying a sense of dread. In summary, Lee's cyborgs are conflicted and ironic, projecting her ambivalence onto her creatures and simultaneously hinting at her concerns about postmodern females. Through a study of the complexity and ambivalence of Lee's cyborgs, this paper argues that intangible elements such as lighting effects should also be addressed on an equivalent level as other tangible elements in the analysis of an artist's works.

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