

# Design *Arts* Médias

**Glass in contemporary sculpture**

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### **Abstract**

This paper analyzes the use of glass, the process of glass - making and its prospect in contemporary art through examples of different artistic expressions and different artistic media. Glass and related techniques are traditionally associated with applied arts. Less are known contemporary art practices that mainly use glass in their expression. The focus of this paper is to question this material, its qualities, and its potential in contemporary art, especially in the domain of sculpture. Another question that arises is how characteristics of glass can be interpreted differently from a sculptural, painting or installation point of view. Subsequently, the paper examines the notion of contemporaneity and values in contemporary art.

### **Résumé**

Cet article analyse l'utilisation du verre, le processus de fabrication du verre et ses perspectives dans l'art contemporain à travers des exemples d'expressions artistiques diverses et de différents médiums artistiques. Le verre et les techniques associées sont traditionnellement associés aux arts appliqués. Moins connues sont les pratiques artistiques contemporaines qui utilisent principalement le verre dans leur expression. L'objectif de cet article est de questionner ce matériau, ses qualités et son potentiel dans l'art contemporain, en particulier dans le domaine de la sculpture. Une autre question qui se pose est celle de savoir comment les caractéristiques du verre peuvent être interprétées différemment d'un point de vue sculptural, pictural ou d'installation. En conséquence, l'article examine la notion de contemporanéité et les valeurs dans l'art contemporain.

## **Introduction**

How to express a three-dimensional work of art in glass presented in the field of contemporary art? The plastic qualities that resulted from sculpture opened up different possibilities for the use of glass material of more contextual nature in a sense. This article addresses the question of perspective of glass as a material used in contemporary art, sculpture in particular. To which extents glass material could contribute to the future development and understanding of sculpture as a three-dimensional medium?

The period that preceded modernism, between 1850-1904, is considered as the Glass Age (L'age du verre)<sup>1</sup>. The greatest glassmakers in France of Art Nouveau and Art Déco, Emile Gallé, René Lalique, Daum Brothers or Louis Comfort Tiffany in the USA possessed exceptional knowledge of glass processing techniques that were an integral part of their artistic creation. They were followed by masters of pâte-de-verre, François-Emile Décorchemont and Gabriel Argy-Rousseau. Scandinavian sculptors who worked for Orrefors in Sweden, Edward Hald and Simon Gate, should also be mentioned. Later, by combining new approaches and traditional glassmaking techniques, the twentieth century changed the way we experience glass.

Sculpture has changed through modern times, and, in an even broader sense, through contemporary art. Its representative and perceptual aspects vary and « sculpture might seem to lose all unity in a multitude of techniques; however, it remains an art, and an aesthetic concept<sup>2</sup>. ».

## **1. The aesthetics of glass in a contemporary context**

### **1.1 Contemporaneity and art**

One thing that was fundamental in both classical and modern art is that an object of art was made by the hand of the artist<sup>3</sup>. Glass is characterized by very demanding techniques required for the

processing of this material. This fact often creates a wrong impression in the eyes of the general public and culture in a way that glass and related techniques remain traditionally associated with applied art. At the same time, complex and expensive techniques have limited artists and made it difficult for them to get closer to this material more often. In this regard, glass art processing centers continue to play an important role in connecting artists and artisans, making this demanding material more accessible.

The transgression from classical to modern and then to contemporary art left traces on glass art. The contemporary paradigm problematizes the idea of beauty and the act of creation in the making of the art object by the artist. They lead to a change in the valuation of the art object as such :

*« Through its focus on testing limits, contemporary art responds to the expectation of sensations more than of spiritual elevation or of aesthetic emotion, as in the classical and modern paradigms<sup>4</sup>. ».*

The notion of contemporaneity has been analyzed along with the notion of contemporary art from philosophical, sociological and aesthetical point of view by different scholars. In modernity, the value of the work of art is no longer supported through the academic canon, but the work that expresses the artist's interior is valued. Later transition from modern to contemporary art is defined not only as chronological, but also considered a paradigm, « "contemporary" does not refer, in fact, to a chronological division (covering all that is currently produced), but to a generic or categorical division (covering what has certain characteristics, aesthetic and extra-aesthetic)<sup>5</sup>. ».

Art of today is under the influence of variety of interrelated processes of the environment (sociological, political, ethical and aesthetical fluctuations). The notion of contemporary art can be defined within a certain system and different authors offer their views; however, it is impossible to judge the totality of current creativity and its results from the present. Since art does not exist in an isolated environment because it is influenced by various aspects that are continuously interacting, it should be noted that « we must avoid a somewhat simplistic view of these interrelationships ; and the two nuances that we are going to bring to it also apply to all the senses of "contemporary" taken in reference to the one who speaks about it ("contemporary art", "contemporary criticism", etc.)<sup>6</sup>». In other words, these ongoing processes cannot be defined while they are still in progress. It takes time distance to clearly understand the meaning and define notions « when they are placed in a temporal form as a whole, in a global curve of evolution, and in relation to what followed them<sup>7</sup>. ».

Considering these facts as a real state of affairs, in the following paragraphs I will discuss the use of glass in sculpture domain and how glass material could possibly contribute future understanding of the medium by focusing on materials own characteristics, experiment and existing interpretations in sculpture domain.

## 1.2 Social aspects of glass art

Through different time periods, social, technical and aesthetic values promoted by humanity, we can trace different interpretations of glass. Continuous production of float glass<sup>8</sup> of impeccable quality and its efficient implementation has made flat glass accessible to everyone. Some artists decided to try it out because it was an industrial material that was cheap compared to traditional glass made by blowing, hand crafted glass, etc. Thus began the experiment with glass.

In parallel in Europe and the United States, artists convinced of the artistic potential of glass came forward. By attending conferences and symposiums « they carried an energy and an entrepreneurial capacity that were decisive for what would give birth to contemporary glass art<sup>9</sup>. ».

The material itself was not new, but its composition was somewhat new, it was not compatible with handmade glass. There were a lot of complications at the beginning, because it was new material which needed to be mastered. Numerous experiments were done, some were more and some less successful. Artistes of that time « explored new uses of old materials and techniques and arrived at new forms and textures as free of academic tradition as the canvases of the Action Painters and the multi-media Conceptualists<sup>10</sup>. ».

After the Second World War, there was a renewal of glass art. Glass centers in Venice and Murano were reestablished. Italian artists such as Paolo Venini, Dino Martens, Fulvio Bianconi worked to create modern forms using traditional techniques. In the USA in 1951 Corning Museum of Glass<sup>11</sup> was founded. The creation of the Studio Glass movement that occurred in the 1960s in the United States was a significant turning point for contemporary glass sculpture. From this point on, glass artists started working glass in their own studio and no longer in industrial glass factories. This resulted in notable changes in style, form and glassmaking techniques :

*« Before the 1960s, almost all glass objects were produced in an industrial context, on which training in the glassmaking profession also depended (except in Czechoslovakia)<sup>12</sup>. ».*

Harvey Littleton<sup>13</sup> founded American Studio Glass movement in 1962. During the 1970s and 1980s, the movement acquired an international character through university programs, art schools and summer programs. In Britain, at the Royal College of Art in London, artist Sam Herman was head of the Glass department from 1966-74. Dale Chihuly, who studied in Venice, founded the Pilchuck Glass School close to Seattle in the USA circa 1971. Modern Studio Creation is often referred to as « between sculpture and design<sup>14</sup>», it is worth mentioning the Finnish artists and designers Tapio Wirkkala and Timo Sarpaneva as a reference. In the context of sculpture, two sculptors from Czechoslovakia, an artistic couple Stanislav Libenský and Jaroslava Brychtová, significantly contributed to the independence of glass as an art form. Nowadays we follow various examples of complex and exceptional artistic practices that base their work on glass experiment (Bernard Dejonghe, Howard Ben Tre, Dale Chihuly, etc.).

The social aspect is an important aspect of glass art with an international character. Complex techniques that require long term training and quite expensive equipment imply specific conditions for experimenting glass. Since these are high budget processes, artists, glass-makers and other professionals organize through institutions to collaborate and participate social events :

*« Characteristic of modern glass now is an international style, the result of worldwide communication among artists and designers. By means of publications, conferences, workshops, and international exhibitions, the glass artists share information and are in turn inspired by each other's work. With global interchange the national image is obviously disappearing; however, replacing it is the artist drawing upon his or her heritage yet working in individualistic patterns<sup>15</sup>. ».*

In addition to the above-mentioned international centers for glass art, Centre international de recherche sur le verre et les arts plastiques - CIRVA in Marseille (International Center for Research on Glass and Plastic Arts) is worth mentioning. This art center was created in 1983 and the aim was to « include France in the great movement of renewal of the glass which had won the Anglo-Saxon world<sup>16</sup>. ». Since then, complex research has been carried out for numerous projects by prominent world artists. Nowadays CIRVA has a collection of about 600 works from more than 200 eminent artists.

One of many institutions in France that focuses on artistic glass production nowadays is L'école Nationale du Verre-Yzeure (The National Glass School in Yzeure). Located in almost geographical center of France, the school is a place of encounters for glass makers, with rich history of glass making, incredible technical conditions for glass processing and exceptional professionals in the field. The school places Yzeure in the group of French art cities. It was founded in 1965 and has a tradition of almost 60 years.

As a part of my doctoral research, I had the opportunity to experiment with glass at The National Glass School in Yzeure on the account of a contract between Jean Monnet University in Saint Etienne and The National Glass School which allows the students to visit and stay at glass school and do their research.

The school was created because the artisans and factories working with glass needed labor. There

was a glass factory in Souvigny, a town very close to Yzeure. They had an agreement with the school. This was so that young people, trained in general education, could go for a hot glass training in the glass factory. It made it possible to obtain a CAP (The certificate of professional aptitude). Since it was difficult for the students to go from one town to another, a glass workshop was built at the school. Nowadays it is an educational and cultural center that promotes glass art, design and related techniques through training, conferences and an artistic residency. During my stay I have learned the basics of cold glass cutting<sup>17</sup>, thermoforming<sup>18</sup>, glass blowing<sup>19</sup> and the history of glass making in France. Glass techniques are extremely challenging. It takes decades to perfect manipulation of hot or flat glass. I had the opportunity to collaborate with Jérôme Bloux, specialist in the field of flat glass and the professor at The National Glass School, from whom I've learned a lot about glass treatment and the history of glass making in this part of France.

Institutional cooperation of this kind allows artists to work and experiment with glass in an environment free from any constraints and expectations. Technical and technological conditions and skillful professionals are put on disposal for the artist to use, even though many of them never encountered this material before. Opportunities to work and research in such environment are of incalculable value. They promote artistic collaborations, exchange of ideas and allow improvisation and true material manipulation and experimental research where « the result would often be different from that hoped for... or even imaginable<sup>20</sup>. ». They truly testify that glass art is indeed determined by social collaborations :

« Glass, as I have said, is a social art and is made not in an aesthetic vacuum but in the context of the other arts and crafts and in the helter-skelter of social accommodations to national and international attitudes and pressures<sup>21</sup>. ».

Collaborations through institutions clearly present in one place « different ways of dealing with materials, the diversity of approaches and the multitude of unique actors involved<sup>22</sup>. ». They contribute by revealing the verity of attitudes and offer different perspectives from which art glass is regarded at. The institutional collaborations of artists and glassmakers mirror their importance by uniting these diverse methods and viewpoints in one place, helping to « overcome some conceptual divisions, or even to propose novel (or, at least renewed) getaways between different forms of creation<sup>23</sup>. » which proves that institutional and social cooperations are important axes in the world of art glass.

## 2. The glass experiment

### 2.1 Exploring three-dimensionality

Throughout my stay at The National Glass School, I tried to implement the knowledge and experience from my previous work with metal and plexiglass onto glass experiment. By using personal experience, I was trying to understand the glass praxis.

I approached glass sculpture by relating formal and phenomenological qualities of sculpture to visual and aesthetical values of glass: transformation resulting from fusion and transparency. I was researching different possibilities of the material and looking for what I can relate to my previous artistic practice. I've found myself working mainly with flat, thermoformed glass. For some pieces I used blown glass and glass made by lampworking. Central point of my work was researching various characteristics of this material and relating it to sculptural aesthetic aspects. Sculpture is a three-dimensional medium which is determined by time, space and reception of a viewer :

*« If sculpture is above all art of space, one cannot neglect the presence of a dimension of time. All sculpture is in time, in the sense that it lasts<sup>24</sup>. ».*

The following paragraphs question the potentials of glass, the way material co-relates to sculpture. At the same time, it is an analysis of characteristics of glass material, technical and social conditions required for glass processing on actual and mental level. In parallel, presented are works of several contemporary artists, different techniques they use and the way they relate their work to contemporaneity and glass. The notion of contemporaneity in philosophical-aesthetical

sense is being discussed and relational aspects of contemporaneity in present art world, notably related to sculpture and glass art. It is an analysis on how various sculptural qualities and the qualities of glass, when put in relation, could contribute future artistic research.

The development from modern to contemporary sculpture can be traced through examples of artists who created under the influence of futurism and cubism. Lucio Fontana was one of the post-war artists who built his complete artistic creation owing to experimentation. It can be said that Fontana anticipated the contemporary practice of maneuvering sculpture towards installation and environmental art. With his concept, Fontana questioned the boundaries between painting and sculpture. Even though he is best remembered for his tagli (cuts) — slashed canvases, « Fontana regarded himself first and for most as a sculptor, not a painter, a fact that he underlined by giving the title *Concetto Spaziale* (Spatial Concept) to almost every work he created after the late 1940s<sup>25</sup>. » Following the concept of space reconstruction, he used, among other things, small pieces of glass where the natural effects of light reflection and refraction affect the viewer's perception, thereby not only expanding the flat canvas but also reconstructing space. In addition to attempting to integrate Murano glass into his work, he also produced blown glass pieces that included slash motifs.

Glass is a material that implies transformation, same as metal. Both materials belong to the group of arts of fire, hence it is possible to get interesting and unpredictable qualities from experimenting with material transformation, while at the same time these processes imply taking risks. The choice of material as one of the basic building units of sculpture, it influences structural issues of the medium as well as its thematic implications.

I wanted to test what different tactile qualities may be acquired after thermoforming various types of glasses and how they may be related to my previous sculptural practice (such as a balance between the plane and the void, structure of the surface and line strength, the energy of the form; all the concepts of three-dimensional object), in relation to visual and physical qualities of the glass pieces. When I experimented with glass, I kept my focus on form, fragility and transparency, while relating them to the three-dimensionality of the medium :

*« Sculpture belongs to the very general class of plastic arts, which are aimed at the sense of sight: sculpture is made to be looked at. But visual sensations are very often added; in the perception of sculpture images of other senses, especially tactile images that suggest smooth, blunt or rough aspects, and more complex, kinesthetic images that suggest forms<sup>26</sup>. ».*

## 2.2 Transparency

Aesthetical values of glass are linked to the characteristics of the material that attracted artist over the long period of time. Particularly the possibility of the material to transmit light. The way these characteristics are looked upon and interpreted varies. Light is one of crucial elements in arts, and one of the essential qualities of glass is the ability to transmit light. It is not just a visual category. We can think about light in symbolical, visual or actual sense, or, light as information :

« It seems that the transparency that was possible to achieve lies in a certain phenomenological status, a form of perceptual contradiction that, in a certain way, gave it a unique character and distinguished it from other ways of manifesting physical realities<sup>27</sup>. ».

When analyzing « formal possibilities of light as a medium for the sculpture<sup>28</sup> » on the example of Moholy-Nagy's *Light Prop for a Ballet* and Francis Picabia's *Relâche*, in her book *Passages in Modern Sculpture*, Rosalind Krauss discusses the spatial and temporal aspects of sculpture related to light :

*« The question is not whether certain artists have wanted to seize the space of the stage or exploit dramatic time projected by real motion; the question is why they would have wanted to seize or use those things, and to what aesthetic ends?<sup>29</sup> ».*

This question, why and to what aesthetic ends, is the one that should be answered when analyzing assets of glass sculpture, notably its spatial and temporal characteristic, the physicality of the medium and transparency. Sculpture as a three-dimensional object is sensitive to light, however not only in pictorial sense, in terms of depth and color, but preferably « light as energy rather than static mass and therefore as a medium which is itself temporal<sup>30</sup>. ». According to Etienne Souriau an image « she only gives the appearance. From where sometimes a mistrust towards the image, the fear to see it confused with the real being, or a certain disdain for it like simulacrum, illusion and lie, or at least like vanity<sup>31</sup>. ». That is to say, an image does not have spatio-temporal value. It does not offer the real time – space experience for the viewer. In other words, looking at glass from the painting point of view, the focus changes. It is no longer physicality of actual space and shapes that hold the artists attention. Didier Tisseyre, an artist and a painter who works in glass, would consider plans and depth of two-dimensional space, which also derive from transparency :

*« It is a prerequisite for understanding my work, if you will, because precisely, for example, I did not try to do the roundabout, see something in three dimensions, etc. It just does not go. It didn't seem necessary. I didn't feel the need for that. As a man coming from painting, what interested me was the surface and the flat vision and the depth. One of the subjects of painting. It is rather the subjects of painting that I tried to tackle with the glass. Without actually painting, of course<sup>32</sup>. ».*

This does not mean that this approach cannot be applied in the medium of sculpture itself. It can be seen in the works of Larry Bell, his glass boxes and large-scale illusionistic sculptures. Another example of a different point of view to glass art can be seen in the work of an artist and architect James Carpenter, who often presents himself as an artist working with light<sup>33</sup>. In his early works he experimented with glass through photography and film. He did a lot of photographs and films on glass plates that dealt with transparency. When working with transparency and light he considers in his work the cinematic quality of light, how the light can reconstruct space by using film. When talking about the quality of glass, particularly the transparency of the material, he underlines that light is actually information, and it is through transparency that glass allows the information (light) to get through :

*« One point about light that we tend to ignore is that we are, in fact, transparent to light. There are portions of electro-magnetic spectrum that are passing through us at all times. So, when we think about light, we usually think about this visual portion of light. But in reality, light is much broader entity, and it is informing us, it's informing us in a way that, I believe, we don't even understand. It is informing us in a very unconscious way, as opposed to actual literal way that our eye constructs the information around us. I think we are absorbing light as we are receptacle of this information. The work we are trying to do is to bring about some recognition or acknowledgement about some other aspects of light that we tend to ignore<sup>34</sup>. ».*

From everything previously stated, we can see that glass material has the potential for opening new perspectives on how sculpture itself may be regarded at and related to light on different aesthetic and conceptual levels. Glass is a type of material that allows various possibilities of interpretations. This in particular is related to exploring time<sup>35</sup> and space<sup>36</sup> related characteristic of sculpture, maneuvering sculpture through the interpretation of sculptural physical qualities. Sculpture is an artistic medium that is very wide, and while the potentials of an image, on one hand, are largely exhausted, sculpture as a three-dimensional object, on the other hand, still has promising possibilities for research, which was predetermined by the definition of sculpture in the 20th century :

*« For sculpture, the dictionary gives a less restrictive definition. It is first a technique (or a form of productized activity which presupposes a priori a unique object), and then the product of this technique without mention of any imagery or commemorative function. In its 20th century meaning, the word sculpture (at least in French and English) designates more precisely the modern interpretation of the artistic form in three dimensions. Thus understood, sculpture is not statuary; it fulfills no specific function. It is an autonomous creation, whose iconography, techniques, materials and dimensions can therefore vary ad infinitum<sup>37</sup>. ».*

The examples presented in this chapter point out the importance of experiment and how the integral qualities of glass and those of sculpture, when put in relation produce different artistic practices. The actual transformation of the material and its characteristics during the creative process can be transmitted to the mental and decision-making level. These processes result in the merging of ideas, concepts and poetics.

## 3. Contemporaneity of artistic glass

### 3.1 Nobility of glass in contemporary discourse

Some contemporary artists find self-expression in integral aesthetic qualities of the glass material, others in their denial. Questions that contemporary art imposes are related to treatment of material, not only in technical but also in the ethical-aesthetic sense. As mentioned earlier, one of the main concepts of contemporary art is the problematization of the idea of beauty<sup>38</sup>. Nonetheless, there are contemporary artists who find inspiration in beauty.

Beauty is an integral property of glass. In the work of Jean-Michel Othoniel an imperative of beauty can be found, and a claim that « beauty is no longer an aesthetic datum but a condition of existence<sup>39</sup>. ». While referring to his first public commission, Le Kiosque des Noctambules, an installation which surrounds the Palais-Royal–Musée du Louvre metro station, artist speaks about the radicality of beauty :

*« Yes, the art world thinks that beauty is a lack of radicality, but I particularly took care that this work was beautiful, because it was my first public commission, the first time that I did something in 'public space. I said to myself that I had a huge responsibility: I had to speak to everyone, to people who are in the street, going to work, and who don't necessarily want to see works of art, so it was up to me to approach them. I made a work that I wanted to be accessible, which had multiple entry points. The challenge was to stay as close as possible to my creation while making the effort to reach out to people and make a radical gesture<sup>40</sup>. ».*

Jean-Michel Othoniel started using glass since 1993. What is recognizable about his work, among other things, is a tendency towards architecture. He often uses pearl and a brick as modul and an architectural building element. His artistic practice scales from gallery format sculptures to specific in situ installations and total and monumental art projects, such is Le Trésor caché de la cathédrale d'Angoulême.

The symbolic content of his sculptures is often ambivalent and sublime, the artistic form can be both minimalist and baroque at the same time. His focus is on transformational characteristics of glass: light, transparence, form, color, metamorphoses and transmutations of these elements, creating both optical and physical structures that suggest movement and gesture. It could be said that metamorphosis, i.e. transformation, is the structural element of his work and, in that sense, glass is the perfect choice of material :

*« The idea was above all to use glass for its metamorphosis properties. It is not a question of intervening as a sculptor who works a material in a virile relationship, to shape it or destroy it, but rather to seize it in a moment of fragility, when it is in the state of a pile of sand or during its liquefaction<sup>41</sup>. ».*

Given that different cultures experience glass in a different way, Othoniel traveled around the world to get to know different approaches and techniques of glass making. He performed his works with Indian glassmakers from Firozabad, Italian masters in Murano, in France he did collaborative projects with CIRVA. His glass pieces were produced in Mexico (Black Lotus), The Breast Necklace was blown on the island of Hawaii. He looked for inspiration in the expertise of Japanese glassmakers in Hokkaido. Rich experience and a research approach to the material resulted in a compound production and an impressive artistic expression. In Othoniel's work we can distinguish complex interpretations of sculpture leveled in-between physical, poetic, symbolic and representational properties of glass material.

## 3.2 Phenomenological aspects of glass aesthetics

If we look at work of Bernard Dejonghe, it will take us deeper in the process of natural creation of glass, to the origin of the material. The process of fusion<sup>42</sup> in particular, is integral, structural element of his work, at the basis of his aesthetics :

*« Glass brings us back to the history of the earth, to the awareness of time. It is composed of minerals whose proportions determine the points of fusion and the properties. Glass is amorphous, that is, it is not structured into crystals, due to rapid cooling after mixing and melting different minerals. There are rare examples in nature, volcanism, impactism<sup>43</sup>. ».*

The type of glass artist is using is massive optical glass<sup>44</sup>. His work is associating technicality with the forces of nature and man, by relating it to reflections on arts. The shape is subjected to minimal action of stripping the sculptural form *« by a minimum of voluntary or controlled intervention<sup>45</sup>. »* by contrasting the clarity of the glass, its purity, and the chiseling which disturbs it on some of its faces. It is the question of decision-making process during artistic creation :

*« These are long-term experiments, around the possibilities of shaping massive glasses, and the possible choices with the techniques that I can discuss in my workshop and the means that I give myself as I go.*

*The project comes after and results from the knowledge of the possibilities of material, in this case massive optical glasses, or high-fire sandstone ...*

*I never adapt the material to a previous conceptual project.*

*It's the glass, or the clay, or the fire, that tells me what I can do<sup>46</sup>. ».*

There is an idea of energy in motion in his glass pieces. Fusions, transformations made from the earth, water, fire and wind. Sculpture as a static object that transmits the movement by generating it. Dejonghe's interest in glass came from transparency and clarity, not color. This is sculptural quality par excellence, to focus on shape as a primal state of the three-dimensional medium, not color. In the work of Bernard Dejonghe this principle is lifted to a higher level. The object made from massive optical glass becomes visibly almost immaterial, where as in actual sense the object is physically very heavy :

*« This object had to be made of glass, whose purity could show the quality of the sites, their fragility, but also the transparency that must be attached to their management. This object is made of glass because it is a contemporary material par excellence, in its technologies and in the uses made of it<sup>47</sup>. ».*

Different thematic approach to contemporary glass art can be traced in the glass pieces of Maria Roosen. It can be said that the artist is wittily questioning the ethical boundaries of beauty of contemporary life, by relating contemporary every-day objects and blown glass objects with often sexual connotations in an extra-aesthetic sense. Another interesting aspect of her work is the combination of glass with other materials, the tactile qualities obtained by combining blown glass pieces with wood or fiber etc. Roosen interprets the transparency and color of the glass pictorially, getting sculpture and installation in relation to her watercolor paintings.

The above examples lead to the conclusion that the transformative nature of glass, through a research-experimental approach to testing different qualities of glass as a material, techniques and processing technologies, in parallel connecting them with the aesthetic characteristics of the medium of sculpture, allows us to approach glass sculpture as a medium that leaves a wide space for innovation and maneuvering.

### 3.3 Experiencing contemporaneity

At the seminar at the European Graduate School in 2007 Giorgio Agamben argued about what it means to be contemporary. « What is “contemporariness”? Agamben himself uses the word as he reads out his lecture in English. The Italian text prefers *contemporaneità* at these points: for which the standard translation is “contemporaneity” or “contemporaneousness,” the standard definition of which is “a contemporaneous condition or state.” Yet, clearly, Agamben is searching for a term that takes us beyond the mere simultaneity or plain coexistence implied in ordinary and simple usage of the term<sup>48</sup>. ». In his conclusion « Agamben insists, “Contemporariness is, then, a singular relationship with one’s time, which adheres to it and, at the same time, keeps a distance from it.” Total immersion in the present, absolute up-to-datedness, is blindness. Distance within inescapable implication is a necessary condition of truly contemporary being<sup>49</sup>. ».

I tend to link my artistic research and experience with glass to this definition. The qualities of glass promise different possibilities for artistic interpretations on the actual and conceptual level and open and innovative artistic research. These interpretations complement contemporary practices through technical, technological and aesthetical aspects free from political and other external implications.

#### Conclusion

On its development path through modernism and later on contemporary time the medium of sculpture passes through different stages of transformation. Formal functions of sculpture have been correlated to notions of time, space, mass, void, environment, body, etc. The perception of the medium and its understanding is continuously changing. Many experiments are done and we find ourselves with rich heritage on how sculpture may be perceived. Being a three-dimensional medium, sculpture provokes various ontological and phenomenological experiences and questions. The transformative nature of the glass material provokes the mind and senses of those who get in contact with it. It requires knowledge, skill and virtue; readiness for unpredictable outcomes. Glass, due to its nature and method of processing, implies the need for experimentation :

*« The more the artist is made uncertain of the result of his effort by the nature of the material he torments and the agents he uses to constrain it, the purer is his desire, the more evident his virtue<sup>50</sup>. ».*

It could be said that this famous quote by Paul Valéry testifies to the value of experimentation in art, the courage to venture into uncertainty, which means risk, but at the same time implies innovation.

Social aspects of glass making and institutional cooperation of artists and glass makers, that were mentioned previously, add additional tone to understanding glass art. Institutional and social collaborations play an important part in the artistic glass experiment and future development of

glass sculpture.

Glass with its transformative characteristic, that were previously discussed, offers possibilities for research related to phenomenological and receptive aspects of sculpture as a spatial and time related medium, its aesthetical and technological interpretations. These interpretations vary and call for more profound research than this text could cover. What can be concluded from this analysis is that there are open possibilities for prolific artistic explorations of glass as a material for sculpture that promise innovative results in the realm of sculpture. It also testifies to the importance of experiment in the field of visual arts.

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1. « The beginnings of a rapprochement between art and glass were around 1850. It would then suffice for about twenty years for national and international conditions - scientific, economic, political, intellectual and artistic conditions - offering glass the ability to become a major means of expression in the history of French art. . ». In Delaborde, Yves. *Le verre: art & design*. Paris, ACR Édition, 2011, p. 14.
  2. Souriau, Étienne, *Vocabulaire d'esthétique*, Paris, Presses Universitaires de France, 1990, p. 1352.
  3. Although there are often so-called workshops: the artist delegates a large part of his work to his apprentices, and therefore, it is sometimes difficult to attribute the work of art to the artist himself, the concept implies that the artist who signs the work is someone who has the knowledge and skill to create the work independently.
  4. Heinich, Nathalie, *Le paradigme de l'art contemporain*, Paris, éditions Gallimard, 2014, p. 43.
  5. Heinich, Nathalie, *Pour en finir avec la querelle de l'art contemporain*, Paris, L'Echoppe, 1999, p. 20.
  6. Souriau, op.cit., p. 498.
  7. Ibid., p. 499.
  8. « FLOAT GLASS: Current process for manufacturing very large flat glass invented in 1958 by an Englishman, Alastair Pilkington. The ribbon of molten glass is stretched continuously in an oxygen-free enclosure over a bath of liquid tin at 1000 C which serves as a perfectly flat support, the lighter glass floating on the tin bath. The upper face of the glass has the polish of an interface between two immiscible liquids. The faster the casting; the thinner the glass. A float furnace can thus produce glasses from 2 to 19 mm for commercial applications. The glass can be tinted at the time of initial mixing by adding gray, bronze green or blue coloring agents; it is also possible to apply metallic layers by spraying oxide at the exit of the furnace on the still hot glass (so-called pyrolytic layer). ». In van Lith, Jean-Paul, *Dictionnaire du verre - Tradition et patrimoine*, Paris, éditions Vial, 2016, p. 43.
  9. Tschumi, Bettina (dir.). *L'art du verre contemporain : reflets d'une collection et d'un catalogue*, Lausanne, Département de la Formation et de la Jeunesse (DFJ), 2007, [PDF], retrieved from: [https://www.bdrp.ch/download/materiel\\_pedagogique/node-field\\_\\_zip-707-0](https://www.bdrp.ch/download/materiel_pedagogique/node-field__zip-707-0), p. 8.
  10. Buechner, Thomas S., *New Glass: A worldwide Survey*, New York, Corning Museum of Glass, 1979, p. 24.
  11. The Corning Museum of Glass is a museum in Corning, New York in the United States, dedicated to the art, history, and science of glass. It was founded in 1951 by Corning Glass Works and currently has a collection of more than 50,000 glass objects, some over 3,500 years old.
  12. Miller, Judith, *Le verre du XX ème siècle*, Paris, Éditions Gründ, 2006, p. 190.
  13. Harvey Littleton was born in 1922. Raised in Corning, New York. As son of Dr. Jesse T. Littleton, an expert on the infrared properties of silicon and the first physicist to join the newly formed research team at Corning Glass Works, he had the opportunity to observe glassmaking processes and learn about the properties of glass at the Corning Glass Factory during his childhood. Littleton actively encouraged the promotion of glass teaching programs at universities, art schools and summer programs across the country during the late 1960s and early 1970s. From the 1970s to the 1980s, the Studio Glass movement became an international phenomenon.
  14. Delaborde, op.cit., p. 171.

15. Buechner, op.cit., p. 33.
16. Guichon, Françoise, *L'artiste, l'atelier, le verre*, Marseille, éditions Xavier Barral, 2007, p. 5.
17. « COLD CUTTING OF GLASS: Glass has mechanical characteristics which make it similar to a crystalline solid. It is worked by breaking or fracture by cutting it with a diamond or glass cutter soaked in petroleum, then by exerting pressure on the cut line to open it, or by causing a slight shock which initiates the fracture. Cutouts can be straight, circular, curved or sinusoidal. The glass being cut, the edges are polished and the edges are softened by hand or with a grinder. The cutting can be done by sandblasting, by pressurized water jet, or with a hot iron. ». In van Lith, op.cit., p. 34.
18. « THERMOFORMING: Operation of softening the heat of the glass which deforms freely under its own weight. It also consists of printing a pattern in relief on an industrial glass plate. ». In Ibid., p. 97.
19. « BLOWING: Operation of forming a piece by inflating the volume by blowing into the rod by mouth or compressed air. For the borosilicate glass pieces, the work is done with a blowtorch or a lamp, we blow directly into the tube. ». In Ibid., p. 93.
20. Guichon, op.cit., p. 5.
21. Buechner, op.cit., p. 23.
22. Bardin, Christophe, « Art glasses », in Musgraves, J. David & Hu, Juejun & Calvez, Laurent (eds.), *Springer handbook of glass*, New York, Springer, 2019, pp. 1757-1780.
23. Ibid.
24. Souriau, op.cit., p. 1357.
25. Gottschaller, Pia. *Lucio Fontana: The Artist's Material*. Los Angeles, Getty Conservation Institute, 2012, p. 1.
26. Souriau, op.cit., p. 1352.
27. Manzini, Ezio, & Petrillo, Antonio, « Les modes de la transparence ». *Traverses: Le verre* (n°. 46), 1989, pp. 8–20, p. 10.
28. Krauss, Rosalind, *Passages in Modern Sculpture*, New York, The Viking Press, 1977, p. 207.
29. Ibid., p. 204.
30. Ibid., p. 207.
31. Souriau, op.cit., p. 901.
32. Prokopijevic, Andreja, Personal communication with Didier Tisseyre, August 24, 2021 (unpublished).
33. « Light can be in itself the material of certain arts that can be grouped under the general name of arts of light. ». In Souriau, op.cit., p. 1015.
34. The VELUX Group, "Light in the public realm" by James Carpenter, June 22 2017, [Video], retrieved from: [https://www.youtube.com/watch?v=VCtvo\\_mYWO0&t=4s&ab\\_channel=TheVELUXGroup](https://www.youtube.com/watch?v=VCtvo_mYWO0&t=4s&ab_channel=TheVELUXGroup)
35. « Time is a dimension that can only be traversed in a single irreversible sense: successive elements are distinguished in it, determine intervals between them and are ordered in relation to each other, according to before and after. It has considerable aesthetic importance and many ways of intervening in art. ». In Souriau, op.cit., p. 1416.
36. « An area where distinct points exist simultaneously, and constituting the framework where material bodies and physical phenomena are located. Aesthetics considers only three-dimensional Euclidean space; one can conceive of others (non-Euclidean spaces, spaces of some other number of dimensions), but these concepts have no aesthetic use, for they are not that of perception (either real or imagined). ». In Ibid., p. 720.

37. Rowell, Margit (dir.), *Qu'est ce que la sculpture moderne ?*, Paris, Musée Nationale d'Art moderne, 1986, p. 11.
38. Beauty is a very complex notion to which other complex concepts are connected (admiration, astonishment, love, respect, harmony, ect.). Nevertheless, « while the study of beauty very often leads to aesthetic relativism, which is a kind of skepticism, it is much easier to find a sort of practical agreement on the attribution of the quality of beauty. ». In Souriau, op.cit., pp. 247-248. And, as he continues, « if it is a work of art, the divergences will be much stronger, due to a very specialized aesthetic sensitivity through education, but let us repeat that the judgments concerning a beautiful person, a beautiful horse, a beautiful car or a beautiful scenery will generally be concordant. ». In Ibid., p. 248.
39. Galerie Perrotin, *Dark Matters – Jean-Michel Othoniel*, New York, Galerie Perrotin, 2023, [PDF], retrieved from: [https://dailyartfair.com/events/download\\_press\\_release/7805](https://dailyartfair.com/events/download_press_release/7805)
40. Entretien avec Othoniel, Jean-Michel, « Le réenchantement du monde », *La Cause du Désir*, (n°. 83), 2013, pp.115-126, retrieved from: <https://shs.cairn.info/revue-la-cause-du-desir-2013-1-page-115?lang=fr>
41. Ibid.
42. « FUSION: When charging is finished, melting begins, passing from the solid state to the liquid state. Elements with a low melting point melt first, gradually dragging other elements with them. Around 1000/1100°C oxygen and other gases are released. The melting time depends on the volume and weight of the materials loaded. Melting is followed by refining. The refining is finished, the glass is perfectly mixed and homogeneous, before a maximum of 1500°C.  
Remember that the eutectic point is the level where two mixed bodies melt at a lower temperature than that of the body having itself the lowest melting point. The eutectic is the result of a good conjunction of the different materials used in given proportions. ». In van Lith, op.cit., p. 47.
43. Prokopijevic, Andreja, Personal communication with Bernard Dejonghe, August 22, 2021 (unpublished).
44. « OPTICAL GLASS: Quality of glass used in optics due to its perfect homogeneity and its excellent refractive index which is constant throughout the mass. It directs the light along a well-defined path.  
A lens is therefore characterized by the curve which represents the index of reflection as a function of the wavelength of the light used.  
There are two categories: "flints" with lead oxide, high refractive index and "crowns" based on alkali and lime or based on silica, boric acid and baryta.  
Modern optical lenses are ultra-specialized. They transmit part of the ultraviolet and part of the infrared. For specific needs, some glasses are transparent up to higher wavelengths. ». In van Lith, op.cit., p. 116.
45. Prokopijevic, op.cit.
46. Ibid.
47. Bernard Dejonghe in White, Kenneth, & Nabucco, Hector, *Écouter le Monde: Sculptures de Bernard Dejonghe*. Saint-Léger-sous-Beuvray, Musée de Bibracte, 2010, p. 4.
48. Smith, Terry, *Agamben and Nancy on Contemporaneity and Art*, March 2012, [PDF], retrieved from: <https://www.haa.pitt.edu/sites/default/files/Smith-AgambenandNancyOnContemporaneityAndArt.pdf>, p. 2.
49. Ibid.
50. Valéry, Paul, *Pièces sur l'Art*, Paris, Gallimard, 1934, p. 7.