

ART OF MEDICINE

What Does Multiple Production of Artworks Teach Us About Authenticity and Germline Editing?

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Abstract

This article considers ethical questions about artwork reproduction and how they can be applied to germline editing. Walter Benjamin's 1935 essay, "The Work of Art in the Age of Mechanical Reproduction" is a good starting point, as it discusses how the concept of *authenticity* is ethically and aesthetically relevant when considering works of art intended to be created as multiples or in editions of identical works: photographs and cast sculpture. When producing multiples of a work of art, authenticity tends to be perceived in proximity to an artist's original intention. In germline editing, this concept can help generate insights to guide future research.

Reproduction and Authenticity

In 1935, philosopher and cultural critic Walter Benjamin published his seminal essay, "The Work of Art in the Age of Mechanical Reproduction."¹ Grappling with new technologies—and especially with the proliferation of photography—Benjamin defined what set original works of art apart from copies or reproductions, proposing that original artworks possess an *aura*, which "wITHERS in the age of mechanical reproduction."¹ This aura, he posited, is linked to the artwork's original context or purpose, from which a reproduction is necessarily removed.

In the years since this still-influential essay was published, printing and digital technologies that allow for the limitless production of seemingly identical copies of artworks have emerged. At the same time, some works of photography and cast sculpture are designed from the start to be produced as multiples or in *editions* of identical works. These technological progressions may prompt us to wonder, *Can Benjamin's conception of the aura extend to such works? Which ethical questions should we consider when faced with the possibility of creating an endless stream of duplicates?* Exploring these quandaries in the context of artistic production can perhaps help us think ethically about similar questions related to cellular reproduction and germline editing.

Authenticity and Proximity

Photography. Benjamin asserted, "From a photographic negative, for example, one can make any number of prints; to ask for the 'authentic' print makes no sense."¹ In hindsight, Benjamin underestimated the artistry of photographic printing and failed to anticipate the value

scholars of photography would place on the date of a print and, by proxy, its proximity to an artist's original intention. Printing a photograph from a negative involves controlling variables like exposure, and, in the process, mutations can occur that move the final product further away from the artist's original vision. According to Baldwin and Jürgens in *Looking at Photographs: A Guide to Technical Terms*, "a photographic *print* made close to the date of its negative, by or under the direct supervision of the photographer, is thought to most clearly capture the photographer's original inspiration."² Although vintage and newer prints might appear similar to the untrained eye, this distinction is important for curatorial and connoisseurial purposes.

Still other photographs were made famous precisely because of their reproduction and the popular press that distributed them widely. For example, the Art Institute of Chicago recently featured Margaret Bourke-White's [Fort Peck Dam, Montana](#) in the exhibition, "Iconic: Photographs from the Robin and Sandy Stuart Collection."³ The photograph of an imposing public works project entered 380 000 American homes on the cover of *Life* magazine in November 1936.⁴ Mass production altered the appearance of the image due to the newsprint substrate and the commercial printing process, which is qualitatively different from the luscious tones of the gelatin silver print in the museum's collection. Although there are technical and aesthetic distinctions between a fine art print and a mass-produced magazine cover, the latter allowed the image to achieve ubiquity. In this case, ubiquity was an ethical value that superseded the imperative to hew closely to the artist's original medium and format.

Sculpture. Cast sculpture, a medium often intended to be produced in multiples like photographs, can present similar questions about authorship and authenticity. Auguste Rodin, the 19th-century French sculptor, left the molds for his celebrated body of work, including such well-known sculptures as [The Thinker](#) and [The Walking Man](#), to the French government after his death.⁵ French regulations have since capped the number of authorized sculptures made from each mold at 12.⁵ But what about sculptures made beyond this somewhat arbitrary limitation? In 2001, the Royal Ontario Museum in Toronto caused a stir when it exhibited a group of Rodin plasters and bronzes cast from Rodin's molds in 1999 and 2000. The curator of sculpture at the Rodin Museum in Paris, Antoinette Romain, called the exhibition "a scandal, a forgery, a delusion."⁶

The argument from photography connoisseurship about the distance of a work of art from the intention of the creator being a measure of its authenticity can be drawn upon here: *Should casts made during Rodin's lifetime be regarded as more authentic than those made later?* If additional molds are produced from existing sculptures and casts made from those molds, small mutations and flaws can appear in the mold, resulting in sculptures at a remove from the appearance of the original. But what about casts made from the original molds? On one hand, as art critic Blake Gopnik argued in 2001, "So long as there's good reason to believe that a sculpture shows just what Rodin had in mind for a piece ... then the issues of authenticity that the Musée Rodin is making so much noise about are artistically irrelevant."⁷

On the other hand, to take Benjamin's formulation, it does seem aesthetically and ethically relevant that these reproductions are so far removed from the context of Rodin's workshop: they lack the essential aura of original works of art.

The idea of authenticity is frequently invoked in order to protect the vision and intention of an artist. But it's worth questioning whose interests it promotes when arbitrary distinctions are drawn between identical works. In these cases, perhaps the concept of authenticity is being used to create a false sense of scarcity that impedes wider access to works of art. Such discussions of authenticity and multiples in art can perhaps shed light on parallel, if more freighted, debates about the ethics of human germline editing.

Auras and What Makes Us Human

Like printing technologies in the first half of the 20th century, genome editing capabilities have developed at a rapid clip in recent years. Using technologies like CRISPR/Cas9, it is now possible to precisely target problematic DNA segments and to cut them out or replace them in order to repair a mutation or eliminate disease.⁸ *Germline editing* refers to these technologies' uses in egg or sperm cells or in embryos. Changes made to the genome of reproductive cells or embryos, including unintended secondary consequences or off-target effects, are passed down to future generations.^{9,10} The November 2018 announcement of the birth of gene-edited twin babies in China generated further controversy within the scientific community about the ethics of germline editing.¹¹ In the wake of this event, some scientists have called for a global moratorium on human germline editing.¹²

Ethical discomfort with germline editing could have its roots in a fear that modifying characteristics of future offspring could quickly progress from "correcting" mutations to creating **genetic enhancements** perceived by some as desirable.¹² Risks of unintended consequences also loom large: in attempting to make a positive change, scientists could incidentally cause off-target effects that reverberate for generations to come.¹² (In an art context, a parallel situation would occur if a photographic negative or a sculpture mold were altered; imperfections would carry on through all subsequent editions.) A larger ethical concern about germline editing is whether humans should be meddling in such natural processes as the makeup of an individual's DNA in the first place. What about authentic human experience—about human aura (as Benjamin might say)—is interrupted or undermined when humans have the hubris to design, customize, originate, and replicate the genome of their descendants?

Intention, Revisited

When first confronted with the technologies that made it possible to create visually similar reproductions of artworks, Benjamin critically underestimated the artistry of processes like photographic printing and cast sculpture. Subtleties of germline editing, too, might not be immediately obvious and could manifest generations after an original intervention. As germline research continues to progress, we should consider which criteria we use to assess

authenticity and what these criteria suggest about the source of our unease with new technologies and the proximity of their effects to our best intentions.

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Editor's Note

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