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On imitation and Style (Transfer). Discussions on the Revivalism Permeating AI Technologies

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The surge in the proliferation of AI-generated images within the past three years has significantly disrupted the established norms of architectural production. Whether manifested in text-to-image, image-to-image, or text-to-video systems, the pervasive influence of generative AI has introduced novel considerations into ongoing discussions within global architectural communities. These discussions scrutinize the rightful application or potential misuse of generative AI in academic research and professional contexts, prompting a reevaluation of its legitimacy. Despite the ongoing debate, there is a persistent and growing interest in these artificial intelligence tools that should focus not only on the legitimacy of their use but also on the appropriate ability to evaluate this production and establish some rules so that they can be analyzed and discussed. As an individual actively engaged in teaching architectural design, the enormous volume of images produced by students using artificial intelligence stimulates deep reflections. Indeed, these reflections extend beyond the simple methodologies of their use to a fundamental reexamination of the imperative to establish relevant criteria for their evaluation. This transformative influence of artificial intelligence in architectural design echoes a broader discourse in the academic community (Datta et al., 2018; Gkoumas et al., 2020; del Campo, Manninger, S., Carlson, A., 2020). The implications of such technological interventions require conscientious assessment of their ethical, pedagogical, and professional ramifications (O'Neil, 2016). In particular, the increasing use of artificial intelligence tools underscores the im-

perative for educators and practitioners to engage critically with these advances, ensuring their responsible incorporation into the discipline of architectural design.¹ In a few words: what is the aesthetic and aesthetical category than can be found behind this mass production that we are encountering today? As we know, the word 'aesthetic' – deriving from the Greek "aisthetikos", meaning "sense of perception" - was introduced in the 18th century from the German philosopher Baumgarten and became a proper branch of philosophy. Next, we can refer to Birkhoff's investigation in his functional formulation centered on two essential parameters: (a) the viewer's perception, denoted as C in his function, and (b) the object's intrinsic characteristics, represented as O. The interaction between these two parameters results in the derivation of an aesthetic measure, denoted as M. This measure serves as an evaluative metric that confers recognition on the viewer's perception and understanding of the object. Birkhoff's formulation emphasizes the importance of both subjective perception and the object's intrinsic qualities in shaping aesthetic experience, culminating in a comprehensive and nuanced assessment of aesthetic value. In sum, the classical philosopher found that "beauty" is related to the object, whether considered as "an object" or a series of several connected parts communicating a sense of harmony and proportion. Refer-

¹The motivation for this article comes from an initial reflection started with a colleague, prof. Skender Luarasi, on the necessity to develop some conceptual framework for the evaluation of AI-generated architecture.

ring to the architectural field, Vitruvius identifies six principles that are at the base of the discipline: order, arrangement, symmetry, eurythmy, propriety and economy, to then compact these 6 into 3: firmitas, venustas and, utilitas. Later on, in the golden age of the Renaissance, Leon Battista Alberti shifted the Vitruvian category to something that was more in line with the idea of the perfect city and the new insights that the new architecture of the city should have represented and incarnated. The categories identified by the Alberti were: number of parts, placement of parts, and concinnitas (Proportional relationship), extrapolating this last one from Cicero's concept of beauty. In recent years, before the advent of AI – or more precisely – before their mass diffusion in architectural production - Ghom and George's findings led them to assert that aesthetics in architecture has evolved beyond mere visual appeal. Instead, they identified a multifaceted paradigm encompassing nine distinct parameters. These parameters include spatial organization, functional efficiency, social and psychological dimensions, environmental considerations, sustainability, technology integration, economic aspects, legal frameworks and rating systems, as well as durability and maintainability. According to their conclusion, the aesthetic evaluation of architecture now involves a comprehensive assessment across these diverse dimensions, highlighting a broader and more nuanced understanding of architectural aesthetics that extends beyond the traditional visual criteria. In the current landscape where the production of architectural knowledge has transitioned to utilize more advanced and intelligent tools, the challenge lies in establishing pertinent categories for evaluating these works. Moreover, contemplating aesthetics specific to 'architectural intelligence' becomes imperative. According to Mario Carpo (2023), the idea of reaching a state of 'post-human developments' facilitated by these tools remains distant. Instead, Carpo suggests that these tools are experiencing a revival of dormant visual strategies that have been present in architectural production, emphasizing a continuation of human engagement in the creative process facilitated by technological advancements. Visual similarities are at the core of this process. Carpo makes the example of the generation of a dog from an AI tool: what do AIs do? Firstly, they search for similarities among the billions of images they have in their database until they find what the different pictures have in common and, indeed, they search for an archetype of a dog. After that, they start generating to decompose the image of the archetypal one until something new comes out, something that, anyhow, should already have a trace inside the database they are trained to follow. The AI is then 'imitating' continuously the archetypal one that is always present in every generation. Even though the aesthetics of the dog might change, the initial reference is always there expressing to the 'discriminator' part whether the generation is correct or not. Even when it comes to mixing more databases, there is always an exchange of information where the different lists of references activate a give-and-take process between them. There is always the dynamic of extracting something from one to infuse them into the others to generate something new, in a few words, we are facing something that is called style transfer: a process that utilizes deep neural networks to extract and combine the content of one image with the stylistic features of another, resulting in a new image that merges the content of one source with the aesthetic elements of another. Imitation, style, repudiation, etc. are keywords that dominated the art and architectural debate before the advent

of Modernism: The principle "form follows function" is a key tenet of modernist design, emphasizing that the design of an object or structure should be primarily dictated by its intended purpose or function. From a modernist perspective, imitating traditional forms without a corresponding adherence to their original functions can be considered a mistake or, in more critical terms, a deviation from the ethos of modernism. Since we have inherited from Modernism a so-called "forward-looking and purpose-driven approach to design," it seems somewhat hilarious that the most intelligent tools we have so far are simply feeding the architectural debate with theories and aesthetic theories that have been completely eradicated over the past two centuries. Imitation seemed to be something relegated to classical theories, to a world that no longer existed and could be considered 'the old man' with respect to the emancipation promoted by modernist architects, and for us 'imitating' another style was understood as a shameful approach to architectural design that should incorporate other 'substances' (quoting Edoardo Persico) instead of fishing in the past. Perhaps, in this magmatic succession of things we are currently facing, and considering that artificial intelligence seems to be already included in 'old' techniques, we need to revive some critical awareness of what imitation means, how it works, and how we can work with it. Certainly, in the dynamic and rapidly changing landscape in which we currently move, where artificial intelligence (AI) is becoming increasingly integrated into established practices, it becomes imperative to cultivate a heightened critical awareness of the concept of imitation. In essence, cultivating a renewed and critical understanding of imitation in the context of artificial intelligence is essential to address the complexities of contemporary technological advances and ensure that these tools contribute to progress, innovation and ethical considerations rather than perpetuating outdated paradigms.

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