Dynamics of aesthetic appreciation

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ABSTRACT

Aesthetic appreciation is a complex cognitive processing with inherent aspects of cold as well as hot cognition. Research from the last decades of empirical has shown that evaluations of aesthetic appreciation are highly reliable. Most frequently, facial attractiveness was used as the corner case for investigating aesthetic appreciation. Evaluating facial attractiveness shows indeed high internal consistencies and impressively high inter-rater reliabilities, even across cultures. Although this indicates general and stable mechanisms underlying aesthetic appreciation, it is also obvious that our taste for specific objects changes dynamically. Aesthetic appreciation on artificial object categories, such as fashion, design or art is inherently very dynamic. Gaining insights into the cognitive mechanisms that trigger and enable corresponding changes of aesthetic appreciation is of particular interest for research as this will provide possibilities to modeling aesthetic appreciation for longer durations and from a dynamic perspective. The present paper refers to a recent two-step model ("the dynamical two-step-model of aesthetic appreciation"), dynamically adapting itself, which accounts for typical dynamics of aesthetic appreciation found in different research areas such as art history, philosophy and psychology. The first step assumes singular creative sources creating and establishing innovative material towards which, in a second step, people adapt by integrating it into their visual habits. This inherently leads to dynamic changes of the beholders' aesthetic appreciation.

Keywords: aesthetics; appreciation; liking; dynamics; adaptation; preference; taste; consistency; rating; model

1. INTRODUCTION

Research on empirical aesthetics demonstrates highly reliable and consistent assessments of aesthetic judgments in the domain of vision. Prominent work in this field stems from the domain of the aesthetics of human faces [for a meta-analysis, see 1]. We will therefore first inspect the findings and resulting theories in this particular area of aesthetic research to subsequently extend our view to a more general approach of universal psychological principles that are responsible for creating aesthetic preferences. This will enable us to explain a recent two-step-model [2] of the so-called "dynamics of aesthetic appreciation" [3].

1.1   Aesthetic appreciation

When we study the assessment universality of facial attractiveness we mostly find very high internal consistencies [e.g., Cronbach's $\alpha > .87$, 4] as well as high inter-rater reliabilities of attractiveness ratings [see for a meta-analysis, 1, e.g., $r > .88$, 4]. This is the case even for persons with different face recognition abilities [for the case of prosopagnosia=face blindness, see 4] or for persons from different cultures [5] or morphological groups [6].

Langlois and colleagues [1] discuss alternative explanations for high amounts of shared taste:
1) social expectancy theories proposing social stereotypes created by cultural similarities in standards of attractiveness;
2) fitness-related evolutionary theories assuming that morphological properties are direct indicators of fitness and the probability of reproductive success;
3) theories emphasizing the possibility of assessing the "quality" of genes by mere phenotypical properties (often termed "good genes theory");
d) theories pointing stressing attractiveness as an important visual signal in the context of mate selection.

For a general theory of the dynamics of aesthetic appreciation we need a mechanism which is relatively independent of a hard-wired or universal biological program that relies on a canon of fixed properties. In this respect "social expectancy theories" (Langlois et al 2000) are quite useful as they can explain the adaptive capability towards cultural and social contexts due to the essential assumptions (a) that cultural norms and experience shape the perception of aesthetic objects and (b) that social stereotypes create their own reality. This adaptive capability, however, conversely lowers the possibility of gaining trans-age and trans-cultural congruency in aesthetic judgments, which can hardly be reconciled with results of developmental studies [7, 8] or cross-cultural studies [6, 9, 10] showing high congruency of aesthetic appreciation.

Although at first glance assumed to be incompatible with these results, most strikingly with the fact that even babies show a strong and similar preference for attractive faces [11], a more elaborate view on these results reveals strong weaknesses of many studies conducted so far on this topic. For instance, the seemingly universal appreciation of babies has never been investigated in a deeper way. First, we can refer only very vaguely to the concept of babies' processing of attractiveness, for example by simple habituation-dishabituation paradigms or via inspection times. Second, even if we would accept such an operationalization of attractiveness, we have an obviously incommensurable scale quality compared with the typically used ratings scales employed with adults. To sum up, although it might be undeniable that we share taste with others to certain degrees, we do neither know the source of the commonness nor the quality of the processes which process attractiveness.

1.2   Dynamics of aesthetic appreciation

To fulfill the demands of a process which is capable of letting people adapt to specific context variables and which can explain the more or less commonness of appreciation in different people the proposed cognitive mechanism has to be quite flexible and should not be based on hard-wired processes. This requirement is even more important when aesthetic

appreciation is analyzed from longer time perspectives or even in historical contexts where obviously aesthetic appreciation changes with a highly dynamical quality.

To get an insight into such dynamics we should start with the analysis of proper empirical or even experimental data. Such data, however, is astonishingly sparse. Pioneering psychological research contributing to this topic was conducted by Martindale [12] gathering strong evidence for cyclic changes of artistic style in a variety of fields, such as music, visual arts or poetics. Recent research by Cutting et al. [e.g., 13] shows systematic changes of visual activity in Hollywood films within the last 70 years. Carbon [14] replicated the general cyclic character of the evolution of aesthetic dimensions, assumed by Martindale, for the area of consumer product design and added a plausible explanation for this cyclic character. When people were confronted with highly innovative designs of so-called *concept cars* which are known to contain at least parts of the design features of the future, they adapted their aesthetic appreciation towards the style of these designs while their liking for previously preferred cars introduced over the last 15 years decreased to a significant degree. This study demonstrated the power of adaptation towards frequently or, particularly, recently inspected exemplars and the associated style which is quite compatible with similar effects of face adaptation research [15]. This so-called "face adaptation effect" or often also called "figural (face) aftereffect" proved to be very powerful in explaining the shift of prototypes [16-18], veridicality assessments [19, 20] and, most importantly, preferences [14, 15, 21, 22]. Only by assuming such a highly flexible mechanism we can explain why we can adapt to an ever-changing world, which enables us to react and act adequately towards these continuous challenging perceptual demands.

1.2   Synchronizing aesthetic appreciation

What we need to explain phenomena of dynamic changes of aesthetic appreciation is a flexible cognitive mechanism which is relatively independent from fixed norms or hard-wired principles. If we analyze the dynamics of aesthetic appreciation over the years, across different object categories and for different aesthetic domains, it becomes quite obvious that we can identify "streams", "movements" or "periods". For instance, art history is mainly concerned with studying objects of art in a historical context by explicitly identifying the developments, the emergence and the change of stylistic properties. Typically, art history can explain how such changes emerge as a result of political, religious or geographical, sometimes even of weather-related factors. The adaptation mechanism identified by previous research (e.g., Carbon 2010) could be a promising candidate for explaining mass phenomena of changes of aesthetic appreciation towards new design or art features in a simple but psychologically relevant way. People get effectively synchronized in their behavior and preferences via this mediating adaptation mechanism. Documented phenomena of "desynchronization" of preferences can be concordantly explained with this approach by insufficient or non-existing exchange of information about the objects of desire, for instance fashion items.

Adaptation also seems to be an easy and elegant way to dissolve some inconsistencies in the literature concerning the degree of shared taste. For instance, Vessel and Rubin [23] have found high amounts of shared taste only for real-world images but not for abstract ones. The more abstract an image is, the lower is the chance to create associations to objects that we can explicitly refer to. This lowers the possibility of creating an image of—a classical cognitive finding dating back to Paivio [24]. This means that such images are also susceptible to being evaluated on a rather idiosyncratic basis without a great chance of being a source of adaptation in a general way. Real-world images, in contrast, are a perfect starting point for such adaptation effects; consequently they are also potential objects of triggering shared taste [2].

Beside the mechanism of adaptation being a plausible source of synchronization of aesthetic appreciation, we essentially need a further ingredient for explaining the sources of the changes of artistic style (Augustin et al 2008) or the "Formensprache" (Carbon 2010). We need a clue for the cognitive principle which triggers innovation itself. Artists and designers belonging to the creative sector evidently have to innovate, or else they will only copy previous work and just prefer (and thus create) what they have already generated due to mere exposure or other familiarity phenomena [25, 26]. Martindale [27] assumes dissociation between beholders and creatives with typical beholders being inherently

conservative [compare with 28] and artists/designers being highly innovative and flexible [see 29]. What are probable candidates for the inner power of creating and innovating things in creative people? Boredom or "Formermüdung" [see 2] might tell a part of the story, but more interesting in this context of creativity is that creative people always compete with other creatives who continuously innovate and create. As soon as a new, innovative and creative solution is found an applied to any kind of object, e.g., new pieces of art, new works of design or just new consumer products, the beholders will fast adapt towards the new exemplars which often leads to increased familiarity, acceptance and, lastly, also preference for the new items. As potentially all beholders adapt quite similar, people get synchronized for their aesthetic appreciation as long as they are exposed to similar items.

DISCUSSION

To sum it up, having adaptation as a basic cognitive mechanism we are equipped to fulfill many demands of an ever-changing world. By mere exposure to [30] and, even stronger, by active elaboration of [31] highly innovative material such as fashion, design and art objects, we automatically integrate the perceived exemplars into our visual habits. As the compatibility with these visual habits, mostly operationalized by prototypicality [32], is a key factor in explaining aesthetic appreciation, our preferences for such exemplars change dynamically. When different people perceive the same objects iteratively, for instance, because they belong to the cultural canon or refer to frequently promoted products of famous brands, shared preferences for these items will emerge.
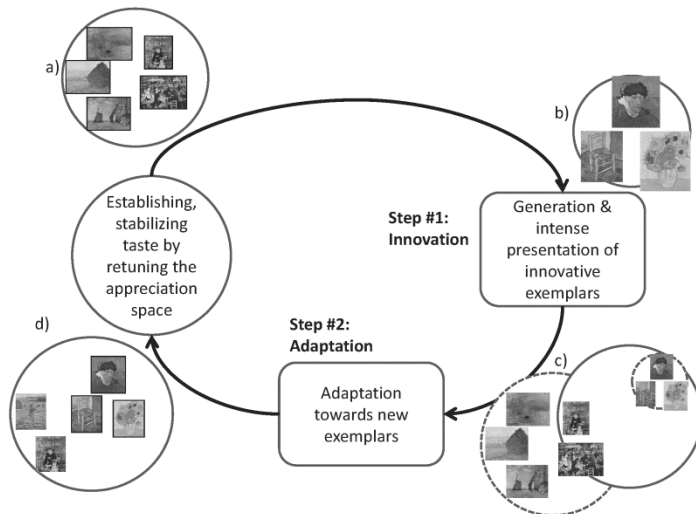

Figure 1: Two-step model of the dynamics of aesthetic appreciation [2], illustrated with appreciation changing from impressionist to post-impressionist paintings. Taste is (a) established and stabilized until beholders are (b) intensively confronted to innovative exemplars and elaborate these exemplars in step #1. In step #2 beholders (c) adapt towards the new stimuli integrating them into their visual habits. The appreciation space is consequently (d) retuned. This kind establishing and stabilizing taste is going on continuously. Paintings depicted here are from the Wikimedia Commons showing (a) typical impressionist works by Claude Monet and Pierre-Auguste Renoir and (b) distinctive and, in the period of impressionism, highly innovative post-impressionist / expressionist works by Vincent Van Gogh.

The idea of such a two-subsequent steps model (see Figure 1) of the dynamics of aesthetic appreciation which was developed by Carbon [2] also implies that aesthetic appreciation can never be static in an ever-changing world, so there

is no final stage, no ideal proportion and no best solution in terms of aesthetics. There might be exemplars, features or proportions which are faster to be adapted to, but the model would predict increased appreciation after a while of adaptation even for qualities which are initially not liked at all.

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