The Domain-Specificity of Epistemological Understanding in Making Aesthetic Judgments

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ABSTRACT

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Literature in arts education suggests that experiences in the arts support the development of thinking skills such as critical thinking and reasoning (Fiske, 1999; Eisner, 2004; Greene, Kisida, and Bowen, 2014). But do individuals make aesthetic judgments supported by critical thinking and reasoning, or are these judgments based only on subjective preferences or personal taste? The present study examines whether undergraduate college students from an elite private university serving primarily students of high socioeconomic status (SES) and a public university serving primarily low SES students (n=150) invoke criteria when making evaluative judgments across the domains of visual art, music, and a non-aesthetic more general domain. Students were asked to compare two works of art (visual art or music), and to compare two fictional political candidates and to indicate whether one could be judged superior to the other and if so on what basis. Responses reflected levels of epistemological understanding—that is, whether judgments are based primarily on facts (Absolutist level), subjective opinions (Multiplist level), or criteria (Evaluativist level).

The majority of participants displayed Multiplist levels in the aesthetic domains. Evaluativist levels were more common in the non-aesthetic domain, although significantly so only in comparison to the music domain among the students from the private elite university.

Group comparisons across the two aesthetic domains showed that individuals scored at the Evaluativist level with more frequency in the visual art domain as compared to the music domain. However, this difference was significant only among the participants from the private elite university and not among the participants from the public university. The general educational and social background of the participants (private elite university setting versus public university setting) proved to be the strongest predictor of Evaluativist-level responses.

Continued research in epistemological understanding in the aesthetic domain is needed, as development in epistemological thinking may afford insights into the degree to which individuals exercise critical thinking about the arts, and how such thinking can be fostered.

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DEDICATION

For P.G.K. and our boy Stover

CHAPTER I:

Introduction

Research in the arts and arts education reveals that experiences with works of art can support a range of skills and knowledge that are critical for leading healthy, productive lives and being participatory, critical citizens in society (Fiske, 1999; Eisner, 2004). A longitudinal study by the National Endowment for the Arts revealed that youth of low socioeconomic status (SES) with a history of high arts engagement had better grades and higher college enrollment than youth without such involvement (2015). Increasingly arts advocates and researchers are using empirical tools and methods to provide concrete data consistent with this relation, citing the arts as a path to improving critical thinking skills, perspective-taking, and even tolerance (Greene, Kisida, & Bowen, 2014). Critical thinking in particular, as part of the initiative to support twenty-first century skills (P21, 2015), has received enormous attention in a range of research fields as well as educational practice. Recently, a national research agenda has been launched by the National Art Education Association (NAEA, 1996) to investigate the impact of the arts, and new National Learning Standards have also been developed and adopted (National Coalition for Core Arts Standards, 2014).

Despite support and enthusiasm for both affective and cognitive research in arts education and related fields of psychology, the arts and arts education continue to face barriers in being prioritized in a well-rounded public education (Cohen, 2016). There are few resources available in formal school settings for the arts, with limited qualified staff to teach these subjects. While arts and cultural institutions are eager to partner with schools to provide support and bridge this gap in arts education, these efforts are often not sustainable, or they are perceived

merely as “field trips” or enrichment experiences rather than a core educational activity that helps to build lifelong skills and knowledge. Beyond the K-12 student population, too often visitors to museums and arts institutions see their role as a passive one—to “appreciate” the arts or simply view them as distant audience members. Participants in aesthetic experiences, such as art museum visitors for example, often consider their role as one of recipient of aesthetic judgments that have already been determined by an authoritative source, such as a curator, and therefore see the arts as irrelevant to them. In fact, in a 2015 audience engagement study at the Metropolitan Museum of Art, 40% of first-time visitors said that while they enjoyed their visit to the Museum, they did not see it as a place for “someone like them” (Metropolitan Museum of Art, 2015).

Beyond the economic and political barriers surrounding arts education and arts access, the arts also suffer from a perceptual challenge that may not be readily apparent. The well-known adage, “art is in the eye of the beholder” (Hungerford, 1878) has promoted a widely-held belief that art is always subjective. A common refrain among even well-trained arts educators is “no one is ever wrong in the arts” (Young, 2001). While the genesis of these adages may come from a belief in making the arts accessible to all, they may in fact be undermining a fundamental humanistic quality of art: that art is made by people through a process of reasoning with ideas. Critical thinking about art, just as in other domains, requires reasoning, which implicates one or more criteria. Therefore, to put forth the effort that requires reasoning, one must recognize that there is more to experience and understand in art than a purely subjectivist response of “what is in the eye of the beholder” or that “no one is ever wrong in art” (Felton & Kuhn, 2007).

The research reported here aims to better understand how our beliefs about knowledge and knowing, termed epistemological understanding, influence our judgments in the aesthetic

domain. Are our evaluations in the aesthetic domain particular to a medium (in this case visual art vs. music)? This research also aims to investigate the role of experience or expertise in the arts, and its effects on aesthetic understanding.

The Development of Epistemological Understanding

The beliefs that people hold about knowledge and knowing are central to how they think about themselves and the world (Perry, 1970; Kuhn, 1991; King & Kitchener, 1994). Whether reading information in the daily news, researching a topic for a graduate degree, or encountering objects in a museum's collection, people make judgments and evaluations about the meaning, credibility and worth of these encounters with new information and ideas (Hofer, 2001). Research suggests that these beliefs may vary across content domains (Kuhn, Cheney, & Weinstock, 2000), leading to the present objective of comparing the two aesthetic domains.

Broad agreement in the research literature confirms that there are three broad levels of epistemological understanding: Absolutist, Multiplist, and Evaluativist (Perry, 1970; Kuhn, 1991). The first level, Absolutist, is the least mature in which individuals form judgments based on facts that are obtained from a certain, known reality. At the second level, Multiplist, individuals form judgments based on opinion or preference, and all knowing is completely subjective. At the third and most mature level, Evaluativist, individuals re-integrate the objective and the subjective and form judgments based on reasoning involving criteria.

The Present Study

While research in epistemological understanding has expanded overall, the aesthetic domain has received relatively little attention in the research literature. Over the past several decades, however, researchers have investigated a field termed "aesthetic development" that examines the stages, or levels, through which learners pass in their responses to visual art. The literature in aesthetic development, across a number of independent researchers since the 1970s, shows notable parallels with the epistemological levels described previously, although the two fields have not been explicitly linked.

Research in both aesthetic development and epistemological development informs the present study. As studies in both of these fields suggest, individuals pass through a number of levels (or stages) in their judgments about aesthetic stimuli, but more research is needed to examine the degree to which this progression is consistent across domains. Further, a key factor in response to aesthetic stimuli is likely amount of experience or expertise in the aesthetic domain. Thus, this study includes examination of their effects.

The following research questions were asked in this study:

1. To what extent do young adults use Evaluativist epistemological criteria when making aesthetic judgments?
2. Is general educational and social background (represented by attendance at a private, elite university compared with a public university) a more important factor than arts expertise with respect to level of aesthetic judgments?
3. Does a difference in such levels exist across the visual art and music domains?
4. Is there a difference in such levels between aesthetic and non-aesthetic domains?

CHAPTER II:

Literature Review

Epistemological understanding (or epistemic cognition) is core to philosophy and constitutes a critical and fundamental part of human understanding: our knowledge about knowledge. Yet a coherent conceptual framework regarding epistemological understanding is still in development, and the terminology related to epistemological understanding continues to vary (Moshman, 2015).

Research suggests that epistemic beliefs vary across content domains (Kuhn, Cheney & Weinstock, 2000). Judgments about the physical world versus the social world, for example, may be different, influenced by the degree to which one coordinates objective and subjective criteria. In natural science domains, for example, a key challenge is to understand that human interpretation plays a role in knowledge construction while in social domains (such as aesthetics) the challenge is to ensure they do not play an overpowering role (Kuhn, Cheney & Weinstock, 2000). While it is important to acknowledge that epistemological understanding must be distinguished in specific domains, researchers continue to debate exactly which domains are truly epistemic and the nature of epistemological development within those domains (Moshman, 2015).

Epistemological understanding is best understood in its context of human development. While the automatic aspects of human thinking often receive attention in the research literature, an interest in metacognitive thinking as the deliberate, purposeful methods of examining one's own thinking has come to the fore (Flavell, 1979; Tarricone, 2011). Within frameworks

developed by education researchers such as *Habits of Mind* (Costa, 1991), *Thinking Routines* (Ritchart, 2007), or *Visible Thinking* (Tishman & Palmer, 2005), it is clear that this new emphasis on a learner's awareness of her own thinking and regulation is receiving critical attention, both within psychology and among education practitioners. Ultimately, if we better understand how people can become more rational, critical, and deliberate about knowledge and its justifications, we will be better positioned to support a democratic society (Moshman, 2015).

Origins of the Study of Epistemological Understanding

The origins of the study of epistemology lie in philosophy, one of the major branches among metaphysics, ethics, politics, and aesthetics (Ozman & Craver, 2003). Questions concerning the nature of knowledge, the limits of knowledge, and whether our knowledge can ever be certain, have been at the core of human inquiry since ancient times, ranging from Plato's treatise that knowledge (and the arts) are reflections of an existing reality, to theories of rationalism and empiricism, that posit that human beings are creators of knowledge through reasoning and experience (Audi, 1999). More recently in the twentieth century, Jean Piaget saw himself as a "genetic epistemologist," one who studies the origin of human knowledge, rather than predominantly as a psychologist or an educator (Ozman & Craver, 2003).

In the field of education, early twentieth-century progressive educators such as John Dewey and Lucy Sprague Mitchell asserted that people are active agents in making meaning, and that in fact, educative experiences come about when the learner is actively participating in reasoning and forming evaluations. Inquiry-based, constructivist approaches to learning posit that the learners themselves are meaning-makers, thus shaping knowledge and contributing to it,

rather than passive recipients of pre-determined knowledge that exists outside of themselves (Dewey, 1933; Bruner, 1966). Further, psychological investigation concerned with epistemological questions were joined with the philosophical questions of "How do we know?" with the establishment in 1963 of Division 24 of the American Psychological Association, The Society for Theoretical and Philosophical Psychology, and Royce and colleagues developed a standardized inventory of personal epistemology, the Psycho-Epistemological Profile (Royce, Coward, Egan, Kessel, & Mos, 1978).

Perhaps the most well-known researcher cited as developing the empirical frameworks for epistemological understanding is William Perry (1970), who studied undergraduate college students at Harvard in the 1950s and 1960s. As Director of the Harvard College Bureau of Study Council, Perry noticed that students described their college experiences differently, and researched the nature of these individual differences. His work led to the development of the Perry Scheme, and research in the Perry tradition now covers a range from preadolescence to adulthood (Moshman, 2015). Perry identified nine "positions" that form a progression, which can be divided into three main levels of epistemological understanding: objectivism, subjectivism, and metasubjectivist rationalism (Moshman, 2015). These levels have been elaborated by a number of researchers in the study of epistemology (Kuhn, 1991; Kuhn, Cheney & Weinstock, 2000; Kuhn & Park, 2005).

Contemporary Research in Epistemological Understanding

Research in epistemological development has grown over the past twenty years, and broad agreement now exists that individuals develop through a sequence of levels as they come

to understand the nature of knowledge and knowing (Moshman, 2015). These beliefs first develop from an extreme objectivist position to one of extreme subjectivism. Beyond these two levels, only a smaller number of individuals achieve the more balanced view by reintegrating the objective. They do so by recognizing that while knowledge is created by humans, it can still be evaluated against a set of standards or criteria. At the Realist level (typically preschool-aged children), individuals believe that knowledge is a direct copy of the world that they experience. They accept claims as truth and assume that everyone shares the same mental representations of an objective world. However, Realists typically progress to an Absolutist view—an understanding that this reality is mediated by perception and that individuals can hold false beliefs. At this point, Absolutists recognize that knowledge and beliefs must be evaluated for accuracy and that there is a verifiable truth. However, the Absolutist believes this truth is directly knowable—that is, that one position is correct and the other false. They also accept knowledge from authorities without questioning the basis for that knowledge.

During adolescence, inspired perhaps by recognition that people do not in fact always agree, individuals typically undergo a shift from the Absolutist view that is entirely objective, to one of extreme subjectivism, coming to believe that all knowledge is constructed, and that what they once believed to be verifiable truth is now merely subjective opinion or preference. Multiplists maintain that everyone is equally right (or wrong), and that no point of view is more valid than another. Finally, only a smaller number of individuals re-integrate objectivity into this subjectivist position and emerge as Evaluativists, holding the belief that while all knowledge is created by humans and is prone to error or opinion, we can still make judgments based on evidence, argument, and reasoning.

Research also indicates that individuals tend to transition from one epistemological level to another in an order that varies by knowledge domain. Individuals typically first transition from Absolutism to Multiplism in the aesthetic domain and in issues of personal taste, while this transition occurs later in topics related to social issues or values, and then finally in the physical sciences (Kuhn, Cheney, & Weinstock, 2000).

Research in Aesthetic Development

While epistemological understanding can be found within any number of domains, the focus here is the aesthetic domain. The field of aesthetics, another branch of philosophy, clearly has its own complex history that is beyond the scope of this literature review. Philosophers have long posited that as humans we create and interpret symbol systems, and that a key to understanding lies in how we interpret those symbols systems. Aesthetics and its analysis has become the subject of empirical investigation, as Structuralist philosophers saw parallels in language and how the mind processes information (Goodman, 1976).

Over the past several decades, researchers have investigated a field termed "aesthetic development" that examines the stages, or levels, through which learners pass in how they respond to visual stimuli. In *Children's Conceptions of the Arts* (1975), Gardner, Winner, and Kircher determined that young people pass through at least three stages in how they respond to visual works of art. In Stage I, viewers describe works of art in direct, concrete ways. Stage II viewers judge works of art based on realism, often using legalistic terms about art (what one is allowed to paint, the rules of artmaking) and rejecting artworks that do not fit these rules. Stage

III viewers are tolerant of works of art to the point of extreme relativism. There is an insistence on the validity of all opinions, and art is a question of personal taste.

Similarly, Housen (1983) asserts that art viewers move through five stages, moving from concrete observations, to skill-based evaluations, to a focus on categorization, then to interpretive judgments and finally to a balance of personal response with critical comparison. In Stage I, termed *Accountative*, viewers are listmakers and storytellers, and make simple, concrete observations. At Stage II, *Constructive*, viewers compare works of art to what they understand as true in their world experience. So, if art does not look like it is "supposed to," and if skill and realism are not evident, the Stage II viewer regards the artwork as "weird" or lacking in value. Stage III viewers, *Classifiers*, want to identify the artwork within a particular style, period, and is eager to learn more about the artist's biography or background. The Stage III viewer claims that, properly categorized, the artwork's meaning and message can be explained and rationalized. In Stage IV, *Interpretive*, viewers understand works of art as subject to reinterpretation over time, and that these interpretations may shift and change. Finally, in Stage V, *Re-Creative*, viewers are open to first viewing a work of art with openness, but then apply a critical stance, integrating their own personal view of the work of art with issues or concerns that may be more universal.

Parsons (1987) asserted that learners pass through five stages of aesthetic development with age and experience. In Stage I, viewers make judgments based on an intuitive delight of works of art, and have associative responses to subject matter. In Stage II, viewers are preoccupied with artistic skill, believing that works of art should mirror what we see and experience in the world. In Stage III, viewers are drawn to artworks that display emotion (the more intense the better), and there is a focus on the interiority, individuality and subjectivity of experience. Finally, in Stage IV, these advanced viewers understand that the significance of art

is a social rather than an individual achievement, and recognize that criteria exist within categories of artworks that are developed by people looking at art over time and in dialogue with one another.

As the literature in aesthetic development indicates, there are significant similarities between this field of study and epistemological understanding. Although the stages or levels across the two literatures are defined differently, and are varied in number, they both describe the progression of assertions based on facts from a known reality, to assertions based on opinions, and then for a smaller proportion of subjects at the most mature level, to assertions based on reasoning with criteria.

The Domain-Specificity of Epistemological Understanding

As described above, both in the literature of epistemological understanding, and in the literature on aesthetic development, people develop from a position of objectivism to one of subjectivism. A subset of them progress to a position that re-integrates objectivity into the subjectivist view. However, is this true across all domains? If epistemological understanding varies across domains, are there possibilities that it may vary even within a single domain? An emerging, yet still fragmented literature is growing on the topic of domain-specificity of epistemological understanding (Moshman, 2015). In addition to using varied terminology, or even no reference to "epistemology" (yet deeply connected to it), it remains a topic of debate as to how one can distinguish psychological domain-specificity from epistemic domain-specificity. Further, researchers debate how many unique domains exist with respect to epistemological

understanding, and the complexity that is presented when one identifies a multiplicity of domains (Muis, Bendixon, & Haerle, 2006; Moshman, 2015).

As cited by Hofer (2006), clarification of the definition of "domain" is much needed in order to understand domain specificity and generality and to develop effective assessments. How domains are defined influences how researchers craft theoretical views of the subject, research methodologies, and their conclusions (Alexander, Schallert, & Hare, 1991). Domain knowledge is defined by a body of knowledge that one possesses, and comprises conditional knowing, procedural knowing, and declarative knowing. Further, some domains may be categorized as more academically oriented (such as mathematics) compared with swimming, for example, and can also be defined as well-structured or ill-structured (Frederiksen, 1984).

Royce et al. (1978) proposed that individuals develop more specialized forms of knowledge as they progress through higher levels of education, and therefore one might presume that individuals' epistemic beliefs would be consistent with the epistemic nature of their domains of study (Muis et al., 2006). But are individuals' epistemic beliefs more general in childhood and adolescence, and then become more specific with experience and education? Hofer (2006) noted that the degree to which epistemic beliefs are general or specific across domains is made more complex by the fact that academic domains differ in their epistemological assumptions.

Research in the domain-specificity of epistemological understanding has included both between-subjects and within-subjects research designs (Buehl & Alexander, 2001), dependent upon the nature of the research question. Often between-subjects designs examine students' epistemic beliefs across domains by sampling individuals (primarily students) from different majors of study. Within-subjects designs require the participants to rate or rank their beliefs

about different domains to assess whether their epistemic beliefs across domains are similar or different (Muis, 2001).

The majority of research on domain-specificity of epistemological understanding with a within-subjects approach has focused on undergraduate students (Buehl & Alexander, 2006). In fact, only three of eleven studies of this design type that were reviewed by Muis et al. (2006) examined elementary, middle or high school students. Results from within-subjects designs have been mixed; two studies provided moderate evidence for domain generality (Schommer & Walker, 1995) and nine studies provided evidence for domain-specificity. A study by Schoenfeld (1989) examined students' beliefs across mathematics and social studies and contributed the finding that instructional practices influenced students' epistemic beliefs.

The implications of research on epistemological understanding and its domain-specificity are broad, particularly with respect to the development of effective teaching practices and also with respect to institutions that are "purveyors of knowledge," such as museums. Should educators and arts institutions provide more explicit, metacognitive supports such that individuals consider epistemic issues as they form judgments? If epistemic issues and beliefs vary across domains, how should educational practice respond to that challenge?

More research in the epistemic understanding of certain domains, such as the arts, may aid individuals and educators in understanding that they are active agents in shaping knowledge about that domain, rather than simply "appreciating" or passively observing.

Conclusion

Continued research in epistemological understanding in the aesthetic domain is needed, as epistemological development may afford insights into aesthetic development and the degree to which individuals exercise critical thinking about aesthetic stimuli, such as works of art. This study of critical thinking and epistemological understanding is especially needed and timely in the field of arts education, given that arts organizations, including art museums, are forming large-scale national, government-supported research agendas that will examine how the visual arts support critical thinking skills (NAEA, 1996). The recently released National Visual Arts Standards require that students understand and evaluate how the arts convey meaning and that they evaluate art based on criteria (National Coalition for Core Arts Standards, 2014). Further research in the domain-specificity of epistemological understanding will support a greater understanding of reasoning and critical thinking, as well as the development of educational practices that support mindfulness and metacognition.

CHAPTER III:

Method

Participants

One hundred and fifty matriculated students in undergraduate college participated in the study, drawn from two universities (one elite private, one public) located in New York, New York. The public university served primarily low SES students, and the elite private university served primarily high SES students. Age ranged from 18-34 years ($M = 21.85$, $SD = \pm 3.13$). At both universities, students were asked to participate in the study through inquiries with their professor upon their registration for a course in art appreciation, art humanities or music humanities. One student was excluded as he did not fully complete the paper and pencil assessments.

All assessments occurred in the classroom setting of a course at the students' university. At the private university, students were enrolled in either an art humanities course or a music humanities course. Both of these courses focused on Western masterpieces, and were not historical surveys, but rather included analytical study of a limited number of artworks and a focus on how to look at, think about, and engage in critical discussion of the arts. Both of these courses were a six-week semester (offered in summer), meeting twice per week for six hours per week. Students were required to take the courses in order to fulfill degree requirements. At the public university, students were enrolled in an introductory art appreciation course and focused primarily on Western artworks. Rather than a lecture format, this course was also focused on how to look at, think about, and engage in critical discussion of art. This course at the public university was offered for a full 14-week semester during the fall term, although students in these

groups were assessed at the start of the semester (within the first two weeks of the course). Categories of students who participated thus consisted of the following groups: Private Art Experts (elite private university students who completed the art humanities course), Private Art Novices (elite private university students who had not yet taken the art humanities course), Private Music Experts (elite private university students who had completed the music humanities course), Private Music Novices (elite private university students who had not yet taken the music humanities course), Public Art Novices (public university students who had not yet taken the art appreciation course), and Public Music Novices (public university students who had not yet taken the art appreciation course).

While ethnic background information was not gathered for individual subjects, the public university serves student populations that are, on average, 35% Hispanic, 30% Asian, 15% African-American, 10% White, and 10% Other. The elite private university serves populations that, on average, are 40% White, 20% Hispanic, 20% Asian, 10% African-American, and 10% Other. Among all participants in the study, 40% were male, and 60% were female, a ratio that was roughly consistent within subgroups.

Design and Procedure

Participants were recruited via an e-mail communication with their instructor sent by the author to inquire about the possibility of students' participation (see Appendix A). Once contact was made with the instructor, an appointment was made for the author to visit the class to introduce the project and conduct the assessments.

The research design utilized both between-subjects and within-subjects approaches. Groups were compared on two assessments: one that measured a general level of epistemology,

and one that measured epistemological level in the aesthetic domain (visual art or music). A within-subjects analysis was conducted to see whether individual students demonstrated more advanced epistemology in the general domain as compared with the aesthetic domain.

The assessments took place in the students' normal classroom meeting space on the respective college campuses. Assessments typically took place at the conclusion of the scheduled class meeting time. Students were allotted extra time if needed. Upon arrival, students were greeted and given a consent form to read (see Appendix B). No signature was required for the consent form. After an introduction and instructions from the author, students then proceeded to complete the assessments. Once the students were finished, they were thanked for their time.

Assessments

Two assessments of epistemological understanding level were administered to all participants in the study: an aesthetic domain (visual art or music) and one in a non-aesthetic more general domain. The assessments were counterbalanced in their administration such that half of the students in each group completed the general measure first, followed by the aesthetic measure, and vice versa for the other half of the group. Each assessment required approximately ten minutes to complete.

The students enrolled in the art humanities course completed the visual art assessment, and the students enrolled in the music humanities course completed the music assessment. Students with low expertise (who had not yet had exposure to aesthetics courses) were randomly assigned either the visual art assessment or the music assessment for their entire class group.

Assessment of Epistemological Level in Non-Aesthetic, General Domain. A number of instruments exist in the current research to establish a general measure of epistemological understanding. However, the majority of these instruments, such as the "Livia Problem" (Kuhn, Pennington, & Leadbeater, 1983), are quite extensive and require individual administration, making them not viable in a group setting. For this study, a briefer measure was used, suitable for group administration, adapted from one used by Kuhn, Zillmer, Crowell and Zavala (2013). It described two candidates running for mayor of a city, the troubles that concern the city, and the candidates' solutions to these challenges. The task as presented in writing to participants appears in Table 1:

Table 1

Non-Aesthetic General Domain Task

> *Ana Cruz and Maria Diaz are running for mayor of their troubled large city. Among the city's problems are high housing costs, teen crime, traffic, school dropout, and unemployment.*
>
> *Chuck and Doug are TV commentators arguing about who is the better candidate. Chuck thinks Cruz is better and Doug thinks Diaz is better.*

Here is some information about Cruz' positions. She promises to:	***Here is some information about Diaz' positions. She promises to:***
-create job training programs *-expand city parks* *-raise teachers' pay* *-open walk-in health clinics* *- reduce rents*	*- improve public transportation* *-open more centers for senior citizens* *- revise the high school curriculum*

- impose a teen curfew *-employ senior citizens in city schools*	*-build a new athletic stadium* *- improve health care* *-build more housing*

Can anyone say for certain that Chuck or Doug is more right?

Yes _____ *No* _____

Why or why not?

Can anyone say for certain that one of the candidates is a better candidate than the other?

Yes _____ *No* _____

Why or why not?

Which one do <u>YOU</u> think is the better candidate (circle one)?

Cruz *Diaz*

What makes that candidate better?

Visual Art Assessment. The assessment was based on two paintings (see Appendix E) presented to students by projecting them digitally on a screen in the front of the classroom. Each painting was shown for 30 seconds, and then each was shown a second time for an additional 30 seconds. Students were invited to make notes about the paintings if they wished on blank paper while viewing them. The first painting was naturalistic (representational), showing a landscape with a stream, figures, animals, and mountains in the background (Durand, 1853). The second painting was abstract, with bold colors and amorphous forms (Miró, 1927). Both paintings were from the collection of a major art museum in the Northeast; however, this information was not disclosed

to the participants, and these lesser-known paintings were intentionally selected so that students would be unlikely to have prior knowledge of the artworks.

After viewing both of the paintings, participants responded in writing to questions designed to reveal how they make evaluative judgments about a work of art. The questions were:

> *Robin and Chris compared these two paintings. Robin says Painting A is better, and Chris says Painting B is better.*
>
> *Can anyone say for certain that Robin or Chris is more right? Why or why not?*
>
> *Can anyone say for certain that one of the paintings is a better painting than the other? Why or why not?*
>
> *Which one do you think is the better painting? What makes it better?*

Music Assessment. The music assessment procedure paralleled the procedure used for the visual art assessment. Participants compared two samples of music, approximately 30 seconds in length each, which were sampled from a traditional jazz work, and a modern jazz work (see Appendix F). The traditional jazz music sample was melodic, with a regularized structure (Carter, 1943). The modern jazz music sample was dissonant and irregular in structure (Brotzmann, 1992). Both jazz works were performed by internationally-acclaimed jazz musicians; however, this information was not disclosed to the participants, and these lesser-known music samples were intentionally selected so that students would not have prior knowledge of them.

Participants listened to the music samples twice. Each was played for its 30-second duration, and then played a second time in the same sequence. Participants were provided with paper and pencil if they wished to capture their thoughts or reactions to the music as they listened. Participants then responded to the following questions in writing:

Robin and Chris compared these two pieces of music. Robin says Music A is better, and Chris says Music B is better.

Can anyone say for certain that Robin or Chris is more right? Why or why not?

Can anyone say for certain that one of the pieces of music is better than the other? Why or why not?

Which one do you think is better? What makes it better?

CHAPTER IV:

Results

Coding

For all three assessments, a third of the responses were randomly selected to establish the initial coding scheme, and then another third of responses were randomly selected to be coded with the assistance of an independent researcher to establish reliability. The remaining third were then coded by the author. To establish reliability, the two coders coded independently, and then discussed their results. The percentage agreement between the two coders were as follows: visual art task, 90% ($\kappa = 0.276$), music task, 85% ($\kappa = 0.227$), and the general task, 82% ($\kappa = 0.414$). All disagreements were resolved through discussion.

Coding Process and Scheme for General Epistemological Measure. A third of the responses to the general epistemological assessment were randomly selected to create the coding scheme. The coding scheme was as follows:

Table 2

Coding Scheme for General Epistemological Level ("Doug and Chuck" task)

Code	Description	Examples
Absolutist	A criterion is invoked; however, the criterion is limited to an assumed universal understanding of which candidate must be objectively "right."	The mayor has to do something to reduce problems, and Cruz is better. Doug is more right because of the senior citizens….

Multiplist	No criteria are used in making an evaluation; the choice of candidate is just a preference or opinion; either candidate might be regarded as good as the other.	Everyone has their own opinion. You can't say whether Diaz or Cruz is best. No one can predict the future, so we really can't know who is best.
Evaluativist	Criteria are invoked that go beyond comparison to an assumed universal "right" by invoking what the citizens' or city's priorities or values are (or could be), or empirical criteria, evidence, or expertise that could provide bases for evaluation. Incommensurability of the two candidates because evaluation requires other frameworks, additional information, or a criterion that isn't provided in the problem statement.	It depends on the city's priorities and what the communities value. Someone could perform an extensive analysis of their position…see which policies will benefit the largest part of the population…. These two candidates cannot be compared because we do not know enough about the priorities of the city….

Coding Process and Scheme for Visual Art Task. An initial coding scheme was adapted from a previous cross-sectional study of epistemological understanding in the aesthetic domain by the author (Crow, 2015). A third of the responses were randomly selected to further refine the coding scheme, shown in Table 3:

Table 3

Coding Scheme for Visual Art Task

Code	Description	Examples
Absolutist	A criterion is invoked; however, the criterion is limited to whether the artwork reflects a known, predetermined reality or shows evidence of the artist's skill in rendering a realistic image.	Robin's painting is best, because it's very clear and has a lot of details. Robin's painting is more beautiful, and it took more time and skill to make.
Multiplist	No criteria are used in making an evaluation; art is a matter of opinion, personal taste or preference.	Everyone has their own opinion in art. You can't say whether Robin or Chris' painting is best. It depends on the person looking at it; everyone has their own taste. Art, beauty and value are in the eye of the beholder.
Evaluativist	Comparison and judgment of "best" is possible only if a shared framework or context is invoked and applied.	No criteria have been provided for comparison; an objective criterion must be used. An art expert considering the composition of each work would make a better judgment than someone who says "I like the colors in Painting B…." The artists had different motivations, goals, and intentions—so, these artworks can't be compared in terms of "best." The paintings are different styles or genres, and so they can't be compared.

Coding Process and Scheme for Music Task. A randomly-selected third of the responses were used to develop the coding scheme, as shown in Table 4:

Table 4

Coding Scheme for Music Task

Code	Description	Examples
Absolutist	A criterion is invoked; however, the criterion is limited to whether the music is linear, organized, or shows evidence of the artist's skill.	Robin's music is best, because it's more regular, rhythmical and tuneful. Robin's music is more beautiful; it took more skill to play it.
Multiplist	No criteria are invoked in making a judgment; music judgments are a matter of opinion or personal taste.	Everyone has their own opinion or taste in music. You can't say whether Robin or Chris' music is best. It depends on the person listening to it; everyone has their own perspective. Music (and any other art form) is highly subjective.
Evaluativist	Comparison and judgment of "best" is possible only if a shared framework or context is invoked and applied.	The music pieces have different styles. It depends on what the goal of the music is. [We cannot compare them] unless a metric or rubric is agreed upon and based on the context of that particular music. It could be stated that Music A is better within a Western setting because of Music B's dissonance and perceived lack of structure.

Frequency of Evaluativist responses across the three domains

The first research question asks whether young adults display any invocation of criteria when making judgments in the aesthetic domain, or whether they consider aesthetic judgments to be merely ones of subjective personal taste. A descriptive analysis of the data, presented in Table 5, shows the percentages of participants categorized as Evaluativists by group and subgroup:

Table 5

Percentage of Participants Scoring at the Evaluativist Level by Group and Subgroup

	Art	**Music**	**Non-Aesthetic**
Private University			
High expertise	66.7	37.5	62.5
Low expertise	57.7	41.7	62.0
Public University			
Low expertise	20.8	14.3	34.6

The highest frequencies of Evaluativists were seen among the private university subjects, with the highest frequency in the Private/High Expertise art group (66.7%). The remaining private university groups, regardless of level of expertise, displayed higher proportions of Evaluativists than the public university groups. Only in the private university visual art groups do we see a proportion of Evaluativists exceeding 50% across both aesthetic measures.

Differences by university type in the aesthetic domains. The second research question posed concerns whether general educational and social background (represented by university type) was a more important factor than expertise with respect to performance. Using a Mann-Whitney U Test, comparisons were made between groups to determine where significant differences exist. This non-parametric approach was used in the statistical analyses given that the dependent variable is ordinal and without assuming normal distribution. When comparing the Private/Low Expertise Art group with the Public/Low Expertise Art group, the mean rank of the Private group was higher (29.77) compared with the Public group (20.88), and the result showed a significant difference: $U = 201$, $z = -2.47$, $p = .013$. When comparing the Private/Low Expertise Music group with the Public/Low Expertise Music group, the mean rank of the Private group was higher (30.58), the Public group lower (23.00), and the difference was also significant: $U = 238$, $z = -2.01$, $p = .045$.

Differences by university type in the non-aesthetic domain. When examining general educational and social background (represented by university type) and performance in the non-aesthetic domain, the highest proportion of Evaluativists was found among Private/High Expertise participants (across both visual art and music), 62.5%, with an almost identical percentage of Evaluativists found in the Private/Low Expertise subjects (again, across both visual art and music): 62.0%. Among the Public/Low Expertise subjects, only 34.6% (across both visual art and music) displayed Evaluativist responses. Using a Mann-Whitney U Test, a comparison of the Private/Low Expertise Music group with the Public/Low Expertise Music group showed a higher mean rank for the Private group (31.21) compared with the Public group (22.46), a significant difference: $U = 223$, $z = -2.336$, $p = .020$.

Differences in expertise

The results of this study revealed no significant difference between the High Expertise and Low Expertise groups in the proportion of Evaluativist responses. When examining the Private groups, only a modestly higher proportion of Evaluativists were observed in the High Expertise Art group: 66.7% compared with 57.7% in the Low Expertise Art group. The Mann-Whitney U Test showed no significant difference between these groups: U = 280, z = -0.735, p = .463. With regard to the Music groups, a slightly higher proportion of Evaluativists were observed in the Low Expertise group (41.7%) compared with the High Expertise group (37.5%), but the two groups were not statistically different.

Epistemological understanding across the visual art and music domains

A primary question of interest was the degree to which epistemological understanding varies (if at all) within the aesthetic domain. Examining the frequency of Evaluativists (Table 5), the highest proportions were found in the visual art groups: 66.7% (Private/High Expertise), 57.7% (Private/Low Expertise), and 20.8% (Public/Low Expertise). The lowest proportion of Evaluativists was found in the Public/Low Expertise Music group: 14.3%. The Mann-Whitney U Test was used to compare the Private Art Experts with the Private Music Experts, and the results showed a significant difference: the art group mean rank was higher (28.33) compared with the music group (20.67), U = 196, z = -2.155, p = .031. However, the comparison between the Public/Low Expertise Art group with the Public/Low Expertise Music group did not show a significant difference: U = 269, z = -1.513, p = .130.

Differences between general epistemological level and aesthetic level

The final research question of interest in this study was whether a significant difference exists between the general epistemological level and the aesthetic level. A sign test was used to compare sub-groups with the following results:

Table 6

Differences between Aesthetic Level and the Non-Aesthetic Level

	Art				Music			
	-	+	=	Exact Sig. (2-tailed)	-	+	=	Exact Sig. (2-tailed)
Private University								
Hi expertise	5	3	16	.727	3	10	11	.092
Lo expertise	5	6	15	1.00	4	11	9	.118
Total Private University	10	9	31	1.00	7	21	20	.014*
Public University								
Lo expertise	4	8	12	.388	3	11	14	.057

* $p < .05$

Negative differences = non-aesthetic general domain score was lower than aesthetic score

Positive differences = non-aesthetic general domain score was higher than aesthetic score

Equal = non-aesthetic general domain score was the same as the aesthetic score

The sign test showed whether participants' scores were lower on the non-aesthetic measure than the aesthetic measure (shown by the negative columns), higher on the non-aesthetic measure (shown by the positive columns) or the same. The results showed that the participants who completed the music task were less likely to display Evaluativist responses in the aesthetic domain, but did show an increase in Evaluativist responses in the non-aesthetic general domain.

The results of the sign test for each of the sub-groups revealed a significant difference in the Private Music participants (p = .014), and the Public Music participants is approaching significance (p = .057). There were no significant differences in the visual art participants.

CHAPTER V:

Discussion

Purpose of Research

Four goals shaped the present research. The first was to determine if young adults invoke criteria when making judgments in the aesthetic domain, or whether they believe that judgments in the aesthetic domain (in this case, visual art and music) are merely ones of personal preference or taste. The invocation of criteria when making these aesthetic judgments was a means to better understand the justifications that individuals may have for their judgments, while recognizing that there are other factors that play a role in aesthetic judgment (such as affective responses, for example). A deeper understanding of individuals' epistemic judgments in the aesthetic domain is needed as these beliefs may influence the degree to which individuals exercise critical thinking skills. It is also timely to better understand these tacit beliefs underlying individuals' evaluations of art and music as currently arts institutions and national arts organizations are positioning critical thinking as a key outcome for their constituencies and central to their research agendas (NAEA, 1996).

A second goal of this research was to determine the extent to which factors such as general educational and social background (reflected by university type) or arts expertise influence judgments. As the arts and arts education are often under-funded and under-valued in public education, particularly within underserved or under-resourced communities, it is imperative to better understand what roles these factors play in order to address them.

A third goal of this research was to determine if differences exist across the aesthetic domains—in this study, a comparison between visual art and music. Educational practices in the visual arts and music are distinct, and a greater understanding of how individuals react to these art forms and evaluate them may shape future educational approaches.

The fourth goal of this research was to determine if differences in epistemological level are displayed when individuals make judgments in aesthetic domains compared with ones in a non-aesthetic, general domain.

Summary of Findings

The level of epistemological understanding displayed by individuals was compared across groups with respect to university type, arts expertise, and domain (visual art, music, and general non-aesthetic measure). A central question of interest in this study was the proportion of individuals who demonstrated Evaluativist responses, and therefore those proportions were compared across groups.

The highest proportions of Evaluativists were found among the private university groups, and specifically the highest frequency was found in the Private/High Expertise visual art group (66.7%). The remaining Private groups, regardless of level of expertise, displayed higher proportions of Evaluativism than the public university groups. Only in the Private visual art groups do we see a proportion of Evaluativists exceeding 50% across both aesthetic measures, which underscores previous research that provides evidence that Multiplist responses are predominant in the aesthetic domain among the majority of individuals.

General educational and social background (reflected by university type) was found to be a more significant factor affecting judgments than was expertise. The Private/Low Expertise art group scored significantly higher than participants in the Public/Low Expertise art group (U = 201, z = -2.47, p = .013). Similarly, the Private/Low Expertise Music group compared with the Public/Low Expertise Music group showed a significant difference (U = 238, z = -2.01, p = .045).

The third goal of this research was to investigate differences within the aesthetic domain (visual art and music), which revealed significant findings. The highest proportions of Evaluativists were found in the visual art groups: 66.7% (Private/High Expertise), 57.7% (Private/Low Expertise), and 20.8% (Public/Low Expertise). The lowest proportion of Evaluativists was found in the Public/Low Expertise Music group: 14.3%. A significant difference was found between Private Art Experts and Private Music Experts (U = 196, z = -2.155, p = .031), with the Private Art Experts outperforming experts in music. However, the comparison between the Public/Low Expertise Art group with the Public/Low Expertise Music group did not show a significant difference (U = 269, z = -1.513, p = .130).

Overall, then, general educational and social background (represented by university type) played the largest role in epistemological understanding. When examining the role of expertise, no significant evidence was found that it played a role in judgment. With regard to domain-specificity, this study provides evidence that differences may exist in individuals' responses to art forms (visual art vs. music), particularly among individuals of high expertise in that particular art form, but only among those in the Private group.

The final research question asked whether a difference exists between the aesthetic and non-aesthetic domains when participants make epistemic judgments. The results of Table 6 did

not reveal differences among participants who had completed the visual art assessment. However, participants who completed the music assessment tended to score lower on the aesthetic measure than the non-aesthetic measure, and this difference was significant among the Private group (p = .014). The difference for Public Music participants is approaching significance (p = .057). These results highlight that a larger gap exists among the music participants in epistemological level across the aesthetic and non-aesthetic domains, therefore implying that students tend to be less Evaluativist in music than in visual art. The smaller proportions of participants scoring at the Evaluativist level in both aesthetic domains (see Table 5) underscore that more research and educational approaches are needed to find ways of increasing participants' epistemological understanding, and this may be of particular importance in the area of music education.

Limitations and Future Directions

Paper and Pencil Assessments. The paper and pencil assessments that were designed for this study elicited responses from participants that aimed to reveal the epistemological understanding underlying their judgments in three domains: visual art, music, and a non-aesthetic general measure. This approach was taken for several reasons: to gather a large number of responses across groups, to adhere to a consistent protocol when gathering the data, and to minimize the study's invasiveness, especially given that the participants volunteered for the study through a request to the classroom teacher and the assessments were conducted within the natural classroom setting. While the total amount of data across groups was thereby maximized through the paper and pencil method, the amount of data collected from individuals was limited in scope. Perry (1970) utilized an interview methodology for his pioneering research

in epistemological understanding, which allowed for more depth and detail, and future studies may require this more detailed data to gain a more nuanced understanding of epistemological understanding underlying aesthetic judgments.

Counterbalancing groups during administration of assessments. The procedure of counterbalancing the assessments within a single classroom setting was challenging. While the general measure (the "Doug and Chuck task") was purely a paper-and-pencil task, both of the aesthetic measures required half of the groups to focus their attention on a different task (and medium) while the remaining students completed the general measure. This was resolved for the visual art task by simply having the participants who were completing the general measure first turn away from the projector screen while remaining at their desks. However, for the music task (which was played aloud in the group setting), half of the students who listened to the music sample needed to do so without disturbing the remaining students. In the end, this was resolved by starting the administration of the music task early for half of the class who arrived before class began (in the instances of the music classes students were requested to arrive to class 10 minutes early), and then administering the music task a second time for the second half of the group once they arrived and while the first group completed the general measure. While the paper and pencil music assessments were collected following the playing of the music samples, approximately half of the music participants heard the music samples four times (rather than twice) given that they were played aloud in the classroom setting, and they heard this second administration of music while they completed the non-aesthetic general task. None of the participants mentioned that this was distracting to them, but the music playing aloud while taking a different assessment was not ideal for the administration of the assessments.

Comparing works of art. While it is common within educational practice to compare works of art with an aim of examining issues of sameness or difference, it is uncommon that educators would ask students to compare works of art on the basis of value, or "what is best." In this study these questions were specifically designed to elicit responses from individuals that would reveal the degree to which they apply criteria in making judgments. It should be noted that some participants in the study reacted to this question with a degree of surprise given that they were not accustomed to being asked this type of question about the value or worth of works of art.

Further, the element of time is a central one in making comparisons between a static art form (paintings), and temporal ones (two music samples). To control for this, the paintings were projected on a screen in a sequence: Painting A first, then Painting B, for 30 seconds each. This was then repeated a second time. For the music samples, Music A was played for 30 seconds, followed by Music B, and then repeated once more for each sample. In both assessments, participants were provided with blank paper if they wished to make note of anything during the assessment, although it was observed that few students made use of this blank paper. Although the amount of time the individuals were exposed to the art forms was the same, it is difficult to measure the attention level for each. For example, during the administration of the visual art task, some students did not look at the artworks for the entire 30-second duration, particularly during the second viewing. Therefore, it is difficult to ascertain the degree of attention that participants paid to the respective aesthetic tasks, and if the amount of attention played a role in how they responded in their judgments.

Selection of exemplars for the aesthetic tasks. In the process of designing this study, a number of art and music comparisons were examined as possibilities. All four exemplars (two

paintings, two music samples) were the works of recognized and established artists/performers, although the individual examples were selected precisely because they were not widely-known works. However, students were not asked if they recognized the paintings or music during the administration of the tasks. The exemplars were also selected with an aim to have parity between the visual art comparison and the music comparison. For example, Painting A (Durand, 1853), an idyllic landscape, was selected for its naturalism, attention to detail, evidence of the artist's skill in precise rendering, and its aim to capture a known reality. This parallels Music A (Carter, 1943), a traditional big-band jazz excerpt, which was chosen for its regularity of structure, harmony and tunefulness, and evidence of the performers' musical skills. For the more abstract comparisons, Painting B (Miró, 1927) was selected for its use of amorphous forms, unnaturalistic colors, and a lack of a recognizable, known reality. Similarly, Music B (Brotzmann, 1992) was chosen for its lack of a regular structure, dissonance, and perceived lack of traditional musical skill.

Controlling for the degree of difference between the exemplars is a potential limitation of this study. How might participants have responded differently if the visual art or music examples were more similar in nature, rather than so radically different? For example, in the visual art comparison, would participants have responded differently if the naturalistic landscape painting (Durand, 1853) was compared with another landscape that was only slightly more abstract? Similarly, rather than comparing a very regularized, harmonious jazz music sample (Carter, 1943) to a dissonant free jazz sample (Brotzmann, 1992), would participants have responded differently with only a modestly more dissonant, irregular jazz work as a point of comparison? Further research investigating the issues surrounding degrees of difference could provide a more nuanced understanding of epistemic judgments in the aesthetic domain.

Definition of expertise, lack of a Public/High Expertise group. During the research design phase of this study, it became challenging to locate Public/High Expertise groups that would make for adequate comparisons. Part of this was due to the way expertise was defined in this study: the completion of a semester-long arts humanities course. Both the art humanities and music humanities courses at the private university utilized a shared curriculum based on a master syllabus, offering consistency among those participants that would not be common to a Public/High Expertise group. Therefore, comparisons made in the data analysis were restricted. Future studies would benefit from identifying and including a Public/High Expertise group.

Assumptions of general educational and social background, SES. Students were recruited for this study via their instructors at their university. While basic demographic information about both universities is publicly available, data were not collected at the individual level, and therefore it is not possible to assume with complete accuracy that all students within a particular group were of the same educational or social background. For example, some students at the private university may have been scholarship students, and students in the public university groups may have been of a different general education and social background as well.

The results of this study showed that general education and social background (as reflected in university type) was the strongest predictor of participants' judgments. While socioeconomic status (SES) information was not specifically gathered at the individual level for this study, it may have played a role, and it is important to understand what SES means and what it is measuring. Socioeconomic status is often measured as a combination of education, income and occupation, but may also be viewed as one's social class and perceptions, where issues of power, privilege and control are emphasized (Ruiz, Steffen, & Prather, 2012). While specific data were not collected at the individual level in this study regarding these factors, research in

the arts often cites that individuals may perceive the arts as elitist or accessible only to those of a certain class, status, or expertise, and these barriers play a role in both arts attendance and participation (National Endowment for the Arts, 2015). While the participants in this study were not provided information about the artworks or music, nor that these artworks were recognized masterpieces, the mere framing of these works as "art" when introducing the study may have influenced students' reactions to the stimuli. Further, several professors introduced the author to the participants as not only a doctoral student but also as an educator at an art museum, which may also have influenced students' responses. More research is needed regarding the nature of these perceptual and pragmatic barriers that are often grouped into socioeconomic status so that new approaches to reducing these barriers, such as through education, can be implemented.

Between-subjects design vs. within-subjects design. In order to examine a large number of participants for this study, it was decided that administering tasks to classes of students (group settings) using paper and pencil assessments would yield the most data in the most efficient manner. Given that the tasks were administered either at the start of a class period, or at the conclusion, and that students' time for participation was limited, each student only completed two assessments (an aesthetic measure and the general measure). In future studies, a within-subjects design in which all participants complete all three tasks may provide more nuanced results.

Implications and Conclusions

Experiences with works of art ideally should invoke critical thinking and reasoning (Fiske, 1999; Eisner, 2004; Greene et al., 2014). However, individuals hold tacit beliefs about

knowledge and knowing that may influence the extent to which they exercise those thinking skills in aesthetic contexts (Perry, 1970; Kuhn, 1991; King & Kitchener, 1994). The results of this study provide further support that most individuals (particularly those of lower socioeconomic status) most often do not apply criteria when making judgments in the arts, but rather they consider these judgments to be ones of personal preference or taste.

The implications of this finding are broad, particularly with respect to the development of effective educational practices. For example, should educators provide more metacognitive supports in their instructional methods such that students consider epistemic issues and the criteria that they apply in the justification of their judgments? If instructional approaches have the potential to influence epistemic beliefs, are there opportunities to make teaching practices more explicit so that students are aided in developing, applying, and becoming more explicitly aware of criteria that can be brought to bear on their artistic judgments?

With the recent emphasis on critical thinking and reasoning skills in arts education, educational supports for these metacognitive "habits of mind" have become popular among schools and educators (Costa, 1991; Tishman & Palmer, 2005; Ritchart, 2007). However, the extent to which these strategies are effectively applied in the arts and how these strategies may support students' epistemological understanding are still open questions. Similar to many educational interventions, utilizing these metacognitive practices from an early age and throughout one's education is critical, particularly as the literature in epistemological understanding provides evidence that the majority of individuals are Multiplists by adolescence, and that most remain Multiplists into adulthood.

Another central question remains as a result of these findings: Why does it tend to be easier to develop and apply criteria in visual art and the general domain than in the music

domain? Two possible answers to this question are time and tangibility. As visual art (e.g., a painting) often remains fixed and permanent in time, and is a concrete, physical object, individuals may easily refer back to it as needed to re-experience the work and find evidence to support their judgments. Similar to writing literacy, individuals are essentially able to "point to the text" to support their ideas and conclusions. This is more difficult in music, given that a musical work unfolds over a period of time, and is invisible. Therefore, it may be more difficult to re-experience music and point to evidence in the same way as the visual arts.

Another factor that may influence the degree to which individuals make judgments about artworks using criteria is one of pleasantness. While pleasantness of an artwork (or musical work) was not measured in this study, a number of subjects cited pleasantness (or harmony in the case of the musical works) as a factor in their judgment of the works. Although not a component of the formal data analysis, a majority of all participants preferred Painting A or Music A (the two most "pleasant," or harmonious works) when asked which work was better in their view. Anecdotally, during the administration of the assessments, students did not react in a notable way when shown Painting B (the abstract work), but often did react strongly when hearing Music B (the free jazz work). Reactions included laughter, raised eyebrows, perplexed facial expressions, and students shaking their heads. Given these reactions noticed by the author, perhaps individuals have a higher degree of tolerance for "unpleasantness" in the visual medium than the musical.

Therefore, when considering educational approaches to teaching the arts with an aim to developing epistemological understanding, it may be beneficial to begin with visual art as an entry point, particularly with visual art exemplars that are "pleasant" or harmonious as students develop their critical thinking skills. Using this scaffolded approach, artworks that are

"unpleasant" could then be gradually introduced, using the explicit methodologies of evidence-based reasoning. This could be followed by parallel examples with music, again by using harmonious works as the entry point, followed by more abstract, "unpleasant" works.

So, exactly what types of pedagogical practices should be developed in the arts to foster epistemological understanding? Although inquiry-based teaching in the arts is often cited as the prime vehicle for developing students' thinking skills (National Coalition for Core Arts Standards, 2014), this is applied to the PreK-12 audience and not the young adults that participated in this study. The two college courses that were completed by the High Expertise participants (art humanities and music humanities) were described in the course catalog and syllabus as not a historical survey, but an analytical study of a limited number of works, teaching students how to look at, think about, and engage in critical discussion. However, it was the anecdotal experience of this author when visiting the classrooms that there was often a large focus on lecture. A more participatory, inquiry-based approach to teaching, combined with explicit metacognitive methodologies that underscore how meaning is made in the arts, may allow students more opportunity to develop their skills in making judgments in the aesthetic domain.

In addition to implications for educational practice, there are also implications for arts institutions, and particularly those that are perceived as "knowledge sharing institutions" such as museums. Many art museums, particularly those founded in the late 19th century in the United States, have mission statements that place an emphasis on collecting, researching and "sharing knowledge" with the public. Even the more recently revised mission statement of the Metropolitan Museum of Art in New York re-inscribes the notion that knowledge is a construct that already exists and is shared with the public by the museum, rather than one that is created by

people: "The Metropolitan Museum of Art collects, studies, conserves, and presents significant works of art across all times and cultures in order to connect people to creativity, knowledge, and ideas" (Metropolitan Museum of Art, 2015).

Other arts institutions and museums are taking a different approach: to provide individuals with participatory experiences that are explicit about the individual's role in meaning-making. Two examples are the Dallas Museum of Art's Center for Creative Connections (TX), in which museum visitors of all ages are guided through hands-on artmaking and meaning-making activities, and orientation galleries, such as at the Huntington Library and Museum (CA), that provide visitors with resources and activities about the many ways of making meaning from objects in the collections. Museums would do well to make these meaning-making activities more prominent and accessible to their visitors in order to underscore that knowledge is constructed through reasoning and is a process that involves the viewer.

In conclusion, more research on the epistemic understanding within certain domains, such as the arts, may aid individuals, educators, and institutions in understanding that they are active agents in shaping knowledge about that domain, rather than simply "appreciating," passively observing, or promoting knowledge as an entity that is pre-existing and fixed. As noted by the artist Marcel Duchamp, "The creative act is not performed by the artist alone; the spectator brings the work in contact with the external world by deciphering and interpreting its inner qualifications and thus adds his contribution to the creative act" (Tompkins, 2013).

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Appendix A: Recruitment E-mail Text

Dear Professor,

I oversee Teaching and Learning at the Metropolitan Museum of Art, and am also a doctoral student at Teachers College, Columbia University. I am conducting a study to fulfill the doctoral requirements for my dissertation. The study examines students' responses to aesthetic stimuli as well as reasoning skills. I am seeking participants and would be very grateful if you would consider having your students take part in my study on an optional basis. The students' participation will require approximately 20 minutes. If you are interested, please contact me at the e-mail address below. You and your students are not obligated to participate.

Appendix B: Consent Form

Teachers College, Columbia University
525 West 120th Street
New York NY 10027
212 678 3000

INFORMED CONSENT FOR PARTICIPANTS IN RESEARCH

Protocol Title: The Domain-Specificity of Epistemological Understanding: Making Aesthetic Judgments

Principal Investigator: William Crow, Doctoral Candidate, 212-650-2292

Dear Potential Participant:

You are being asked to participate in a study that will examine college students' responses to the arts and their approaches to reasoning. You will be provided with a story about two mayors running for office in a troubled city, and then you will be asked to answer several questions on a written questionnaire. Then, you will be presented with two works of art (either paintings or musical excerpts) and will be asked to respond to several questions on a written questionnaire. The entire study will take approximately 30 minutes to complete. This study is being conducted by William Crow, Deputy Chairman of Education at the Metropolitan Museum of Art, who is completing this project as part of a doctorate degree at Columbia University Teachers College in the Human Development Department.

The tasks that will be given to participants are of minimal risk and will not exceed what is encountered in everyday life.

To minimize the risk of a breach of confidentiality, all of the study information will be kept private by being locked in a file cabinet or on a secure laptop computer in the office of William Crow at the Metropolitan Museum of Art. All tasks will include only a participant number and no names. Confidentiality will be maintained, as only the principal investigator and doctorate advisor, Dr. Deanna Kuhn, will have access to the raw data for coding and analysis. All raw data will be kept secure for a period of three years after the conclusion of the study and then destroyed. You will not be identified in any publication or presentation of the study findings. Only group scores will be reported.

Your decision whether or not to participate will not affect your current or future relations with your university and will not affect your grade in any way. If you decide to participate, you are free to withdraw at any time without affecting this relationship. You may also choose to not complete any of the tasks.

PARTICIPANT'S RIGHTS

- I have read and discussed the informed consent with the researcher. I have had ample opportunity to ask questions about the purposes, procedures, risks and benefits regarding this research study.
- I understand that my participation is voluntary. I may refuse to participate or withdraw participation at any time without penalty.
- The researcher may withdraw me from the research at his or her professional discretion.
- If, during the course of the study, significant new information that has been developed becomes available which may relate to my willingness to continue my participation, the investigator will provide this information to me.
- Any information derived from the research study that personally identifies me will not be voluntarily released or disclosed without my separate consent, except as specifically required by law.
- I should receive a copy of the Informed Consent document.

You are encouraged to ask any questions regarding the research to William Crow via e-mail at wbc2108@columbia.edu or 212-650-2292. The Institutional Review Board (IRB) of Columbia University Teachers College has approved recruitment of participants in this research study.

Teachers College, Columbia University
Institutional Review Board
Protocol Number: 16-363
Consent Form Approved Until: No Expiration Date

Appendix C: General Measure (Doug and Chuck Task)

Ana Cruz and **Maria Diaz** are running for mayor of their troubled large city. Among the city's problems are high housing costs, teen crime, traffic, school dropout, and unemployment.

Chuck and **Doug** are TV commentators arguing about who is the better candidate. Chuck thinks Cruz is better and Doug thinks Diaz is better.

Here is some information about **Cruz' positions**. She promises to:	Here is some information about **Diaz' positions**. She promises to:
• create job training programs • expand city parks • raise teachers' pay • open walk-in health clinics • reduce rents • impose a teen curfew • employ senior citizens in city schools	• improve public transportation • open more centers for senior citizens • revise the high school curriculum • build a new athletic stadium • improve health care • build more housing

Can anyone say for certain that Chuck or Doug is more right?

Yes _____ ***No _____***

Why or why not?

Can anyone say for certain that one of the candidates is a better candidate than the other?

Yes _____ ***No _____***

Why or why not?

Which one do <u>YOU</u> think is the better candidate (circle one)?

Cruz ***Diaz***

What makes that candidate better?

<u>Your information:</u>

Gender: _____ **Age: _____**

Appendix D: Visual Art Task

Robin and Chris compared the two paintings that you see. Robin says <u>Painting A</u> is better, and Chris says <u>Painting B</u> is better.

Can anyone say for certain that Robin or Chris is more right?

Yes _____ ***No _____***

Why or why not?

Can anyone say for certain that one of the paintings is a better painting than the other?

Yes _____ ***No _____***

Why or why not?

Which one do <u>YOU</u> think is the better painting (circle one)?

Painting A **Painting B**

What makes it better?

<u>Your information:</u>

Gender: _____ **Age: _____**

Appendix E: Two Paintings used in the Visual Art Task

Durand, A. (1853). *High Point: Shandanken Mountains* [Painting]. New York, NY: The Metropolitan Museum of Art.

Miró, J. (1927). *Animated Landscape* [Painting]. New York, NY: The Metropolitan Museum of Art.

Appendix F: Two Music Samples Used in the Music Task

Music A

Carter, B. (1943). Vine Street Rumble [recorded by Count Basie and His Orchestra]. On *60 Classic Recordings to Celebrate International Jazz Day.* Charly Records [1960].

Music B

Brotzmann, P. (1992). We May All Go Home Now [recorded by Peter Brotzmann]. On *Dare Devil*. DIW Records, [1992].

Appendix G: Music Task

Robin and Chris compared the two musical pieces that you will hear.

Robin says <u>Music A</u> is better, and Chris says <u>Music B</u> is better.

Can anyone say for certain that Robin or Chris is more right?

Yes _____ ***No _____***

Why or why not?

Can anyone say for certain that one of the pieces of music is better than the other?

Yes _____ ***No _____***

Why or why not?

Which one do <u>YOU</u> think is the better piece of music (circle one)?

MUSIC A **MUSIC B**

What makes it better?

<u>Your information:</u>

Gender: _____ **Age: _____**