

TONAL ARTIFACTUALIZATIONS:
LIGHT-TO-DARK IN STILL IMAGERY AND
EFFECTS ON PERCEPTION

By

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KEY TERMS

Aestheticization – making something more beautiful than it is in reality

Artifact – something purposely produced for use or consumption

Artifactualization – digitized creation or re-creation displayed through visual media that conveys meaning

DSLR – digital single-lens reflex camera

Organizational artifact – something produced by an organization

Tonal artifactualization – an artifactualization in which express use of luminance contrast is meant to effect communication

CHAPTER I

INTRODUCTION

This paper begins study on what may appear as a seemingly inconsequential aspect of digital imaging processes, the effect on perception of luminance contrast (levels of light-to-dark) in still imagery. The study seeks data from the following question:

- Would a final adjustment of only, *purposely*, varying levels of *luminance contrast* in an image acceptable for publication have an effect on perception?

The availability of digital cameras and software to edit photos is ubiquitous. What one views in the final rendering of an image could vary greatly or in small degrees from how the image was not only captured, but how it is meant to influence perception. In this regard, this study refers to variation of an image – not the addition, subtraction or placement of that which is pictured.

Whether or not the HVS can *see* a visual image (photograph) is based on straightforward science (i.e., visual spectrum versus infrared spectrum, contrast, and luminance) (Osberger, 1999; Rudd, 2010). *What* the HVS processes from an image, using its related cognitive processes that govern meaning and perception, is an immense area of study by several disciplines including physiologists, medical doctors, social scientists, and psychologists. Visual communication, or what one perceives from looking at an

image, is also an area alive with study (Smith, Moriarty, Barbatsis & Kenney, 2005).

Within this field lies the study of photographs resulting from digitally manipulated data.

Cognitive Framework (Background of the Problem)

In order to frame this paper's intent and to enhance the discussion, a relatively unused term, artifactualization (Carlson, 2000; Monnin, 2009) and a completely new phrase, tonal artifactualization, will be conveyed to the reader. As Carlson (2000) says, artifactualization rhymes with *capitalization*. Study of its relevance, if any exists, will include conducting a quasi-experiment and analyzing data using a repeated measure one-way analysis of variance to determine if relationships exist between variables. A chapter on Findings will report the results.

In July 2009, Alexandre Monnin, then a Ph.D. student in philosophy at the Pantheon-Sorbonne University in Paris, France, published a three-page paper that defined artifactualization. In his development of the definition for artifactualization, Monnin (2009) discusses two philosophical constructs, *remediation* and *thingification*. Remediation (as cited in Monnin, 2009) was coined in 1999 and focuses on visual media ranging from paintings to web pages. Remediation posits that views of digitized modern, visual media are influenced by earlier media; while earlier media that has been digitized reshapes the view of posterior media (Monnin, 2009). Remediation then, is a continuous loop of viewing digitized visual media one of two ways – historically, or by standards of the current day.

Lash and Lury (2007) argue that thingification is a philosophy that applies *meaning* to digitized media, thereby applying matter to imagery. In their book *Global*

Culture Industry: The Mediation of Things, Lash and Lury discuss Pixar Inc.'s movie, *Toy Story*. In this case one must realize that *imagery* is not interchangeable with what we know to be a *picture*. The researchers used thingification to give meaning to the digitized media. In *Toy Story*, the digitized media is the computer generated characters. Monnin's (2009) definition for artifactualization – a noun – is a singular term that houses remediation's visual media and thingification's assignment of meaning. Monnin (2009) also posits digitization is not dematerialization, but a broader form of thingification that affects culture and every conceivable aspect of human life.

Thus, philosophical topics like language or ontologies (theories of existence) are “artifactualized,” in other words, they give birth to digital artifacts (the web, tagging systems, computer ontologies...) through which they are re-thought and designed, in other words, re-created (or even simply created sometimes, see *infra*) (Monnin, 2009, p.1).

Artifactualization quantifies two philosophical positions into a single, non-philosophical definition that may reside cognitively as a construct. One cannot physically hold an artifactualization, but given the above information of what an artifactualization represents, one may perceive what it means. An artifactualization embodies a digitized creation or re-creation displayed through visual media that conveys meaning (Monnin, 2009). Photographs, posters, slides for a PowerPoint – anything that is digitized and subsequently re-created for use in visual media – are each artifactualizations. Even though its genesis lies in philosophical discussions of remediation and thingification, an artifactualization is quantifiable because it has digital substance and one can see its representation in the form of an artifact. Whether or not one accepts the argument of what an artifactualization codifies, acceptance is not as important as understanding the word's intended meaning.

Tonal Artifactualizations

This paper is concerned with one *type* or subset of an artifactualization – tonal artifactualizations. A tonal artifactualization is an artifactualization in which the express use of luminance contrast (Rudd, 2010) is meant to effect communication. In other words, there is a specific intent by the artifact’s creator to affect the HVS’s perception by varying areas of light-to-dark. The difference between luminance and contrast, and Rudd’s (2010) luminance contrast, is discussed in the section on **Elements of The Human Visual System**.

Is there importance in discussing artifactualization? Is there a need for a subset of an artifactualization? This paper presents an argument that there is, in fact, a need for such a term as tonal artifactualization because such a specific categorization of visual phenomena may increase visual literacy. The introduction of the term tonal artifactualization may also be an area for future research.

Tonal Artifactualization as Artifacts

Computer-based searches of the World Wide Web and the Oklahoma State University-Tulsa Library database between October 2009 and April 2012 have not yielded any returns for “tonal artifactualizations.” Either the searches to uncover the phrase were not made adroitly enough or there is no published information on tonal artifactualizations. Therefore, absent qualitative or quantitative study and analysis of data, any discussion of tonal artifactualizations is based on an unsupported theory.

An artifactualization is represented in analogue or physical form as a visual artifact (Carlson, 2000; Lash & Lury, 2007). Tonal artifactualizations then would be variations on an artifactualization. What separates an artifactualization from the specific

category of a tonal artifactualization, in theory, depends of two major factors: intent and only adjusting levels of luminance contrast as the final act of rendering. Whoever renders the image does so with the intent to influence perception by purposely manipulating areas of light-to-dark.

Statement of the Problem:

Tonal Artifactualizations used by Mass Media News Outlets may have an Effect on Perception

Although scientific standards for the technical quality of an image exist (e.g. denoising, demosaicking, color saturation and many other aspects) (Hendee & Wells, 1997; Lukac, 2011; Smith, Moriarty, Barbatsis & Kenney, 2005), what an image communicates is dependent on aestheticization. Luminance contrast is one type adjustment. The amount of this specific-variance in a given image can depend on many factors such as the digital single lens reflex (DSLR) system used in its capture and the medium on which the rendered image will be published.

The nature of light and problems associated with recording and translating it electronically requires that the data must be processed. Light that is recorded, digitized and written to a file format, results in a compressed file. When the file is opened and the data is processed to become an image, the opened data becomes an uncompressed file (Lukac, 2011). Physical limitations of data capturing apparatuses, processing limits of computers and microprocessors, and anomalies introduced into the compressed file are each factors that affect the finished image (pp. 136).

The analyzation of data from a quasi-experiment involving an image and its subset of manipulated images, which *only* use varying levels of luminance contrast may

be useful. If comparisons of an image to versions of the same image with varying levels of light-to-dark indicate significant findings, the information may or may not influence the way in which editors, photographers, photojournalists, marketing, and public relations professionals render digital images. Additionally, the existence of statistically significant relationships may be an area for further study.

Rationale

For mass media news outlets, whose over-arching artifacts are print products, the aestheticization of imagery used in editorial content and in-house produced advertisements may have an effect on stakeholders.

Stakeholders are those who work for the organization, those who are connected to it, and those who have an awareness of the organization's existence (Hallahan, Holtzhausen, van Ruler, Verčič & Sriramesh, 2007). Internal stakeholders plan and use aestheticized imagery for publication. External stakeholders consume the imagery through different media on various mediums. Discussion of content – internally and externally – surrounding aestheticized, published imagery rarely singles out levels of luminance contrast (light-to-dark). For advertising, when manipulated by a visual image, external stakeholders likely have no qualms with being manipulated by a visual image (Joy, Sherry Jr. & Deschenes, 2009; Rafaeli & Vilnai-Yavetz, 2004). However, latent attempts to influence perception – either done in ignorance or with specific intent – by internal stakeholders in a news mass media organization fall into the area of framing and second-level agenda setting (Lippman, 1922; Patterson & Wilkins, 2011; Pratkanis & Aronson, 2002).

This study will use a quasi-experiment to measure whether or not a mean difference exists in stakeholder sociological meaning within groups of editorial and advertisement imagery, based only on varying levels of luminance contrast. Data collection will include survey questions and comparisons of the luminance contrast in editorial, and separately, advertisement images. The images compared are artifactualizations (digital pictures) and its subset of tonal artifactualizations (variation of original, with digitally manipulated levels of luminance contrast).

The analogue representation of the artifactualizations and tonal artifactualizations will be aestheticized imagery that represents artifacts produced by and for a mass media news outlet. Thus, the purpose of this study is to determine if mean differences exist between luminance contrast in still imagery (dependent variable) and the affect on perception (independent variable). The main focus of study will measure participant sociological imagination for viewing manipulated editorial and advertisement images using evaluation (value) along a seven-point Likert scale. The general interest questions will use a seven-point Likert scale.

Theoretical Framework

This paper uses a symbolic-interpretive view of organizational culture based on communication theory. Information from published research on organizational aesthetics, visual literacy, and recent theory on the HVS are also used in the discussion. Moreover, the paper uses agenda-setting and subsequent research on framing and priming to express the role imagery may hold in mediating viewer realities. This paper posits that tonal artifactualizations are an additional category to quantify images in which luminance contrast is purposely varied to have an effect on perception.

Assumptions

For the purposes of this study, it will assume that digital photography can produce two-dimensional (2D) images. Digital single-lens reflex (DSLRs) cameras, one type of many available platforms, allow light through a camera's optical system by acquiring a scene and actuating the sensor (Lukac, 2011). The sensor records light in order to produce an image. This function can be accomplished by numerous methods, however, for the purposes of this study it will assume that 2D photography uses DSLRs in the following four-step process:

- Light emanates from or reflects off of an object
- Light refracts through a set of glass, lens-elements (lens) placed in front of an aperture opening that has a set focal-ratio (f-stop), into a camera body that has a set shutter reflex (shutter speed)
- Light impacts a sensor, but only after the light passes through a set of color filter arrays (CFA) that are mated to the surface of the camera sensor (sensor chip) that is either a charge-coupled device (CCD) or complementary metal oxide semiconductor (CMOS)
- Light is electronically converted (digitized) using algorithms and electronically written to a specific type of file system

There are likely many general concepts of what a camera lens' involvement in photography entails, but beyond "pointing and shooting" there is a steep drop in general knowledge of how light is actually recorded in digital photography processes (i.e. depth of field).

Depth of field refers to what is in focus in relation to the foreground and background of the focal point within a scene. Focal point refers to the exact point in a scene on which the camera lens focuses. A shallow depth of field means objects in front of or immediately behind the focal point are out of focus. A deep depth of field describes objects in focus at given distances (including infinity) behind the focal point of the image.

Focal-ratio or the f-stop is the size of an aperture opening (e.g. the variable size of the opening through which light enters a camera). Shutter speed refers to how *fast* or the duration of time that the aperture remains open to allow light into the camera. Various combinations of focal point, f-stop, shutter speed, and sensor sensitivity settings based on the amount of available or electronically generated light; determine what ranges of usable depth of field are available. Sensor sensitivity standards, in relation to DSLRs, are based on the International Standard of Sensitivity or ISO.

Greater detail of the imaging process is contained in following sections of this paper, but knowing the listed fundamentals should help in understanding DSLR imaging. Without exception, a digital image must be processed electronically before it can be viewed.

Outline of the Following Chapters

The remaining chapters will present data gathered on the reality that all digital still-imagery artifacts created by mass media news organizations for editorial purposes and in-house advertisements must undergo aestheticization. Chapter II features a review of the available literature on organizational culture, artifactualizations, the human visual system and computational photography. It also provides an overview of the theories that informed this study. Chapter III covers the methodology used in this study. Chapter IV focuses on the findings and the analysis of data. Finally, Chapter V contains a summary, conclusions, and recommendations that were developed based on this research.

CHAPTER II

LITERATURE REVIEW

A View of Organizational Culture from a Symbolic-interpretive Perspective

Every organization has an “identity” (Hatch & Cunliffe, 2006; Kogut & Zander, 1996). Social science researchers have ample amounts of empirical data supporting the position that the identity of organizations is the result of socially-constructed, organizational artifacts (Davison, 2006; Gagliardi, 1999; Hansen, Ropo, & Sauer, 2007). Two enduring components of an aesthetic approach to leadership are engagement of the senses and the focus on the experiential (Taylor & Hansen, 2005). Leaders in mass media news organizations who rely on their experience in choosing which aestheticized imagery will be published, make their decisions so that external stakeholders will become engaged with their publication. It follows then, that perceptions of an organization by internal and external stakeholders are each partly influenced by artifacts produced from within an organization (Gagliardi, 1999; Hancock, 2005; Hofstede, 2006; Percy & Elliot, 2008). Hatch & Cunliffe (2006), in citing Peter Berger and Thomas Luckmann from their 1966 book, *The Social Construction of Reality*, tell us that “interpretations are based on implicit understandings found in our intersubjectivity (i.e., built between our subjective

understandings).” Put another way, a stakeholder may not interpret something in the same way its producer meant for the viewer to “see it,” because each organizational member has his or her own social understandings. From this foundation, Hatch and Cunliffe (2006) as well as Hofstede, Neuijen, Ohayv and Sanders (1990), afford caution saying to keep in mind that intersubjectivity exists in each of “us” because of culture, and it is wise to account for the purposeful presentation of an organization through artifacts.

In regard to strategic communication, communication research must address both the denotative and connotative dimensions of meaning (Hallahan, Holtzhausen, van Ruler, Verčič & Sriramesh, 2007). What is of particular importance, according to the researchers, is that “meaning creation” occurs among both message creators and message recipients, likely based on some type of relationship between the two. A denotative meaning is the inter-subjectively shared signification of a word, while the connotative meaning refers to all personal feelings and subjective associations related to a symbol (pp. 33). Research by Hansen et al. (2007) and Hallahan et al. (2007) indicates that the connotative aspect of meaning within organizations is powerful in that it is the determining factor in cognition and behavior.

When discussing organization theories, the theories are at first abstract until viewed through the lens of multiple perspectives (Hatch & Cunliffe, 2006). If one possesses the ability to understand, or at least realize, that multiple perspectives on organization theory exist, then the theories will serve useful purposes (pp. 11). Three of the most predominate perspectives on organization theory in communications are found

in the modern, symbolic-interpretive, and postmodern views. Enormous amounts of literature detail aspects of each of these perspectives (pp. 20) but a skeletal framework of each is mentioned here.

The modernist perspective focuses on the organization as an independent objective entity and takes a positivist approach to generating knowledge. The symbolic-interpretive perspective focuses on the organization as a community sustained by human relationships and uses a predominantly subjectivist ontology and an interpretive epistemology. Postmodernism always makes you aware that theories are open to revision and invites you to ask who supports them and why (pp. 20).

The logic of a symbolic-interpretive perspective is based on the belief that organizational realities are socially produced (Hatch & Cunliffe, 2006), and symbolic-interpretivists see structures as human creations. Human beings are dynamic works-in-progress that emerge from social interaction, collective meaning making, and modification through the processes of interaction and interpretation (Hatch & Cunliffe, 2006; Thompson & Hickey, 2011). Some of the socially produced visual realities within the organization are artifacts that convey the visual representation, or identity, of an organization. Multiple interpretations of the interactions within an organization exist within a symbolic-interpretive stance (Hatch & Cunliffe, 2006; Hofstede et al., 1990; Warren & Fineman, 2007).

Employing the symbolic-interpretive perspective allows one to engage in macro-level analysis of organizational social interactions using a triangulation process that incorporates meaningful symbols, definition of the situation, and the looking-glass self (Hatch & Cunliffe, 2006; Thompson & Hickey, 2011; Stempel, Weaver & Wilhoit, 2003).

George H. Mead (1863 – 1931) said social interaction, creating, defining, and redefining *meaningful symbols* is an ongoing process. “Meaningful symbols are sounds objects, colors and events that represent something other than themselves, and are critical for understanding social interaction,” according to Thompson and Hickey (2011). Continuing in this symbolic-interpretive vein of viewing organizational artifacts from mass media news outlets, artifactualizations represent objects injected into the social tapestry. Specifically, when an image is published, it becomes part of society (Smith, 2005). Depending on the stakeholder’s cognitive processing, their social interaction with the image entails defining or redefining its sociological meaning, thereby inhabiting Mead’s posit that meaningful symbols are involved in an ongoing process (Eitzen, Zen & Smith, 2009; Hendee & Wells, 1997; Hofstede et al., 1990; Smith, 2005; Thompson & Hickey, 2011).

Thompson and Hickey (2011) cite Thomas and Thomas (1928) that people define social reality through the two-way interaction of give-and-take. According to researchers, once a definition becomes a belief, all future actions in regard to the belief affect interactions. For example, an internal stakeholder who is perceived to have a close relationship with the organization’s power elite may have ascribed (unearned) status as a de facto supervisor (Jackall, 1988). In order for the internal stakeholder to operate in an ascribed status, Head (2003) stipulates that peer-level internal stakeholders must acquiesce to the connotative meanings of suggestions made by the de facto supervisor as to how they should perform their duties. From a sociological aspect, perception is dependent upon several factors including ethnic culture (Hofstede et al., 1990), one’s place in their sub-culture’s social strata, socioeconomic factors (i.e. income, education,

and geographical location), and achieved or ascribed statuses (Lippmann, 1922; Thompson & Hickey, 2011). Here, one can argue, the view of the relationship of their co-worker with the organization's power elite is done so through the peers' use of a symbolic-interpretive perspective (Hatch & Cunliffe, 2006).

Thompson and Hickey (2011) define socialization as a process in which one learns and internalizes attitudes, values, beliefs, and norms of culture in the development of self. Immediately after birth in all societies, the first major agent of socialization for many is one's family genetic characteristics, physical environment, and that learned from other family members (Cherry, 1994; Thompson & Hickey, 2011). Other agents of socialization include school, religious organizations, peers, and the mass media (Lowery & DeFleur, 1995; Stempel, et al., 2003; Thompson & Hickey, 2011).

Personality, or how one is, is fertilized in varying degrees by agents of socialization. Mead (1934) contends that personality is multidimensional, the result of powerful social forces upon an individual during one's socialization process. That people interpret stimuli, according to Mead, is what differentiates humans from animals. Further, from an epistemological symbolic-interpretive stance, Mead's influence by Cooley's (1902) looking-glass-self provides additional information on processes within socialization.

Cooley holds that a three-step process occurs when one imagines self. Step No. 1 involves one's imagination of how they appear to others; step No. 2 is the imagination of their judgment of that appearance and in the concluding step; and in step No. 3 one develops feelings on the responses to the imagined judgments (Cooley, 1902). The

mind's eye, then, is the cognitive process through which one views self, based on sociological forces.

During the late 1800s and continuing into modern times, seeking to measure one's place in society finds researchers relying on social structure (i.e. economic distribution, power), books, newspapers, magazines, and diaries (Eitzen, et al., 2009; Stempel et al., 2003). The words and images contained in the material being researched are interpreted along theory-based viewpoints. Additionally, social scientists conduct ethnographic interviews within a qualitative design to measure the social construct within culture (Thompson & Hickey, 2011; Stempel et al., 2003). Similar to Cooley's looking-glass-self, researchers then use a symbolic-interpretive sociological imagination to form a picture of culture within the related society (Thompson & Hickey, 2011; Eitzen et al., 2009).

Consider one's mores from a communication theory perspective in which organizational aesthetics and sociological culture lend themselves to what artifacts make it into print.

Using the listed factors of the symbolic-interpretive approach to organizational structure, visualize the following:

A group of college-age, female cheerleaders are wearing the authorized cheerleading uniform. On a game day, the cheerleaders are allowed to wear their uniform to classes. Typically, part of the uniform includes a skirt where the length falls somewhere around mid-thigh. A reporter assigned to cover the game at the school takes a picture (artifactualization) of three uniformed cheerleaders walking from the library to their classes. The photographer returns to his office to render (develop) the artifactualization.

Now, consider the newspaper's sports editor. Prior to publishing the aestheticized artifactualization as an organizational artifact, the editor must decide how much of an aestheticization process to apply to the artifactualization.

- Does the editor publish the rendered artifactualization as recorded and translated to the camera's memory disc – no aestheticization?
- Does the editor use one rendering of the artifactualization – now an artifact – for print, the web, and any videos? In other words, he does not tweak variations of the artifact depending on which medium it is published.
- What sociological judgments might the editor have of the photo itself?
- Does the editor consider the affect on perceptions of external stakeholders' view of the university's societal standards?
- Will the aestheticization of the artifact affect stakeholders' perception of quality of cheerleading ability?

How organization theory, aesthetics, and meaning overlap each other in the aestheticization of organizational artifacts has yet to be fully researched (Joy et al., 2009; Moninn, 2009; Warren, 2005).

Mediated Realities

Mass communication theory on agenda setting and framing (McCombs & Shaw, 1972) addresses how external stakeholders receive selective information via mass media and are thus primed on what to think is important with regard to news (Bugeja, 2008; Hatch & Schultz, 2002; Lippman, 1922; Lowery & DeFlur, 1995; Petersen & Powers, 2008; Pratkanis & Aronson, 2002). In 1922, Lippman's *Public Opinion* introduced the concept of agenda setting on which issues the press cover and the affect the coverage has

on what people think *about* any given issue. The principal outlines of this influence began with a chapter titled “The World Outside and the Pictures in Our Heads” (McCombs, 2004). “As [Lippman] noted, the news media are a primary source of those pictures in our heads about the larger world of public affairs, a world that for most citizens is “out of reach, out of sight, out of mind,” according to McCombs. Lowery and DeFleur (1995) join Austin and Pinkerton (2006) to say that framing refers to how the issues are physically presented in terms of their placement in media.

In *How to Watch T.V. News*, Postman and Powers (2008) give their view on television news and its ability to frame one’s thought processes.

In their examination of TV news as a commercial, for-profit industry, the authors provide the following eight criteria suggesting how people should filter TV news:

- In encountering a news show, you must come with a firm idea of what is important
- In preparing to watch a TV news show, keep in mind that it is called a “show”
- Never underestimate the power of commercials
- Learn something about the economic and political interests of those who run TV stations
- Pay special attention to the language of newscasts
- Reduce by at least one-third the amount of TV news you watch
- Reduce by one third the number of opinions you feel obligated to have
- Do whatever you can to get schools interested in teaching children how to watch a TV news show

The point at which a television broadcast airs news or a feature piece, what section in print an article is placed, and at what location text and imagery are placed on a web page each embodies examples of framing.

Non-reality, Artifactualization Aestheticization

It may be difficult or impossible to completely understand the extent to which organizational identity is linked to the visual depiction of the organization via its artifacts.

The impact these artifacts have on the social fabric of culture is reflexive. Strati (1992) and Gagliardi (1999) hold, whether it is intentional or not, the extent to which we view our own identities is reflective of how we, as students of contemporary organizations, view socially constructed reality.

Organizations include motives in the construction of their artifacts, and their refinement may be accidental or based on underlying reasons (Strati, 1992). The way in which an organization constructs its artifacts – the components – when assembled make up the entire artifact. It is the whole artifact to which Warren (2005) speaks.

Artifacts produced may exist as a necessity for the organization to function (i.e. letterhead, annual reports, and logos), and the aesthetic nature of such items effect how the organization is viewed and how the organization's employees are managed (Warren, 2005). Additionally, an artifact may convey the identity of an organization via media, while the interpretation of the conveyed information is heavily influenced by one's social and workplace culture (Hofstede et al., 1990; Jackall, 1988; Pittard et al., 2007; Thompson & Hickey, 2011). Harper (2002) discusses his use of photo elicitation to study the empirical qualities of including photographs as a means to elicit more engaging responses to research questions. His study made comparative measures of the ability of photographs to evoke responses to questions during interviews against responses to written questions.

It is established that recording the exposure of light onto a photosensitive surface is photography. Little in literature discusses the effect of recording exposure of light – the tonal quality of an image – as it relates to the cognitive effect people experience when they view artifacts (Witkin, 2009). Copley and Haefner (2009) discuss the relative lack

of study by scholars of communication on literacy levels concerning what is contained in digitally constructed photographic images.

There are emerging amounts of literature and studies that discuss the focus of the aesthetic experiences of internal stakeholders, researchers, and the “sensual methodologies” used to gather empirical data (Taylor & Hansen, 2005; Warren, 2002, 2004 & 2008). Samantha Warren, Ph.D., studies organizational aesthetics, processes of material and cultural aestheticization, visual research methods, and arts-based management initiatives (Warren 2008). In response to inquires with regard to visual studies in organization environments involving levels of light, Warren stated:

Your conceptualization of aestheticization as ‘not a bad thing’ chimes with my experience of researching it from an employee perspective... although employees did feel they were being manipulated and saw the 'artificial' nature of the changes (I researched 'fun' office environments) they also enjoyed the value that management placed on them by 'allowing' them to have a nice place to work. Interestingly, in that data they did seem to place a great deal of importance on their desk being near a window, and several spaces were described as being nice because they were light.... interesting (personal communication, Oct. 27, 2009).

Warren also said, “but none of these people explicitly look at light – so I think that will be really interesting as there are many cultural (and economic) associations with light.”

Semiotics, meaning communicated through signs and images, also has a role in discussing and defining, to some extent, the aestheticization process which Hancock (2005), citing Gell (2002), calls this the “technologies of enhancement.”

Non-reality is also seen in the aestheticization of everyday life, politics, sex, and social concerns (Gagliardi, 1990). Novak (2006) says to the extent that symbols make up the cultural situations we inhabit; then, our picture of reality is rooted in the symbolic-cultural environment. More broadly, aesthetic perception provides a way of apprehending

or illuminating some dimension of lived experience. With knowledge communicated and acquired aesthetically, questions of truth and falsity simply do not apply (pp. 11). From Novak's perspective, presentation through non-reality or aestheticization is neither good nor bad, it is manifest. However, to what extent or by what means the illumination provides access to a dimension of lived experience is not addressed.

As the cost of technology designed to manipulate visual artifacts becomes affordable to more people, the agency users may exercise – in relation to its availability – might create new realities through imagery (Witkin, 2009).

Intent and Meaning

The *intent* by the organization to effect communication via tone within a visual artifact is the deciding factor on whether or not an artifact reflects a tonal artifactualization or is simply an artifact (Rafaeli & Pratt, 2006; Rafaeli & Vilnai-Yavetz, 2004; Warren & Fineman, 2007). If an organization intentionally uses luminance contrast in the production of their imagery to affect perception, could one view their actions in similar fashion to how a mass media outlet engages in agenda setting and framing?

From a sociological perspective, perception is dependent upon several factors, including ethnic culture (Hofstede, Neuijen, Ohayv & Sanders, 1990). One's place in their sub-culture's social strata, socioeconomic factors (i.e. income, education, and geographical location) and achieved or ascribed statuses have major influence on their perceptions (Lippmann, 1922; Thompson & Hickey, 2008).

Theory on the aestheticization of organizations includes the position that the perceived identity of an organization cognitively registers in the minds' of stakeholders, based in part on the visual interpretation of the artifacts an organization produces (Butts,

1963; Hancock, 2003, 2005; Rafaeli & Vilnai-Yavetz, 2004; Strati, 2002, 2005; Strangleman, 2008). Viewing aestheticization, as the magazine *Art & Popular Culture* (2005) does, aestheticization is representing or depicting something more beautifully than it is in reality. The aestheticization of automobiles for example, may be visually represented in a television commercial where an automobile is winding through the roads at a majestic location. Conversely, Cohen (1995) speaks on the aestheticization of violence, often called glorifying violence. In this sense, aestheticization may be perceived negatively.

Visualize the image of the enormous rock related to the Prudential Insurance and Investment Co. The company employs approximately 41,000 people in more than 37 countries and territories (Joy et al., 2009). Prudential conducts business in several areas that deal with monetary investments, and the company has several-hundred billion dollars in assets. The company brand's symbol is a "picture of the Rock of Gibraltar," which metaphorically represents longevity and strength (pp. 41). If an actual section of granite rock were located at the entrance of one of Prudential's corporate locations, then the rock would be a physical symbol of the company.

In their study on blending meanings to make sense of images used for advertising, Joy et al. (2009) referred to visual representations of the Rock of Gibraltar related to being used by Prudential for decorative pictures or in advertisements. The visual media, digital re-creations were purposely used to convey meaning and evoke emotion in stakeholders related to the organization. The visual representations, according to the concept discussed in this paper, are actually artifactualizations (Monnin, 2009). In this

case, Joy et al. (2009) posit the intended metaphorical meanings conveyed by the visual imagery are stability and longevity.

Intent and meaning, in relation to artifactualizations, are dependent on aestheticization. Aestheticization is the intentional portrayal of reality or non-reality through an artifact (Gagliardi, 1990; Hancock, 2005; Hatch & Cunliffe, 2006; Witkin, 2009). Organizations produce *things* in a variety of ways, for a variety of reasons. A thing is an artifact. An artifact produced for internal stakeholders might be a memo relating directives for policies and procedures. An example of an artifact meant for external stakeholders would be the end product resulting from the manufacturing processes (Rafaeli & Vilnai-Yavetz, 2004). Defined by Merriam-Webster's dictionary, an artifact is a product of artificial character (as in a scientific test) due usually to extraneous human agency.

Numerous scholars have published collections of scholarly articles using quantitative and qualitative data analysis, and philosophical arguments in regard to artifacts (Gagliardi, 1990; Hancock, 2005; Rafaeli & Pratt, 2006; Rafaeli & Vilnai-Yavetz, 2004; Warren, 2002, 2005, 2008; Witkin, 2009). In a majority of the information, prominence is given to discussing how to analyze and think about the use of artifacts by organizations (Carlile, 2004; Yanow, 1996). By their very nature, artifacts are things produced which may or may not represent reality (Gagliardi, 1999; Hancock, 2005; Percy & Elliot, 2009; Rafaeli & Vilnai-Yavetz, 2004). Hancock (2005) proposes "a method of thinking" about analyzing purposeful aestheticization (pp. 41). Gagliardi (1990) describes an artifact as landscaping of an organization that contributes to their ability to generate particular regimes of organizationally contrived meanings. The designs of organizational

artifacts have the ability to elicit intangible sensations from people (Joy et al., 2009; Percy & Elliot, 2009; Pittard, Ewing & Jevons, 2007; Rafaeli & Vilnai-Yavetz, 2004; Witkin, 2009). In the field of accounting and auditing, research was conducted to analyze the effect of one photograph used for a non-governmental office's cover on an annual report. The practical implications of that research illuminated the way in which photographs highlighted, complemented, and supplemented information more traditionally communicated in numbers and words (Davison, 2006). Davison (2006) also conducted research to identify aesthetic qualities of artifacts created, and the effect they have within an organization.

Sociological, Legal and Scientific Parameters of Tonal Artifactualizations

Theoretically, this paper defines a tonal artifactualization as a subset of an artifactualization. By Monnin's (2009) definition, it is the visual medium creation or recreation. A tonal artifactualization uses the digital application of luminance contrast and its manipulation to affect stakeholders' perception. The resulting artifact, the analogue representation of a tonal artifactualization, is such that the majority of its primary intent to effect communication is based on the variance of luminance contrast in the image.

Though correspondence with Monnin (2009), the researcher describes his seminal concept:

OK, there are two different facets of artifactualization. The first is the becoming-artifact of something that wasn't an artifact at all. For instance, take metaphysical concepts. On a realist account, there are independent entities. Through AI (artificial intelligence) systems and the like though, they are realized in an informational system, which can operate without any direct reference to the aforementioned entities. It no longer counts whether or not they "exist," only "counterpart" need to have a reality. Therefore, they "are" artifactualized (in fact, they even might never have existed...). Then, there is artifactualization as "re-artifactualization," the shift from one

technology to another one, from paper hypertexts to digital ones (A. Monnin, personal communication, Nov. 29, 2009).

The philosophical and ethical aspects of this discussion seek to learn if it is possible that level of light in an image can have a weighty, quantifiable affect on perception. Based on an empirical framework, the plausibility that light level may or may not affect perception could be an area that merits further discussion within sociology and ethics literature.

The nature of evolution provides a rationale or argument for a study. Here, cultural influences do not pertain to genetics, ethnicity or race. Instead, culture has many strata within a society, and it refers to formal and informal groups within different societies and organizations; subordinate to main, hierarchical culture (Hatch & Cunliffe, 2006; Thompson & Hickey, 2011; Eitzen et al., 2009). As culture evolves, mores change (social perceptions within cultures and sub-cultures).

New words are created and assigned meaning based on cultural evolution and other influences. At one time, Victorian-era women who were suntanned were thought to be lower class, while modern society views one who has a moderate suntan as being healthy (Braggs, Braggs & Harris, 2006). Prior to advanced knowledge of modern medical science on the dangers of overexposure to harmful ultra-violet light, one's societal view of bronzed skin for a lady was largely based on cultural perception. So too, across culture and ethnicity, lighter skinned individuals – within each race – are perceived differently than darker skinned individuals in the same group (Butts, 1963; Hall, 1997; Russell, Wilson & Hall, 1993). Based on this information, it may be plausible that the luminance contrast depicting an individual in still imagery affects one's

perception of self, based on their surrounding, culture and society (see figure 1).



Figure 1. Eye photo group.

Issues of race and how ethnicity is portrayed in mass media is not within the scope of this study. However, analyzed data that provides findings on the statistical relationships on luminance contrast, and if it has an effect on stakeholder perception, may prove useful to future researchers.

To date, in terms of specific court rulings that target light level in imagery, very few cases or none at all exist at the municipal, state or federal level, according to Law Professor Joey Senat (Senat personal interview, 2011). Federal and state laws in the United States, however, do afford claims for false light.

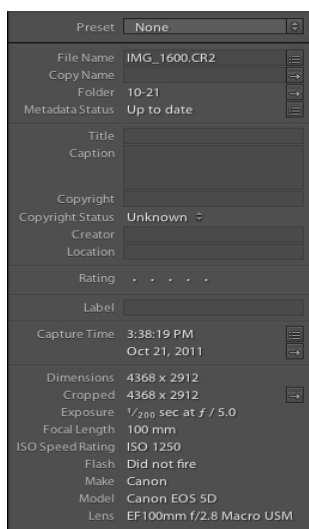


Figure 2. Metadata.

False light is defined as the purposeful or reckless portrayal of an individual to the public in a false light that is highly offensive to a reasonable person (Pember & Calvert, 2008; Senat, 2007). In order for the courts to adjudicate a false light privacy claim in favor of the plaintiff, the criteria in each of the following must be met:

- Publication of material must put an individual in a false light
- The false light would be offensive to a reasonable person
- The defendant acted with actual malice (Senat, 2007)

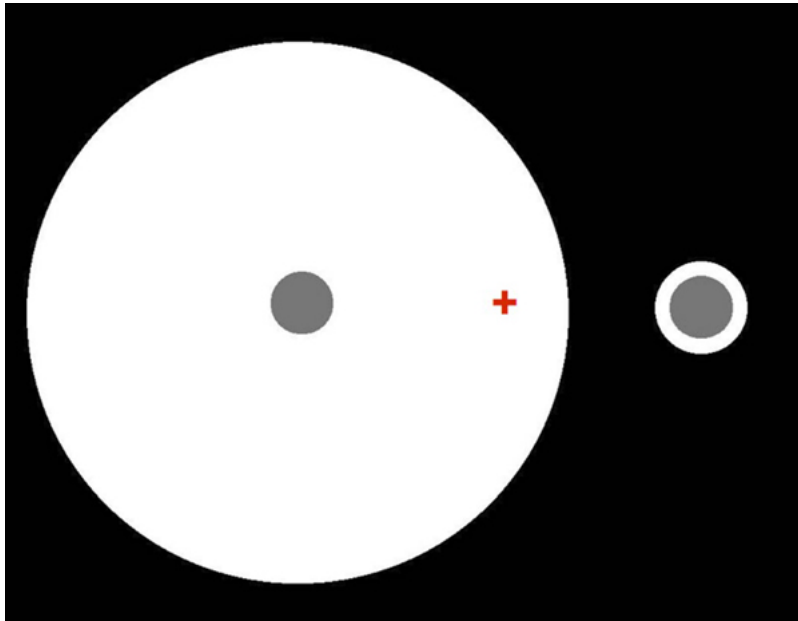
In concrete terms, the *offensive to a reasonable person* standard requires that a person actually say, “That is outrageous” (Pember & Calvert, 2008). Once that phrase is uttered in regard to a published artifact, and someone other than the plaintiff hears it, a plaintiff may bring suit. In regard to such a statement being made about an image – the statement being made based in totality or in part on level of light in the image – Senat said, “The issue has yet to be heard or adjudicated by any court in the U.S., based on current research” (Senat personal interview, 2011).

Special Agent Paul Alvarez, a member of the Air Force Office of Special Investigations, Computer Investigations and Operations, conducted research in 2004 on Extended File Information (EXIF) headers. Metadata, or the electronic file titles that note image-specific functions for DSLRs, is an electronic fingerprint embedded in digital images. From metadata, one may determine if the file – picture – has been modified (*see figure 2*).

A study utilizing a quantitative approach to the affects of tonal artifactualizations on perception may lead to its inclusion in one’s defense or prosecution. This is particularly relevant in that one of the defining elements of a tonal artifactualization includes specific intent to influence.

Elements of the Human Visual System

As it pertains to this study, luminance and contrast are two phenomena that merit clear distinction (Thomas Salmon, PH.D. personal interview, 2011).



(Re-printed with permission) This figure demonstrates the effect of surround size on disk lightness. Fixate on the red cross, and the disk with the larger surround appears darker than the disk with the smaller surround, despite the fact that the two disks are physically identical. The edge integration model accounts for this illusion by postulating that the disk lightness is synthesized in the brain by combining a darkness signal filled in from the

Figure 3. Assimilation contrast.

disk–ring edge with a lightness signal filled in from the ring–background edge. The disk appearance depends on the difference between the two signals. The magnitude of the lightness-inducing signal from the outer border decreases as a function of distance, so the disk on the left looks darker because less lightness is induced in the left disk than in the right disk.

To quantify or begin to increase one’s visual literacy in such a way that one is able to grasp the importance of luminance contrast, consider the experiments of William E. Rudd and the emerging field of visual assimilation.

Luminance is the amount of light (perceived spectral reflectance) of an object and contrast is the luminance of an object relative to its background (Lukac, 2011; Osberger, 1999; Rudd, 2010, Hendee & Wells, 1997). Luminance contrast, Rudd said (pp.1, 2010) in citing several sources, “appears to result from luminances of surfaces that group with the target, either on the basis of Gestalt grouping principles – e.g., contrast polarity, shape, and belongingness – or because the target and comparison surfaces appear to share a common illuminant.” In part, what enables the HVS to determine variations (gradient levels) of contrast luminance results from the detection of edges of objects in an image.

Rudd (2010) conducted scientific experiments and he now posits that the HVS may determine variations in luminance contrast through “visual assimilation.”

“Neurophysiological evidence suggests that the neurons responding to local edge contrast are likely to be located early in the cortical processing stream: in areas V1 and/or V2 (Hubel & Wiesel, 1959, 1962, 1965, 1968; Peterhans et al., 1986)” (Rudd, pp. 30, 2010).

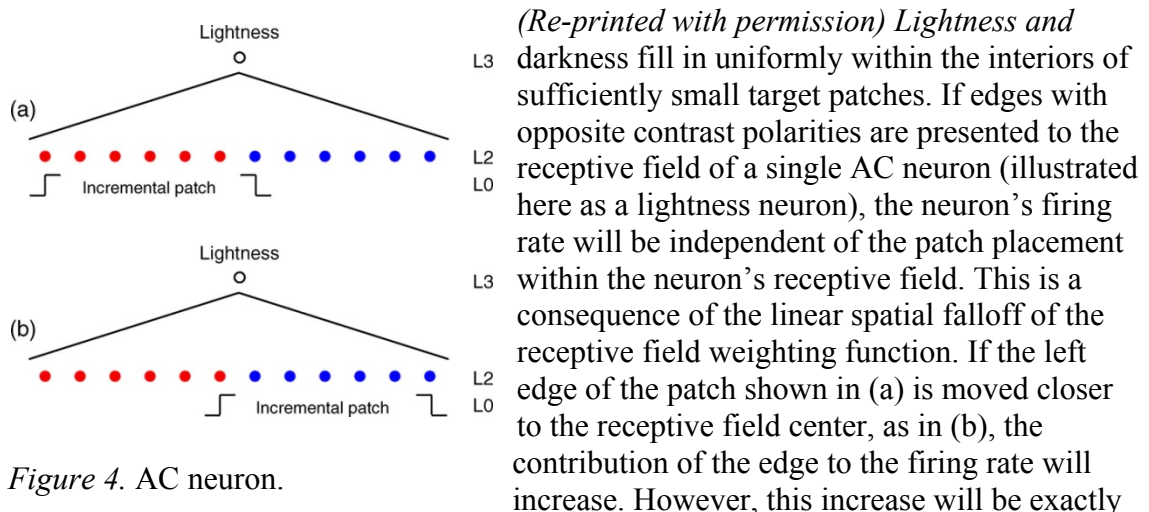


Figure 4. AC neuron.

compensated for by the concomitant effect of moving the other patch edge away from the receptive field center on the other side of the receptive field. An identical effect can be achieved by keeping the location of the stimulus patch fixed while translating the receptive field relative to the patch. Thus, AC neurons whose receptive field centers lie between the locations of the patch edges will fire at equal rates to the patch. For patches whose width is larger than the width of the AC neuron's receptive field, only one edge will excite a given AC neuron and the distance between the edge and the receptive field center will determine the neuronal firing rate. Neurons whose receptive field centers are near the edge will fire at a greater rate than neurons whose receptive field centers are farther from the edge. Thus, when an image region is larger than the characteristic size of the AC neuronal receptive field, lightness and darkness induction strengths will decay with distance from the borders both inside and outside the bounded region.

Additional evidence in psychophysical and neurophysiological science supports the general observation that objects in an image with greater luminance contrast are seen first, when compared to lower contrast items (Formankiewicz & Mollon, 2009; Hendee & Wells, 1997; Henderson, 2007; Osberger & Maeder, 1998; Proulx & Egeth, 2005).

There are physiological, cognitive, and hierarchical processes used in the HVS (Osberger & Maeder, 1998; Percy & Elliott, 2009; Rudd, 2010; Warren, 2002). Tsanov and Manahan-Vaughan (2008) experiments yield data on the HVS's relationship in the creation of memories. The study, *Synaptic Plasticity from Visual Cortex to Hippocampus: Systems Integration in Spatial Information Processing*, cites several neuroscientists. Tsanov and Manahan-Vaughan (2008) posit, "It has been shown that ventral stream [communicative brain process] is also activated during mental imagery of visual objects in the absence of visual input (Kosslyn and others 1995, 1997; Ganis and others 2004; Amedi and others 2005; Newman and others 2005)." This information seems to meld with Monnin's (2009) philosophical position that human beings can "see" even when not looking at something. What is seen, according to Tsanov and Manahan-Vaughn (2008) results from physical stimulus combined with mental processing.

Osberger and Maeder (1998) developed an importance map with regard to what portions of an image the HVS attenuates. Hendee and Wells (1997) refer to this as incremental brightness sensitivity. Research based on behaviors known as the Weber-Fechner law (Stanislas, 2003) indicates that human eye movement over an image is based on the ratio of the luminance of the stimulus with its background (Osberger, pp. 22, 1999; Hendee & Wells, pp. 24, 1997). It is also possible to track eye movements between *just noticeable differences* of luminance contrast and measure how long one's foveal (line of sight) vision remains on each point (Formankiewicz & Mollon, 2009; Hendee & Wells, 1997; Osberger, 1999; Stanislas, 2003; Wang and Ye, 2007; Xie & Stockham, 1989). The luminance contrast then, is highly dependent upon varying levels of light-to-dark (Rudd, 2010) and absent the HVS being able to differentiate contrast "we would lose the ability

to see” (Osberger, 1999, pp. 21). Luminance contrast is not exposure, it is tone (Lukac, 2011). Thus, light can exist without contrast, but shade cannot exist unless there is light. The HVS, according to established science, processes information – in part – based on its ability to move along varying degrees of luminance contrast.

When tests conducted on what points, and for how long, foveal vision remained on varying areas in the image, the researchers arrived at quantifiability (Hendee & Wells, 1997). The ability of one to mathematically quantify a phenomena leads to repeatability. Therefore, continued scientific research on automatic identification of perceptually important regions in an image is repeatable. However, the study had no focus on comparisons of an artifactualization to its subset of tonal artifactualizations.

Osberger and Maeder (1998) cite Yarbus (1967) and Stelmach (1992) who each offer evidence that the eye is not static in viewing an image and many times does not look at the entire image. This is a significant finding because what one is able to physically see, is the basis of what one perceives. From perception, one decides to assign meaning and importance. In her copyrighted, unpublished paper, *Toward a Unified Model of Cognitive Aesthetic Processing*, Emmett (2010) discusses “how and why mediated images, especially the ‘exceptional’ and ‘aesthetic’ images of art and photojournalism, affect us as deeply as they do.” Not only does imagery “affect us deeply,” many scholars including Emmett (2010), Osberger (1999), Tsanov and Manahan-Vaughan (2008), and Rudd (2010) have shown that the affect occurs in seconds, with great effect from light.

Additionally, we know foveal vision in the HVS moves three times a second to different points in an image (Hendee & Wells, 1997; Osberger & Maeder, 1998;

Osberger, 1999; Senders, 1997). Therefore, to see is not solely a biological measure of light, and what we initially observe is many times dependent on luminance contrast within the image. In regard to eye movement, say Osberger and Maeder (1998), the majority of the foveal HVS movement is over areas of varied contrast, or light-to-dark.

Chemical-based Film Supplanted by Digital Camera Sensors

In photography, exposure refers to the overall measurable light transferred via a lens and recorded by film or the digital sensor in an electronic camera (Gloe, Kirchner, Winkler & Böhme, 2007; Leong, Brady & McGee, 2003; Lukac, 2011; Martin, Fleming, Sorkine & Gutierrez, 2008; Raskar, Tumblin, Mohan, Agrawal, & Li, 2006). Both measures – amount of light and the time it is allowed to contact a frame of film or an electronic sensor – are mathematically quantifiable. In this regard, exposure deals with overall levels of light. Where as film records photons of light on silver-based crystals in a gelatino-bromide emulsion, digital cameras capture light on a silicon-based sensor and electronically translate the light into data and compress the information into file format (Emmett, 2010; Fridrich, Lukáš & Goljan, 2006; Osberger, 1999; Raskar, Tumblin, Mohan, Agrawal, & Li, 2006).

Fridrich et al. (2006) tell us, “The sensor is divided into very small minimal addressable picture elements (pixels) that collect photons and convert them into voltages that are subsequently sampled to a digital signal in an [analogue-to-digital] converter.” After the light also goes through additional processing, the digital image is compressed and written to the camera’s memory device in a user-selected image format (Gloe et al., 2007; Osberger, 1999). The format, such as the Joint Photographic Experts Group (JPEG) standard for compression, is a specific mathematical algorithm standard to which the data

are recorded and the compressed files may require additional processing (Fridrich et al., 2006; Osberger, 1999).

Compression must take place, because as Osberger (1999) states, “image and video applications rely on *lossy* compression as the mechanism for reducing the number of bits used by pictures to practical, manageable levels.” Here, lossy means some bits of information are not captured.

For 2D, DSLRs, each camera’s sensor records light in order to produce an image. Defects in a sensor’s quality, loss of light, and other specific anomalies germane to the camera’s sensor, cause it to introduce specific patterns of artifacts into its artifactualization (Fridrich et al., 2006). The artifacts that a particular sensor incorporates into its artifactualization are such that no two camera sensors can produce the exact same group of anomalies. Therefore, a digital fingerprint unique to each digital camera’s sensor exists in imagery produced from that sensor (Lukáš et al., 2005). Evidence indicating what specific camera took a particular image can be found in an image, even after several generations of the image have been produced (Lukáš et al., 2005). Because each camera produces images containing specific artifacts, adjustments must be made to each image. The adjustments – what is referred to as “developing” in chemical-based processes – are rendered into a finished product. However, because the goal is human perception, the color reproduction is complex, says Lukac (2011) in citing Canny (1986) and Shewchuck (1996). Reproducing an image from captured data is not simply an exercise in measured phenomena. In *Computational Photography*, Lukac (2011) provides clear understanding of the three distinct steps included in the breakdown of overall color and tone processing for DSLR camera systems.

The first, white balance, applies gain factors to each color channel of camera pixel values to provide an image with equal mean code values in each color channel for neutral scene content. The second, color correction, converts the white balance image to a known set of color primaries, such as the primaries used for sRGB [standardized red green and blue]. The final step applies a tone [light-to-dark] correction to convert the image to a rendered image suitable for viewing. This is often referred to as the gamma correction although optimal viewing tone correction is rarely as simple as correcting for a standard display nonlinearity (pp. 8).

This description of the common sequence of events in the pipeline of light to a finished image may seem simple, but each step involves a level of mathematics that many will never begin to comprehend (Fridrich et al., 2006; Lukac, 2011; Lukáš et al., 2005; Osberger, 1999; Raskar et al., 2006). Even though the mathematics involved in rendering imagery “suitable for viewing” are quantifiable and repeatable, their application is dependent on the subjective nature of human perception. The tone correction is “rarely as simple as correcting for a standard.” Rendering, then, is highly subjective and given the nature of digital processes, particular aspects of a given image may or may not be emphasized.

Digital camera sales proved the most lucrative for the global photographic products market in 2009, generating total revenues of \$38.1 billion, equivalent to 64.8% of the market's overall value (Datamonitor, 2010). Datamonitor analysts predict a compound annual growth rate of 3.6 % for the five-year period 2009-2014. The expected global market value of \$70.3 billion by the end of 2014 is an indication of the continued use and dependence on digitized imagery. Additionally, technological advance in the digital age will likely progress.

Changing Sociological Interpretations Following Technical Advancement

In the late 1920s, many film actors enjoyed fame as a result of their on-screen character portrayals in silent movies. When sound was added to films, in this case the actors' voice, audiences began to perceive actors and the quality of the actors' performances differently.

Many stars of the silent era with heavy accents and disagreeable voices saw their careers shattered (e.g., Polish-accented Pola Negri, Emil Jannings, Ramon Novarro, Clara Bow, Vilma Banky, Colleen Moore, Rod La Rocque, Gilbert Roland, Nita Naldi, Renee Adoree, Blanche Sweet, Agnes Ayres, and John Gilbert), while others like Joan Crawford, Paul Muni, Greta Garbo, Ronald Colman, Lon Chaney Sr., Richard Barthelmess and Gloria Swanson survived the transition – but elocution lessons from diction coaches became a necessity for some. Other silent stars, such as Mary Pickford, failed to make the transition to talkies and retired in the 1930s. Many new film stars and directors that had to be imported from Broadway would become familiar Hollywood names in the 1930s (Dirks, 1996).

In this case, the audience members' combination of processing auditory signals – the performers' voice – and their own inherent physical and sociological filters may have affected their perception of the actors' ability. Additionally, Dirks (1996) reports that imaging techniques and color saturation affected visual perception (i.e. color or black and white films) and the amount of light used in the process is part of the overall cinematic special effect. Thus, significant change in levels of actors' popularity, benchmarked at the point in history of talkies, may be linked to perceptions of quality. This, then, would be based on audience members' physical ability to hear and their sociological filters through which they viewed ethnic culture during that time period.

Digital imagery, Osberger (1999) says, is superior to analogue, chemical-based photography for several reasons. The electronic capture of information in “bits” allows for the application of an infinite amount of computer manipulation to the digitized

information. Unlike chemical-based film apparatus, digital cameras use a sensor. For 2D, low-definition resolution imagery, light en route to a digital camera's sensor must pass through a lens (Fridrich et al., 2006; Osberger, 1999). Stakeholders, at increasing rates, may have pause to accept the veracity of what is depicted due to convergence of media (e.g. the same image appearing in print, on television, and websites) and the immeasurable alteration combinations available to manipulate uncompressed files – finished images (Fridrich et al., 2006; Gilbert, 2009; Hames, 2008; Luders, M., 2008). Bugeju (2008), along with Patterson and Wilkins (2011), and Kersten (2008), caution that ethical considerations need to be part of the decision-making process. News gatherers and editors are encouraged to carefully weigh the appropriateness or inappropriateness of what is imaged and published, as well as the amount of image aestheticization. No immediate, standard-measure exists for publications and it may be unlikely for the industry to agree on any set-standard.

Evolution of the Image-related Lexicon

According to Webster's Dictionary, we know that new words (e.g. google) are created and assigned meaning based on cultural evolution and other influences. In terms of using the World Wide Web to seek information via a search engine, Webster's identifies google as a transitive verb. However, one is acutely aware that in the vernacular, google is both a transitive verb and a noun. In the case of google being a noun, the word describes an international, U.S.-based information company. Established words and phrases also evolve. In 1922, Lippmann (1922) coined *stereotype* to communicate one's preconceived ideas based on their experience and culture. Originally, Lippmann's (1922) stereotype had neither a negative or positive connotation. The

meaning of stereotype was manifest. Today, stereotype has evolved; it evokes a negative perception to that which it describes. Within sub-cultures, terminology is also perceived along inculcated understanding (e.g. hotwash). To some, hotwash may mean washing something using hot water. In the culture of emergency preparedness, hotwash refers to a briefing post-emergency event (Hotwash, 2009).

Xerox Corp. became widely known in popular culture during the 1970s for its xerographic imaging processes and machines, which produced photocopies of printed documents. No other company name has been absorbed into culture to symbolize its products' specific actions (Ammons, 1999). As a result of the ubiquitous availability of photocopied documents, Ammons (1999) says the corporate name Xerox transitioned to the vernacular to describe a finished product – a photocopy of a document. The same phenomena can be said of Adobe Corp.'s evolving computer software, PhotoShop.

Many people now substitute *photoshopped* to mean the computer manipulation of uncompressed electronic files re-created as visual imagery. According to Meriam-Webster's (2011) online dictionary, PhotoShop is first thought to have been used as a transitive verb, photoshopped, in 1992. The term is a construct codifying light compressed into digitized data, and uncompressed to be manipulated by computer software to create visual imagery. In the late 1980s, PhotoShop creators, John and Thomas Knolls, who are brothers, began writing computer subroutines in order to manipulate digital imagery (Story, www.TheDigitalStory.com, 2000) . Since Adobe Corp. released the first version of PhotoShop in 1990, continual improvements in programming and hardware to process the program now see it in its 2011 version, Adobe PhotoShop Creative Suite 5. The program's ubiquitous application in digital imagery is

so great, new categories of science are needed to determine if imagery has been photoshopped (Gilbert, 2009; Gloe et al., 2007; Hames, 2008).

Research Questions

In rendering artifacts, this paper discusses artifactualizations and its subset of tonal artifactualizations. How pleasing an editorial or advertising image appears in a publication is determinant on many factors (e.g. paper stock, reproduction, location, and image size). How an image is perceived is based on different sets of factors (Gordon, 2004; Hames, 2008). The researcher does not possess the skills to exhaustively study these factors. However, the researcher can begin to seek whether artifactualizations and tonal artifactualizations have an effect on sociological imagination (e.g. how one views life, perception) for editorial images, and product quality in advertising images. This paper posits that tone itself can be artifactualized (Monnin, 2009). Quantifiable differences may exist in perception based on varying tone between artifactualizations and its subset of tonal artifactualizations. Therefore, this study posits the following hypothesis.

H1: Electronically varying only levels of luminance contrast in still imagery will have an effect on perception.

Additional areas of interest to the researcher include the increase in technology with regard to digital imagery, the processes used to make alterations to images and the level of concern one may or may not have surrounding this increase.

Technical Expertise for Digital Photography

RQ1: What level of concern exists for using digital photography equipment and rendering digital images?

RQ2: What level of concern exists for knowledge that an editorial or advertising image has been digitally manipulated prior to publication in print?

Digital Manipulation of Images

Guidance does not exist in current or past editions of the *The Associated Press Stylebook* with regard to photo manipulation. Specifically, well-known, clearly defined guidelines do not exist for specified amounts of computer-enhanced alterations that transition a digital artifact (picture) from that of a photo to some other type of artifact (e.g. a graphic or illustration). Forensic software exists that is able to determine the types of alterations made to electronic data files used to render an image (Raskar et al., 2006; Wang & Ye, 2007). At the time of this study, it is known that The Courts have not adjudicated a case in local, state, or federal court solely on the basis of alteration of luminance contrast levels in a digital image (Senat personal interview, 2011). But, it is unknown what level of relevancy one has toward knowledge that a photoshopped, editorial image is manipulated to appear pleasing in print. It may be likely that photoshopped, as a term, has difference in meaning to various internal and external stakeholders. It is without serious argument that the term, in the vernacular, represents the knowledge that a photo has been manipulated using computer enhancement. This study seeks to gain data from scales measuring feelings about photoshopped, editorial, and advertising imagery.

RQ3: What level of meaning exists for knowledge that manipulated editorial and advertising images appear in the News section of a publication?

RQ4: What level of meaning exists for knowledge of exact information on manipulations for editorial and advertising images in a publication?

Variance in Luminance and differences in Perception

The HVS is highly complex (Osberger & Maeder, 1998), and the transformation of physical stimuli (e.g. amounts of light and luminance contrast) is a cognitive process (Rafaeli & Vilnai-Yavetz, 2004; Tsanov & Manahan-Vaughan, 2008). This is an area well-beyond the scope of this study. However, this research can examine a new area related to digital imagery, new in that literature is non-existent on tonal artifactualizations. Additionally, the body of existing research does not specifically use artifactualization as a term, or that of tonal artifactualization, to measure only variance of luminance contrast. Using data from responses to the following question, the researcher seeks to learn if there is a null effect from rank order of variations of only luminance contrast between versions of the same image.

RQ5: Is there an effect on perception between choices of the artifactualization to a member within its group of tonal artifactualizations, for editorial and advertising images?

RQ6: Is there a difference in perception based on varying levels of luminance contrast between all five editorial photo groups compared to all five advertising photo groups?

RQ7: What do participants think with regard to level of relevancy for editorial and advertising image attribution; PHOTO BY/, versus GRAPHIC BY/?

The dependent variable in this study is luminance contrast.

CHAPTER III

METHODOLOGY

The purpose of this study was to examine organizational culture, communication theory, the human visual system and processes involved in the aestheticization of artifactualizations. The parameters of the examination are based on current literature in organization theory and emerging study that visual artifacts have an effect on the perception of an organization held by internal and external stakeholders (Gagliardi, 1990; Hancock, 2005; Hatch & Cunliffe, 2006; Hendee & Wells, 1997; Monnin, 2009; Taylor & Hansen, 2005; Warren, 2002, 2008; Witkin, 2009).

Institutional Review Board

It is required by Oklahoma State University policy and federal regulations that a review be conducted and approval granted for research studies involving the use of human beings before researchers begin investigation. In accordance with institutional policy, the office of University Research and the Institutional Review Board (IRB) of Oklahoma State University conducted a review of this research study to protect the rights and welfare of human subjects involved in behavioral research. As such, this study received examination and was granted permission for execution. The IRB code for this study was AS1223. A copy of the approval is presented in Appendix A.

The most effective way to measure whether or not the independent variable has an effect on the dependent variable is to conduct a quasi-experiment. The dependent variable is luminance contrast in each image and the independent variable is the affect on perception.

A properly conducted quasi-experiment must indicate if the independent variable or variables – or the interaction between them – have a demonstrated behavior on the dependent variable (Grabe & Westley, 2003; Mertler & Vannatta, 2010; Taylor & Hansen, 2005). Argesti and Finlay (2009) write, “The univariate case of ANOVA is a hypothesis-testing procedure that simultaneously evaluates the significance if mean differences on a dependent variable between two or more treatment conditions or groups,” (p. 67). The use of a repeated-measure one-way analysis of variance will study the effects that one factor has on one dependent variable. The researcher is interested in finding if a mean difference exists in the level of luminance contrast (DV) for various levels of perception (IV).

The measures do not describe or even imply a causal relationship (Mertler & Vannatta, 2010). The quasi-experiment will seek to measure the differences in means with regard to an artifactualization and its subset of tonal artifactualizations. The study also will attempt to measure the differences in means of product images between an artifactualization and its subset of tonal artifactualizations.

The Predictive Analytics Software (formerly SPSS) will be used to analyze collected data for repeated-measures one-way ANOVA. The study will use the one-way ANOVA to compare the mean ratings for responses to general questions on digital photography equipment, and image rendering. The ANOVA will compare the mean

ratings for levels of concern between two groups for responses to questions on techniques in using editorial and advertising imagery. Research on artifactualizations and tonal artifactualizations will utilize repeated-measures ANOVA to compare the mean ratings for perception of luminance contrast in each of the five photo groups for editorial and advertising. The following section explains the measures used in this study, as well as the data collection process.

Quasi-Experimental Design, Online Survey

The researcher first conducted a pilot study to test the survey instrument. For the pilot study, the researcher ensured that participants had a cognitive understanding of terms by using a manipulation check including the following items:

- Inform participants that there is no correct or incorrect choice for each group of artifacts
- Allow subjects to refer to artifacts as pictures, images or photographs
- Allow for social considerations that include words and images as language

The pilot study allowed participants to take the survey, to include both E-ATAG and A-ATAG sections of image comparisons. The pilot study group consisted of 25 volunteers selected by convenience from a coffee shop in Broken Arrow, Okla. and Oral Roberts University, Tulsa, Okla.

- The participants answered the written survey questions and viewed the E-ATAGs and A-ATAGs
- Both the E-ATAGs and A-ATAGs contain human subjects
- The E-ATAGs are images that have appeared in print versions of the Broken Arrow *Ledger Community Newspaper*

- The A-ATAGs are photos used in print advertisements for the Heat Seat, LLC
- The participants viewed the E-ATAGs and A-ATAGs and made their selections

After a successful pilot study, the researcher posted a link to the online survey. The survey utilized Oklahoma-based, community newspapers owned and operated by Community Publishers, Inc. Community Publishers, Inc., 900 S.E. Fifth St. Suite 22, Bentonville, Ark., is the parent company for Neighbor News Corp., 524 S. Main St., Broken Arrow, Okla. Neighbor News corporate offices house the Broken Arrow *Ledger Community Newspaper*, for which the researcher is Managing Editor. Prior to becoming the Managing Editor in February 2012, the researcher served the previous five years at the *Ledger* as Chief Photographer.

A link to the survey was posted on nine CPI newspaper websites for 48 hours, inviting site users to participate in a survey. During this time ($n = 388$) subjects began the survey. Incomplete responses were thrown out for a total survey size of ($n = 201$). Thus,

Table 1

Oklahoma CPI Newspapers

Publication	Website
Broken Arrow <i>Ledger</i>	BALedger.com
Catoosa <i>Times</i>	CatoosaTimes.com
Collinsville <i>News</i>	TheCollinsvilleNews.com
Coweta <i>American</i>	CowetaAmerican.com
Mannford <i>Eagle</i>	MannfordEagle.com
Owasso <i>Reporter</i>	OwassoReporter.com
Sand Springs <i>Leader</i>	SandSpringsLeader.com
Skiatook <i>Journal</i>	SkiatookJournal.com
South County <i>Leader</i>	SouthCountyLeader.com
Wagoner <i>Tribune</i>	WagonerTribune.com

this study relied on convenience sampling. There were no incentives offered for participation in the survey and participants were not told that the only difference between the artifactualization and its subset are gradations of luminance contrast. Prior to the



Figure 5. Posted Survey link.

responses because many of the survey questions specifically ask level of perception with regard to editorial imagery.

The study did not use a control group because the artifactualization (originally published image) is the control photo for each set of tonal artifactualizations. Participants selected their level of perception with regard to questions of importance for various items, procedures and practices, and viewed each E-ATAG and A-ATAG and made choices accordingly (see figures No. 7 & 8).

The measure only indicates if mean differences exist. The results are published in the Findings section of this report.

Procedure. Methodological procedures should include random assignment of subjects and random order of exposure to stimuli (Grabe & Westley, 2003). The sample size should include a control group and any other level of control to isolate the

beginning of rating, participants were primed to freely participate in a study on visual communication. The link posted on newspaper websites also accounted for the study's internal validity because participants became part of the experimental group by chance. The fact that the link to the survey appeared on newspaper websites, sites that contain hard news, supports the credibility of participant

“phenomena” of interest (pp. 268). This research will utilize a pilot study to ensure the phenomenon of interest was isolated. It would be difficult if not impossible to measure individual, cognitive thought processes in the scope of this discussion (Gordon, 2004; Hendee & Wells, 1997). It would be equally difficult to ask participants in any quasi-experiment to conduct forensic tests for digital manipulations of visual artifacts and definitively state whether or not any manipulation was used (Gloe et al., 2007).

Stimuli and Variables

Survey questions asked participants to rank their level of perception with regard to terms, procedures and equipment relating to the capture, rendering, and photo credit of published editorial and advertising imagery. The stimuli, visual artifact samples for this study, are grouped by artifactualization and subsets of tonal artifactualizations. The imagery has been printed in editions of the *Ledger*. The editorial sample images ($n = 25$) contained the following subject matter: human ($n = 5$), animal ($n = 1$), and commercial products ($n = 1$). The advertising sample images ($n = 25$) contained the following subject matter: human ($n = 8$) and commercial products ($n = 9$). The images ($n = 50$) were analyzed for their effect on perception.

Every photo, in each photo group must be rank ordered. The only difference between each variation of a photo is its luminance contrast.

Independent Variable. The survey used a modified Evaluation (Value) scale from volume II of the “Marketing Scales Handbook; A compilation of Multi-Item Measures.” The Evaluation (Value) scale has a reliability alpha of .89 (Bruner, 1998). “The Evaluation scale is a seven-item, seven-point semantic differential scale measuring the degree to which one evaluates a stimulus (such as a product) as being relevant and

meaningful to oneself,” according to Bruner. The products in this study are the artifacts produced by the mass media outlet. The scale was modified to a five-point semantic differential scale to rank order of each image for the E-ATAGs and A-ATAGs.

The seven-point modified scales that measured the IV consisted of the following: Of no concern to me to Of concern to me ($n = 5$); Means nothing to me to Means a lot to me ($n = 6$) and Irrelevant to Relevant ($n = 6$). Five-point modified scales each measured the E-ATAG with Means nothing to me to Means a lot to me ($n = 5$); the A-ATAG with Irrelevant to Relevant ($n = 5$).

Coding procedure. The position of the artifact in each photo group frame varied in each E-ATAG and A-ATAG (see figures No. 7 & 8). Collected data was recoded in order to place participant responses in the same, relative variable position so that SPSS could perform a repeated-measures one-way ANOVA.

Training and reliability. The researcher was trained in recoding through a series of sessions over a three-week period with an Oklahoma State University professor who teaches quantitative methods of research statistics. The instructor reviewed 20% of the recoded data and found no errors. Additionally, a second coder verbally verified each researcher data entry at the time it was entered, and a third coder visually checked the recoded data entries.

Dependent Variable. One of the main ways in which one can make decisions is from the ability to see the object on which a decision is based. The dependent variable in this study is luminance contrast in the E-ATAGs and A-ATAGs.

The photo groups appeared onscreen in a horizontal orientation during the survey. Group photo variations were placed side-by-side in a frame with no outside border, sans a partition between images (e.g. artifact, X+1, X+2, X-1, and X-2).



Figure 1. Eye photo group.

The order of the positions of each variation demonstrate the following luminance contrast levels: X+1, X-2, X-1, X+2, and artifact.

For control in all E- and A-ATAGs, the original artifactualization is as it appeared in print. Images in the tonal artifactualizations – the subset – *only* vary in luminance contrast (levels of light-to-dark). Regardless of the luminance contrast in the original artifactualization, luminance contrast for each subset had the same degree of manipulation (e.g. with luminance contrast being “X” amount, photos in each subset varied in increments of X+1, X+2, X-1, and X-2).

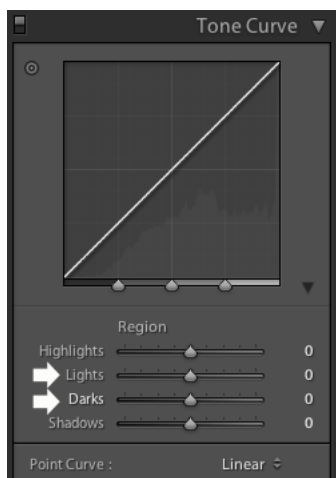


Figure 6. Tone curve.

Controls for the increase or decrease of luminance contrast in Adobe Lightroom 2.0 software allows one to adjust levels using Lights and Darks (white arrows). From zero (0), each adjustments has four marked increments – minus and plus. Adjustment is based on percentages of the image’s original luminance contrast at the time it was captured. Incremental level adjustments do not uniformly match percentage between separate photos. For this study, “X+1” and “X+2” means moving both the light and dark sliders one and two increments, respectively, to the right. For “X-1” and “X-2,” both sliders are moved one and two increments, respectively, to the left.

It is important to note that the artifactualizations and tonal artifactualization used in each E-ATAG and A-ATAG will retain their original metadata (Alvarez, 2004). Each E-ATAG will contain items depicting editorial artifacts

published in the Broken Arrow *Community Ledger*, and each A-ATAG will contain artifacts of a chair produced for The Heat Seat, LLC.

Main Quasi-Experiment

The main purpose of this study was to learn if a measurable difference exists in the level of stakeholder sociological meaning for editorial and advertisement imagery, based only on varying levels of luminance contrast. The researcher also hopes to learn what level of importance general users of digital photography equipment and rendering techniques hold with regard to personal preferences.

An artifact is something purposely produced for use or consumption; an organizational artifact is something produced by an organization. The aestheticization process of an artifact can make it more beautiful than it is in reality. An artifactualization is a digitized creation or re-creation displayed through visual media that conveys meaning (e.g. a digital photograph or computer generated piece of art). Tonal artifactualizations are a subset of an artifactualization in which express use of luminance contrast is meant to effect communication.

Design. A within-subjects, repeated-measures, of one-way analysis of variance design was used. All participants were exposed to each of the conditions in EDITORIAL and ADVERTISING groups consisting of five photo variations for a quasi-experiment. Participants were exposed to comparisons of the luminance contrast in the E-ATAG, and separately, A-ATAG. In each of the E- and A-ATAGs, the only variable that changed between each tonal artifactualization was the interval of luminance contrast in the artifact. Specifically, in each E-ATAG, an artifact represented the control – the original

photo published in print is the artifactualization, and the remaining four artifacts represent tonal artifactualizations (see figures No. 7 & 8).

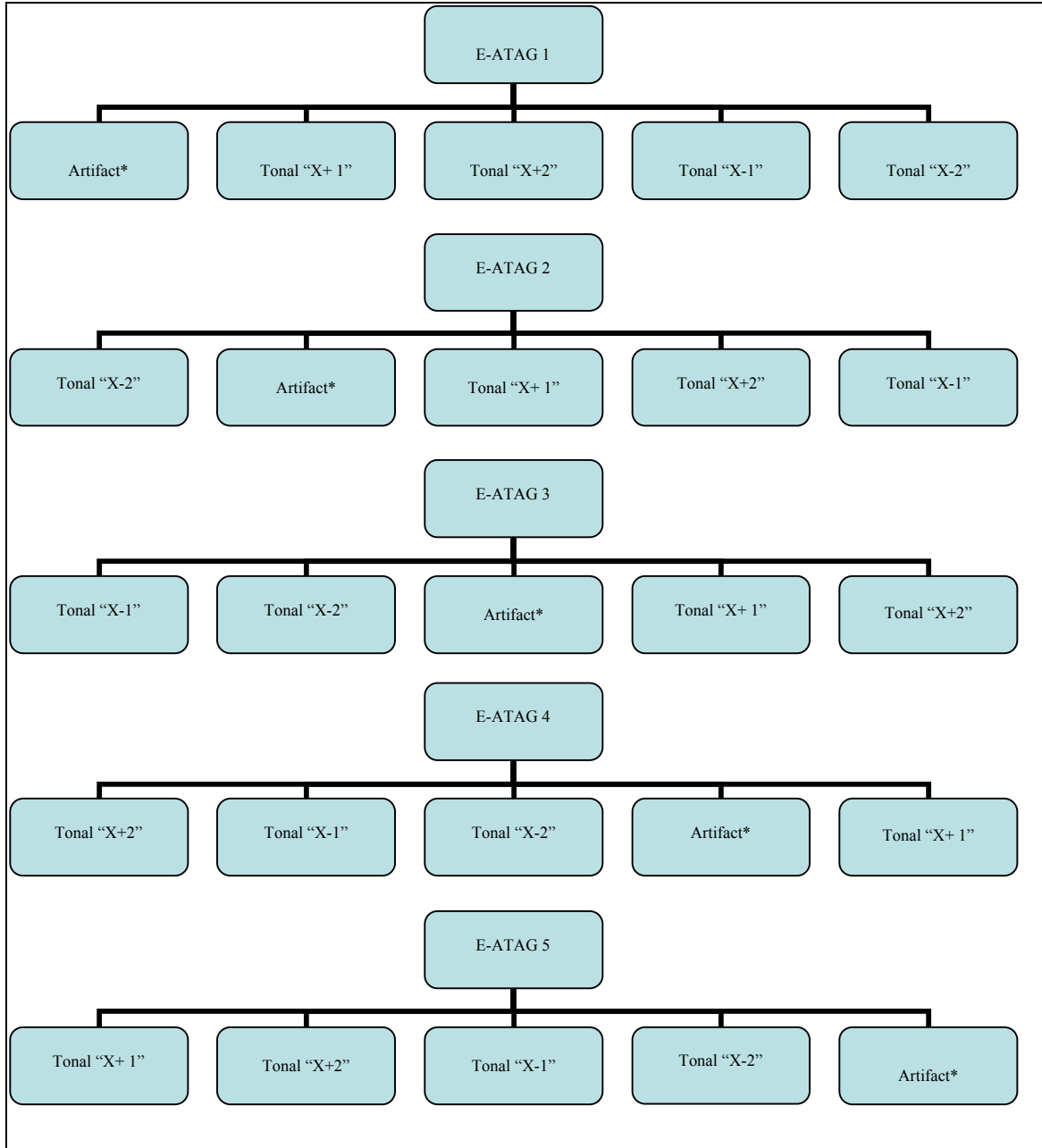


Figure 7. Editorial-Artifactualization Tonal Artifactualization Group. Each E-ATAG depicts a virtue, human subject or scene.

* Indicates Artifact position.

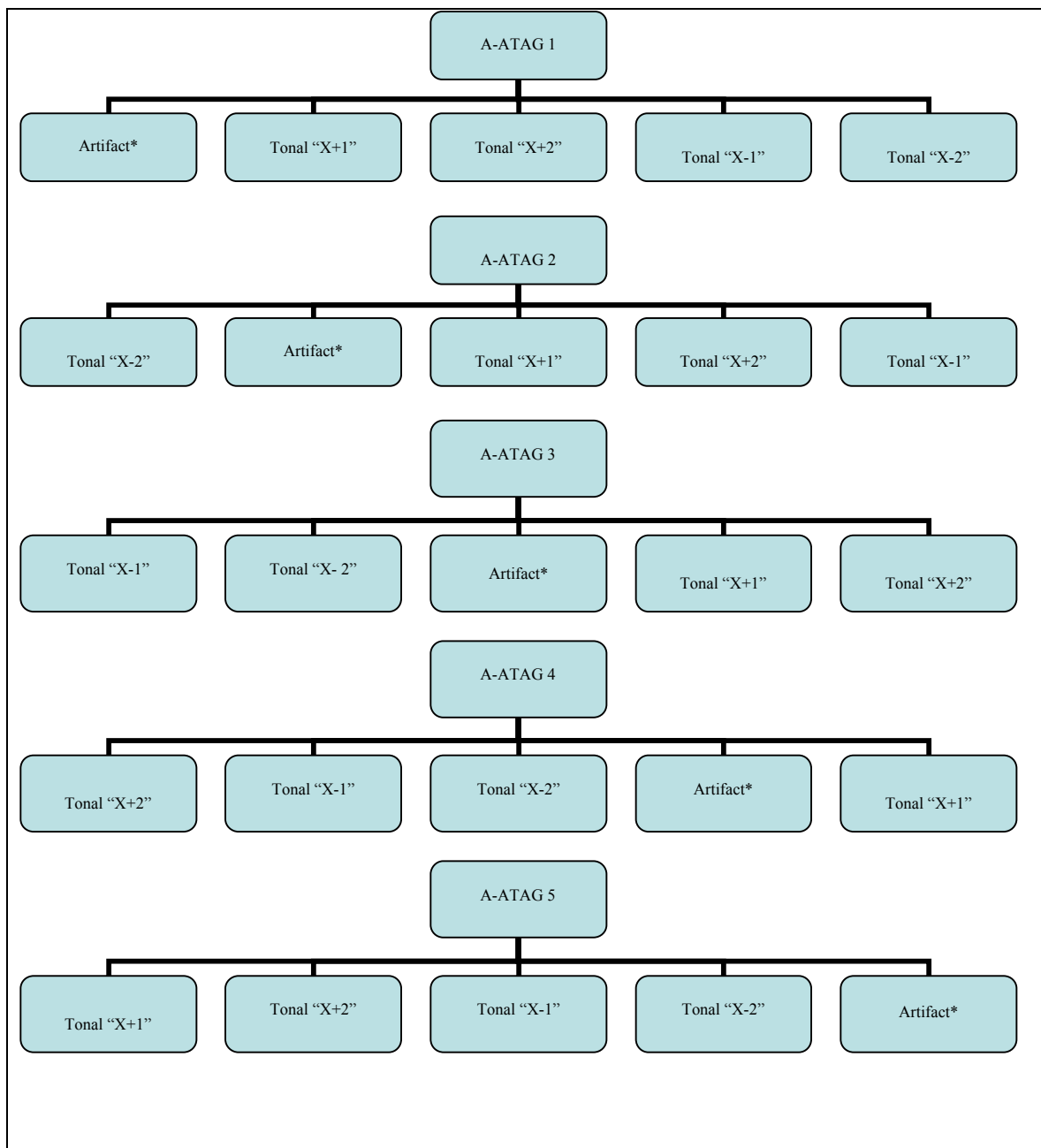


Figure 8. Advertising-Artifactualization Tonal Artifactualization Group. Each A-ATAG depicts a virtue of a product from The Heat Seat, LLC with a human subject or in a scene.
 * Indicates Artifact position.

CHAPTER IV

FINDINGS

Chapter I introduced artifactualization and tonal artifactualization, two terms that offer the ability to quantify discussion on varying only levels of luminance contrast in still imagery. In addition, the chapter also spoke on the use of tonal artifactualizations by mass media outlets, study rationale, and research assumptions.

Chapter II provided the theoretical framework that guided this study. Previous findings in organizational culture, communication theory, the human visual system, and processes involved in the aestheticization of artifactualizations were highlighted. In addition, the constructs of the digitization of reality were discussed.

Chapter III discussed the methods and procedures used to design the study. The Methodology conveyed methods for data collection and tests of validity.

This chapter focuses on the findings of this study. The purpose of this study was described through specifically addressing each research question. A convenience sample of community newspaper website users was used and instruments were adapted for survey questions.

Research questions. The following research questions were used to guide this study:

RQ1: What level of concern exists for using digital photography equipment and rendering digital images?

RQ2: What level concern of concern exists for knowledge that an editorial or advertising image has been digitally manipulated prior to publication in print?

RQ3: What level of meaning exists for knowledge that manipulated editorial and advertising images appear in the News section of a publication?

RQ4: What level of meaning exists for knowledge of exact information on manipulations for editorial and advertising images in a publication?

RQ5: Is there an effect on perception between choices of the artifactualization to a member within its group of tonal artifactualizations, for editorial and advertising images?

RQ6: What do participants think with regard to level of relevancy for editorial and advertising image attribution; PHOTO BY/, versus GRAPHIC BY/?

Sample

Subjects. The researcher obtained approval, with limitations, to administer the survey instrument on the websites of nine community newspapers that are owned and operated by Community Publishers Inc. The researcher was limited in what types of proprietary information was allowable for release and was prohibited from offering incentives for participation in the survey. The researcher was prohibited from publishing overall web traffic *hits* and the breakdown of hits per each of the nine sites. One of the principal stockholders for CPI took the survey and had to approve its contents prior to posting the instrument.

The instrument was hosted and remained open for 48 continuous hours on www.SurveyMonkey.com. A link on each page of the survey allowed participants the

choice to exit the survey at any point in the process, and several exited choosing not to complete the entire survey. Of the 388 participants who began, 201 (58%) completed the entire survey. One participant indicated their age was under 18 and the programmed-survey settings opted the participant to the “Thank you” page at the end of the survey. Data analyzed in Predictive Analytics Software (formerly SPSS) counts this as a completed survey, making the total 202, however, the Findings chapter only reports results from data in completed surveys.

Data Screening

Prior to analysis, all variables were screened for missing data. The variables contained all data from the cases in the study. Therefore, Listwise deletion was not used (Mertler & Vannata, 2010, pp. 26-27).

General Interest. Next, the data were screened for univariate outliers using descriptive statistics, stem and leaf plots, and box plots. For questions of general interest with regard to digital photographic equipment and techniques ($n = 17$), the researcher utilized a seven-point scale that allowed for measurement along a range; Of *least* to *greatest*. Data were recorded for all 201 cases.

In all data for the general questions, the independent variable has a minimum value of one and a maximum value of seven. In each question’s chart for descriptive statistics, the observed minimum is one and the maximum is seven. Thus, these values are within the normal range. In all cases, the mean and standard deviation appear plausible. Additionally, the standard deviation is much less than the mean, indicating most data are closely clustered around the mean.

Photo groups. In the main portion of the study, luminance contrast (dependent variable) has two categories (EDITORIAL and ADVERTISING). Perception (independent variable) is measured in each of two categories along a five-point scale.

Table 2

EDITORIAL Descriptives Univariate Normality

Photo Group	Mean	Median	SD	Skewness	Kurtosis
Wreck Artifact	2.91	3.0	.04	.099	-.661
Wreck + 1	3.13	3.0	1.29	-.03	.04
Wreck + 2	3.10	3.0	1.63	-.48	-1.67
Wreck - 1	3.02	3.0	.93	-.087	-.77
Wreck - 2	2.90	3.0	1.86	.095	-1.88
Snow Artifact	2.98	3.0	1.04	.35	2.18**
Snow + 1	2.71	2.0	1.04	.349	-.996
Snow + 2	2.59	2.0	1.72	.429	-1.59
Snow - 1	3.43	4.0	1.49	-.461	-1.31
Snow - 2	3.25	4.0	1.63	-.339	-1.55
Emotion Artifact	3.46	3.0	1.15	-.291	-.51
Emotion + 1	3.29	4.0	1.31	-.252	-1.15
Emotion + 2	2.81	3.0	1.51	.176	-1.39
Emotion - 1	2.99	3.0	.137	.132	-1.31
Emotion - 2	2.43	2.0	1.48	.564	-1.17
Child Artifact	3.23	3.0	1.10	-.123	-.24
Child + 1	2.77	3.0	1.03	.362	-.82
Child + 2	2.25	1.0	1.72*	.818	-1.18
Child - 1	3.58	4.0	1.40	-.547	-1.14
Child - 2	3.16	3.0	1.33	-.167	-1.15
Damage Artifact	3.39	3.0	1.27	-.269	-.807
Damage + 1	2.69	2.0	1.45	.255	-1.38
Damage + 2	2.71	2.0	1.37	.414	-1.05
Damage - 1	3.16	3.0	1.24	-.076	-1.07
Damage - 2	3.03	3.0	1.60	-.124	-1.58

* > Mean

** > ± 2.0 Kurtosis

Univariate normality was assessed for EDITORIAL and ADVERTISING photo groups using descriptive statistics. Histograms and Q-Q Normal Probability Plots indicated all variables were unimodal and had a slight skew. Snow Artifact (2.18) violated the conservative standards of ± 2 for kurtosis. The standard deviation for Child+1 (1.72), Ease-2 (1.49) and Stitching+1 (1.60) were each greater than their respective median. The Central Limit Theorem was considered. The theorem states the distribution of the sampling means tends toward a normal distribution if the sample is sufficiently large, regardless if the shape of the of the population distribution from which the samples have

been selected. If the theorem applies, the sample means and standard deviations will approximate the population means and standard deviations, regardless of the shape of the sample. The sample size of 201 well exceeds the sample size of 50 for the independent variable needed for the theorem to apply to a multiple regression (Frankfort-Nachmias & Leon-Guerrero, 2002, p. 421).

Table 2a

Advertising Descriptives Univariate Normality

Photo Group	Mean	Median	SD	Skewness	Kurtosis
Quality Artifact	3.37	3.0	1.41	-.361	-1.03
Quality + 1	2.95	2.0	1.20	.511	-1.17
Quality + 2	2.41	2.0	1.52	.528	-1.26
Quality - 1	3.35	4.0	1.17	-.227	-1.00
Quality - 2	2.90	3.0	1.50	.029	-1.40
Ease of Use Artifact	3.35	3.0	1.13	-.083	-.729
Ease + 1	3.48	4.0	1.23	-.376	-.938
Ease + 2	3.02	3.0	1.40	-.100	-1.25
Ease - 1	3.02	3.0	1.39	.260	-1.36
Ease - 2	2.12	1.0	1.49*	.901	-.761
Comfort Artifact	3.24	3.0	1.02	.075	.314
Comfort + 1	3.58	4.0	1.20	-.741	-.537
Comfort + 2	3.42	4.0	1.52	-.423	-1.29
Comfort - 1	2.49	2.0	1.48	.641	-1.06
Comfort - 2	2.23	2.0	1.26	.850	-.395
Stitching Artifact	3.39	3.0	1.01	.035	-.419
Stitching + 1	3.15	3.0	1.28	.097	-1.32
Stitching + 2	2.16	1.0	1.60*	.898	-.916
Stitching- 1	3.21	3.0	1.40	-.136	-1.35
Stitching - 2	3.06	3.0	1.37	-.085	-1.22
Practical Artifact	3.36	3.0	1.05	-.091	-.081
Practical + 1	2.49	2.0	1.30	.606	-.838
Practical + 2	2.21	2.0	1.38	.931	-.430
Practical - 1	3.64	4.0	1.43	-.640	-1.00
Practical - 2	3.28	4.0	1.32	-.496	-.978

* > Mean

** > ± 2.0 Kurtosis

The results of all methods were considered when making a final decision about univariate normality. All distributions were unimodal, and their skew was slight. The skewness and kurtosis for all variables were well within the conservative, acceptable standards. Moreover, the sample size well exceeded the sample size needed for the Central Limit Theorem to apply. Consequently, the assumption of the univariate normality has been met.

Five, one-set, groups containing five photo variations (5) í a forced-ranking for each photo in each group (5), equals 25 choices – per participant, per group. The researcher utilized a five-point scale that allowed for measurement along a range; Of *least to greatest*. Data were recorded for all 201 cases.

For EDITORIAL and ADVERTISING: each category contains five photo groups; the original photo is as originally published; there are four variations of the photo (e.g. the artifactualization and four tonal artifactualizations). In total, there are 50 photos to which each participant was forced to rank the order, along a five-point scale; Of *least to greatest*. Participant ($n = 201$) í responses ($n = 50$) equal 10,050 pieces of data. Of the 10,050 nominal level pieces of data measuring the effect at of the photo variations (DV) on the level of perception (IV), seven cases held a total of 38 (>.004%) instances of outliers. A visual inspection of each case containing an outlier showed no missing data.

Descriptives. In EDITORIAL and ADVERTISING, the independent variable has a minimum value of one and a maximum value of five. In each chart for descriptive statistics, the observed minimum is one and the maximum is five. Thus, these values are within the normal range. In all cases, the mean and standard deviation appear plausible. Additionally, in all but three cases, the standard deviation is much less than the mean, indicating most data are closely clustered around the mean.

Research Question Findings

Findings related to research question No. 1. Research question No.1 sought the level of concern that exists for using digital photography equipment and rendering digital images. Descriptive statistics were analyzed to determine any trends in the amount of expertise respondents hold with regard to using digital photography. The respondents'

indication of their level of expertise in digital photography trends towards lesser concern.

Table No. 3 reflects 46.6% ($n = 94$), nearly half, are slightly less than the median (No. 4) of the seven-point scale.

Table 3

How much expertise I have in digital photography is _____ to me.

Options	Frequency	Percent	Valid Percent	Cumulative Percent
1_ Of no concern	18	8.9	9.0	9.0
2	34	16.8	16.9	25.9
3	47*	23.3*	23.4	49.3
4	47*	23.3*	23.4	72.6
5	29	14.4	14.4	87.1
6	14	6.9	7.0	94.0
7_ Of concern	12	5.9	6.0	100.0

Table 4

Making changes to digital pictures is _____ to me.

Options	Frequency	Percent	Valid Percent	Cumulative Percent
1_ Of no concern	10	5.0	5.0	5.0
2	27	13.4	13.4	18.4
3	36	17.8	17.9	36.3
4	33	16.3	16.4	52.7
5	43*	21.3*	21.4	74.1
6	33	16.3	16.4	90.5
7_ Of concern	19	9.4	9.5	100.0

Table 5

The type of digital camera I use is _____ to me.

Options	Frequency	Percent	Valid Percent	Cumulative Percent
1_ Of no concern	13	6.4	6.5	6.5
2	21	10.4	10.4	16.9
3	31	15.3	15.4	32.3
4	41	20.3	20.4	52.7
5	46*	22.8*	22.9	75.6
6	33	16.3	16.4	92.0
7_ Of concern	16	7.9	8.0	100.0

Respondents indicate making changes to an image and the type of digital camera used is of greater concern (No. 5) than it is of no concern, 21.3 ($n = 43$) and 22.8%, ($n = 46$) respectively (Tables No. 4 and 5). In Table No. 6 the overall trend, 22.3% ($n = 45$), continues as results indicate one-quarter of respondents have more concern compared to a lesser amount for how a digital camera takes pictures.

Table 6

How a digital camera takes pictures is _____ to me.

Options	Frequency	Percent	Valid Percent	Cumulative Percent
1_ Of no concern	14	6.9	7.0	7.0
2	18	8.9	9.0	15.9
3	30	14.9	14.9	30.8
4	31	15.3	15.4	46.3
5	45*	22.3*	22.4	68.7
6	31	15.3	15.4	84.1
7 Of concern	32	15.8	15.9	100.0

The majority of respondents indicate a range from the median (No. 4) to of no concern (No. 1) for depth of field in digital photography. In Table No. 7 for levels No. 2 and 4, responses accounted for 36.6% ($n = 74$) of participants. Of no concern continuing to the median, 66.3% ($n = 134$) of participants indicate less concern compared to the same distance

Table 7

For digital photography, "depth of field" is _____ to me.

Options	Frequency	Percent	Valid Percent	Cumulative Percent
1_ Of no concern	27	13.4	13.4	13.4
2	37*	18.3*	18.4	31.8
3	33	16.3	16.4	48.3
4	37*	18.3*	18.4	66.7
5	32	15.8	15.9	82.6
6	18	8.9	9.0	91.5
7 Of concern	17	8.4	8.5	100.0

in the opposite direction, from the median to of concern, 51.4% ($n = 104$).

Findings related to Research Question No. 2. Research question No. 2 sought to determine what level of concern exists for knowledge that an editorial or advertising image has been digitally manipulated prior to publication in print. Respondents had the

Table 8

The term "photoshopped" _____, as it relates to EDITORIAL (hard news) images in the News section of a print publication.

Options	Frequency	Percent	Valid Percent	Cumulative Percent
1_ Of no concern	8	4.0	4.0	4.0
2	9	4.5	4.5	8.5
3	18	8.9	9.0	17.4
4	23	11.4	11.4	28.9
5	36	17.8	17.9	46.8
6	43	21.3	21.4	68.2
7_ Of concern	64*	31.7*	31.8	100.0

Table 9

The term "photoshopped" _____, as it relates to ADVERTISING images placed in the News section of a print publication.

Options	Frequency	Percent	Valid Percent	Cumulative Percent
1_ Of no concern	10	5.0	5.0	5.0
2	23	11.4	11.4	16.4
3	18	8.9	9.0	25.4
4	27	13.4	13.4	38.8
5	45*	22.3*	22.4	61.2
6	36	17.8	17.9	79.1
7_ Of concern	42	20.8	20.9	100.0

highest level of concern on the scale, 31.7% ($n = 64$), for editorial images in the news section of a publication that have been photoshopped. Compared to photoshopped advertising images in the news section, there was less of a concern with the greatest number of participants at point No. 5, indicating 22.3% ($n = 45$) (Tables No. 8 and 9).

Findings related to research question No. 3. Research question No. 3 sought to determine what level of meaning exists for knowledge that manipulated editorial and advertising images appear in the News section of a publication.

Table 10

It _____ if anything is done to an EDITORIAL (hard news) image before it appears in print.

Options	Frequency	Percent	Valid Percent	Cumulative Percent
1 Means nothing	9	4.5	4.5	4.5
2	13	6.4	6.5	10.9
3	12	5.9	6.0	16.9
4	33	16.3	16.4	33.3
5	28	13.9	13.9	47.3
6	41	20.3	20.4	67.7
7 Means a lot	65*	32.2*	32.3	100.0

Table 11

It _____ if anything is done to an ADVERTISING image before it appears in print.

Options	Frequency	Percent	Valid Percent	Cumulative Percent
1 Means nothing	20	9.9	10.0	10.0
2	22	10.9	10.9	20.9
3	32	15.8	15.9	36.8
4	32	15.8	15.9	52.7
5	39*	19.3*	19.4	72.1
6	29	14.4	14.4	86.6
7 Means a lot	27	13.4	13.4	100.0

Of respondents ($n = 201$), the greatest number of participants indicated it means a lot (No. 7) to know if anything is done to an editorial image before it appears in print, 32.2% ($n = 65$). The trend towards means a lot was less for advertising images. Responses clustered at the median (No. 4). But its meaning is greater, more than it means nothing to 19.3% ($n = 39$) of participants, indicated at point No. 5 (Tables 10 and 11).

Findings related to research question No. 4. Research question No. 4 sought to determine what level of meaning exists for knowledge of exact information on manipulations for editorial and advertising images in a publication.

Table 12

It _____ that I know exactly what was done to an EDITORIAL (hard news) image that appears in a print publication.

Options	Frequency	Percent	Valid Percent	Cumulative Percent
1 Means nothing	16	7.9	8.0	8.0
2	17	8.4	8.5	16.4
3	12	5.9	6.0	22.4
4	28	13.9	13.9	36.3
5	31	15.3	15.4	51.7
6	43	21.3	21.4	73.1
7 Means a lot	54*	26.7*	26.9	100.0

Table 13

It _____ that I know exactly what was done to an ADVERTISING image that appears in a print publication.

Options	Frequency	Percent	Valid Percent	Cumulative Percent
1 Means nothing	28	13.9	13.9	13.9
2	36*	17.8*	17.9	31.8
3	21	10.4	10.4	42.3
4	33	16.3	16.4	58.7
5	26	12.9	12.9	71.6
6	30	14.9	14.9	86.6
7 Means a lot	27	13.4	13.4	100.0

From the median, respondents trended more towards means a lot (No. 7) than they did for means nothing (No. 1). For knowing exactly what was done to an editorial image that appears in print, 26.7% ($n = 54$) indicated it means a lot. For advertising it means less (No. 2), 17.8% ($n = 36$) (Tables 12 and 13).

Table 14

What level of relevancy is the knowledge of whether or not an EDITORIAL (hard news) photo has been altered to make it appear pleasing in news publications?

Options	Frequency	Percent	Valid Percent	Cumulative Percent
1_Irrelevant	8	4.0	4.0	4.0
2	17	8.4	8.5	12.4
3	23	11.4	11.4	23.9
4	34	16.8	16.9	40.8
5	34	16.8	16.9	57.7
6	30	14.9	14.9	72.6
7_Relevant	55*	27.2*	27.4	100.0

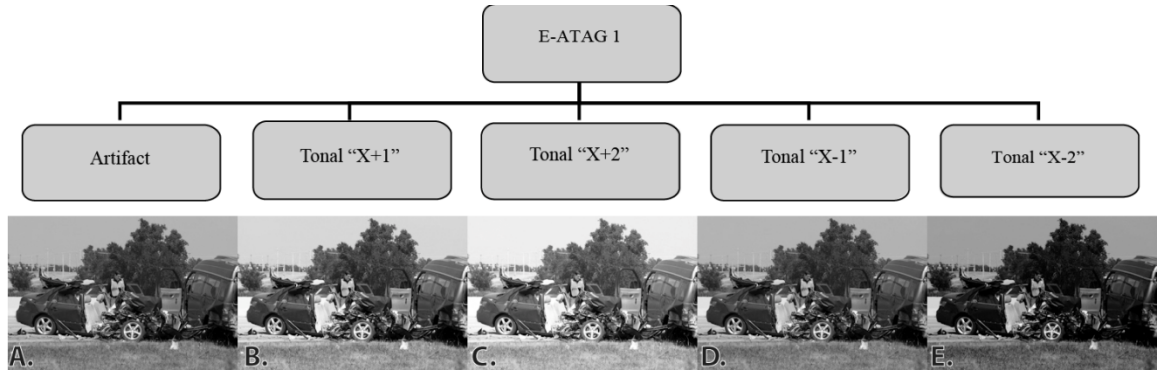
Table 15

What level of relevancy is the knowledge of whether or not a photo used for ADVERTISING purposes has been made to appear pleasing?

Options	Frequency	Percent	Valid Percent	Cumulative Percent
1_Irrelevant	21	10.4	10.4	10.4
2	24	11.9	11.9	22.4
3	27	13.4	13.4	35.8
4	40*	19.8*	19.9	55.7
5	23	11.4	11.4	67.2
6	28	13.9	13.9	81.1
7_Relevant	38	18.8	18.9	100.0

Participants indicate the relevancy of knowledge for whether an image is made to appear pleasing is relevant (No. 7) for editorial photos, 27.2% ($n = 55$). For advertising, participants indicate the median (No. 4), 19.8% ($n = 40$). The trend continues from the median to relevant. More respondents for editorial, 75.7% ($n = 153$), think the relevancy of knowledge on making a photo appear pleasing is greater compared to advertising, 63.9% ($n = 129$) (Tables 14 and 15).

Findings related to research question No. 5. Research question No. 5 sought to determine if there is an effect on the IV (level of perception) between choices within groups of the DV (E-ATAGs and A-ATAGs).



12. Order of photos that picture seriousness of traffic collision:

Means nothing to me 1 2 3 4 5 Means a lot to me

Figure 9. Wreck Photo Group

Table 16

Order of the photos that picture seriousness of traffic collision

	Artifact		Wreck+1		Wreck+2		Wreck-1		Wreck-2	
Option	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
1_Means_nothing	26	12.9	18	9	60	29.9	7	3.5	90*	44.8*
2	45	22.4	67*	33.3*	23	11.4	57	28.4	9	4.5
3	73*	36.3*	20	10	28	13.9	68	33.8	12	6.0
4	35	17.4	63*	31.3*	29	14.4	63*	31.3*	11	5.5
5 Means a lot	22	10.9	33	16.4	61	30.3	6	3.0	79*	39.3*

*Greatest

Table 17

Wreck Photo Group Descriptive Statistics

Photo Group	Mean	SD	N
Wreck Artifact	2.91	1.16	201
Wreck+1	3.12	1.28	201
Wreck+2	3.03	1.63	201
Wreck-1	3.02	.93	201
Wreck-2	2.90	1.86	201

Table 18

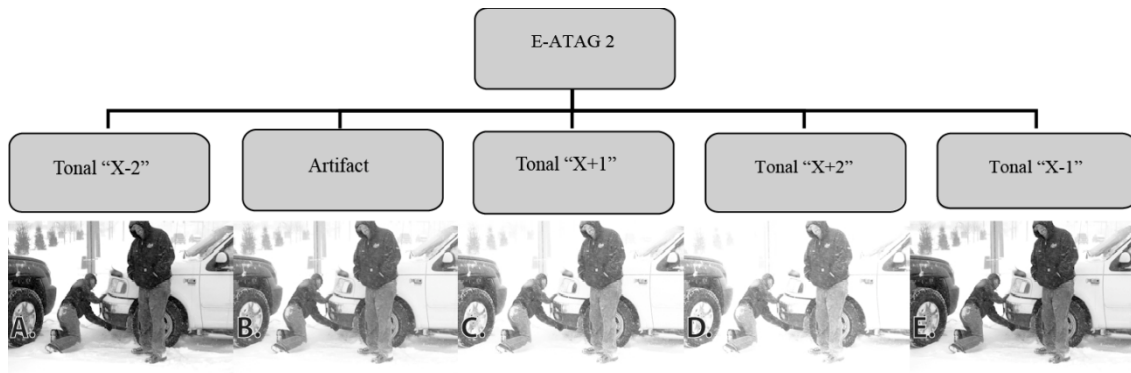
Wreck Photo Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig. ^a	Partial Eta Squared
Wreck	Sphericity Assumed	7.26	4	1.81	.727	.573	.004
	Greenhouse-Geisser	7.26	2.10	3.45	.727	.490	.004
	Huynh-Feldt	7.26	2.12	3.42	.727	.492	.004
	Lower-bound	7.26	1.00	7.26	.727	.395	.004
Error (Wreck)	Sphericity Assumed	1998.73	800	2.49			
	Greenhouse-Geisser	1998.73	420.33	4.75			
	Huynh-Feldt	1998.73	424.90	4.70			
	Lower-bound	1998.73	200	9.99			

Table 19

Bonferroni Comparisons for Wreck Photo

Comparisons		Mean Diff	Std. Error	Sig. ^a	95% Confidence Interval	
					Lower Bound	Upper Bound
Artifact	+1	-.219	.133	1.00	-.596	.158
	+2	-.119	.166	1.00	-.590	.352
	-1	-.114	.115	1.00	-.440	.212
	-2	.010	.157	1.00	-.437	.457
+1	Artifact	.219	.133	1.00	-.158	.596
	+2	.100	.104	1.00	-.197	.396
	-1	.104	.133	1.00	-.274	.483
	-2	.229	.211	1.00	-.370	.828
+2	Artifact	.119	.166	1.00	-.352	.590
	+1	-.100	.104	1.00	-.396	.197
	-1	.005	.160	1.00	-.449	.459
	-2	.129	.228	1.00	-.518	.776
-1	Artifact	.114	.115	1.00	-.212	.440
	+1	-.104	.133	1.00	-.483	.274
	+2	-.005	.160	1.00	-.459	.449
	-2	.124	.121	1.00	-.220	.469
-2	Artifact	-.010	.157	1.00	-.457	.437
	+1	-.229	.211	1.00	-.828	.370
	+2	-.129	.228	1.00	-.776	.518
	-1	-.124	.121	1.00	-.469	.220



13. Order of photos that picture snow storm:

Means nothing to me 1 2 3 4 5 Means a lot to me

Figure 10. Snow Storm Photo Group.

Table 20

Order of the photos that picture snow storm

Options	Snow-2		Artifact		Snow+1		Snow+2		Snow-1	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
1 Means nothing	54	26.9	10	5.0	15	7.5	91*	45.3*	31	15.4
2	22	10.9	21	10.4	94*	46.8*	26	12.9	38	18.9
3	7	3.5	143*	71.1*	31	15.4	11	5.5	9	4.5
4	54	26.9	17	8.5	55	27.4	18	9.0	57*	28.4*
5 Means a lot	64	31.8	10	5.0	6	3.0	55	27.4	66*	32.8*

*Greatest

Table 21

Snow Storm Photo Group Descriptive Statistics

Photo Group	Mean	SD	N
Snow Artifact	2.98	.771	201
Snow+1	2.71	1.04	201
Snow+2	2.59	1.72	201
Snow-1	3.43	1.49	201
Snow-2	3.25	1.63	201

Table 22

Snow Storm Tests of Within-Subjects Effects

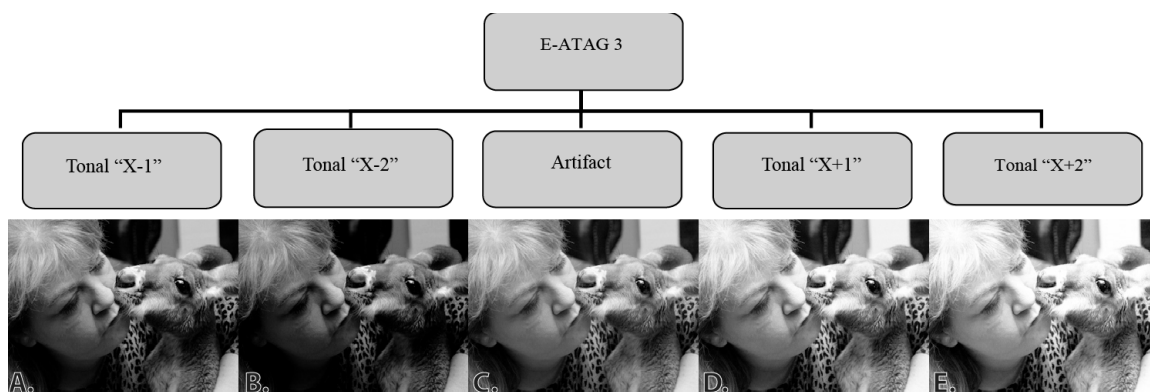
Source		Type III Sum of Squares	df	Mean Square	F	Sig. ^a	Partial Eta Squared
Snow	Sphericity Assumed	100.31	4	25.08	10.54	.000	.050
	Greenhouse-Geisser	100.31	1.81	55.56	10.54	.000	.050
	Huynh-Feldt	100.31	1.82	55.09	10.54	.000	.050
	Lower-bound	100.31	1.00	100.31	10.54	.001	.050
Error (Snow)	Sphericity Assumed	1902.89	800	2.38			
	Greenhouse-Geisser	1902.89	361.10	5.27			
	Huynh-Feldt	1902.89	364.19	5.23			
	Lower-bound	1902.89	200	9.51			

Table 23

Bonferroni Comparisons for EDITORIAL Photo Group 2 Snow Storm

Comparisons		Mean Diff	Std. Error	Sig. ^a	95% Confidence Interval	
					Lower Bound	Upper Bound
Artifact	+1	.269*	.091	.037	.009	.528
	+2	.388	.140	.062	-.010	.786
	-1	-.453*	.129	.006	-.820	-.085
	-2	-.269	.132	.430	-.643	.106
+1	Artifact	-.269*	.091	.037	-.528	-.009
	+2	.119	.085	1.00	-.123	.362
	-1	-.721*	.165	.000	-1.19	-.254
	-2	-.537*	.178	.029	-1.04	-.032
+2	Artifact	-.388	.140	.062	-.786	.010
	+1	-.119	.085	1.00	-.362	.123
	-1	-.841*	.210	.001	-1.44	-.244
	-2	-.657*	.223	.037	-1.29	-.023
-1	Artifact	.453*	.129	.006	.085	.820
	+1	.721*	.165	.000	.254	1.19
	+2	.841*	.210	.001	.244	1.44
	-2	.184	.120	1.00	-.156	.524
-2	Artifact	.269	.132	.430	-.106	.643
	+1	.537*	.178	.029	.032	1.04
	+2	.657*	.223	.037	.023	1.29
	-1	-.184	.120	1.00	-.524	.156

* p < .05



14. Order of photos that picture emotional connection:

Means nothing to me 1 2 3 4 5 Means a lot to me

Figure 11. Emotional Connection Photo Group.

Table 24

Order of the photos that picture emotional connection

Options	Emtn-1		Emtn-2		Artifact		Emtn+1		Emtn+2	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
1 Means nothing	29	14.4	78*	38.8*	14	7.0	21	10.4	59	29.4
2	63*	31.3*	44	21.9	18	9.0	45	22.4	31	15.4
3	29	14.4	19	9.5	80*	39.8*	33	16.4	40	19.9
4	41	20.4	32	15.9	41	20.4	58*	28.9*	29	14.4
5 Means a lot	39	19.4	28	13.9	48*	23.9*	44	21.9	42	20.9

*Greatest

Table 25

Emotional Connection Descriptive Statistics

Photo Group	Mean	SD	N
Emotion Artifact	3.46	1.15	201
Emotion+1	3.29	1.31	201
Emotion+2	2.81	1.51	201
Emotion-1	2.98	1.38	201
Emotion-2	2.43	1.48	201

Table 26

Emotional Connection Tests of Within-Subjects Effects

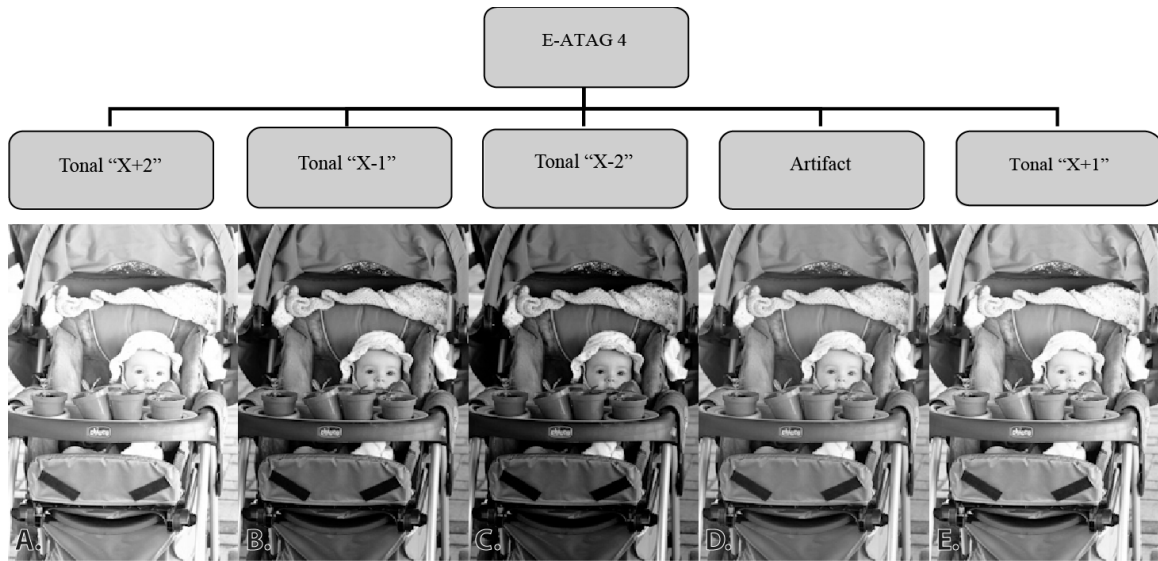
Source		Type III Sum of Squares	df	Mean Square	F	Sig. ^a	Partial Eta Squared
Emtn	Sphericity Assumed	130.70	4	32.68	13.89	.000	.065
	Greenhouse-Geisser	130.70	2.65	49.42	13.89	.000	.065
	Huynh-Feldt	130.70	2.68	48.71	13.89	.000	.065
	Lower-bound	130.70	1.00	130.71	13.89	.000	.065
Error (Emtn)	Sphericity Assumed	1880.89	800	2.35			
	Greenhouse-Geisser	1880.89	528.94	3.56			
	Huynh-Feldt	1880.89	536.67	3.51			
	Lower-bound	1880.89	200	9.40			

Table 27

Bonferroni Comparisons for EDITORIAL Photo Group 3 Emotional Connection

Comparisons		Mean Diff	Std. Error	Sig. ^a	95% Confidence Interval	
					Lower Bound	Upper Bound
Artifact	+1	.169	.107	1.00	-.134	.472
	+2	.647*	.156	.000	.204	1.089
	-1	.473*	.135	.006	.089	.857
	-2	1.03*	.161	.000	.568	1.482
+1	Artifact	-.169	.107	1.00	-.472	.134
	+2	.478*	.127	.002	.118	.837
	-1	.303	.168	.716	-.172	.779
	-2	.856*	.185	.000	.332	1.380
+2	Artifact	-.647*	.156	.000	-1.09	-.204
	+1	-.478*	.127	.002	-.837	-.118
	-1	-.174	.186	1.00	-.703	.355
	-2	.378	.168	.259	-.100	.856
-1	Artifact	-.473*	.135	.006	-.857	-.089
	+1	-.303	.168	.716	-.779	.172
	+2	.174	.186	1.00	-.355	.703
	-2	.552*	.113	.000	.231	.873
-2	Artifact	-1.03*	.161	.000	-1.48	-.568
	+1	-.856*	.185	.000	-1.38	-.332
	+2	-.378	.168	.259	-.856	.100
	-1	-.552*	.113	.000	-.873	-.231

* p < .05



15. Order of photos that picture cuteness of child in stroller:

Means nothing to me $\frac{\quad}{1}$; $\frac{\quad}{2}$; $\frac{\quad}{3}$; $\frac{\quad}{4}$; $\frac{\quad}{5}$ Means a lot to me

Figure 12. Child in Stroller Photo Group.

Table 28

Order of the photos that picture cuteness of child in stroller

Options	Child+2		Child-1		Child-2		Artifact		Child+1	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
1_Means nothing	123*	61.2*	20	10.0	28	13.9	17	8.5	13	6.5
2	11	5.5	41	20.4	41	20.4	20	10.0	88*	43.8*
3	10	5.0	15	7.5	41	20.4	95*	47.3*	40	19.9
4	8	4.0	61*	30.3*	45	22.4	37	18.4	50	24.9
5_Means a lot	49	24.4	64*	31.8*	46	22.9	32	15.9	10	5.0

*Greatest

Table 29

Child in Stroller Descriptive Statistics

	Mean	SD	N
Child Artifact	3.23	1.10	201
Child+1	2.77	1.03	201
Child+2	2.25	1.72	201
Child-1	3.58	1.41	201
Child-2	3.16	1.33	201

Table 30

Child in Stroller Test of Within-Subjects Effects

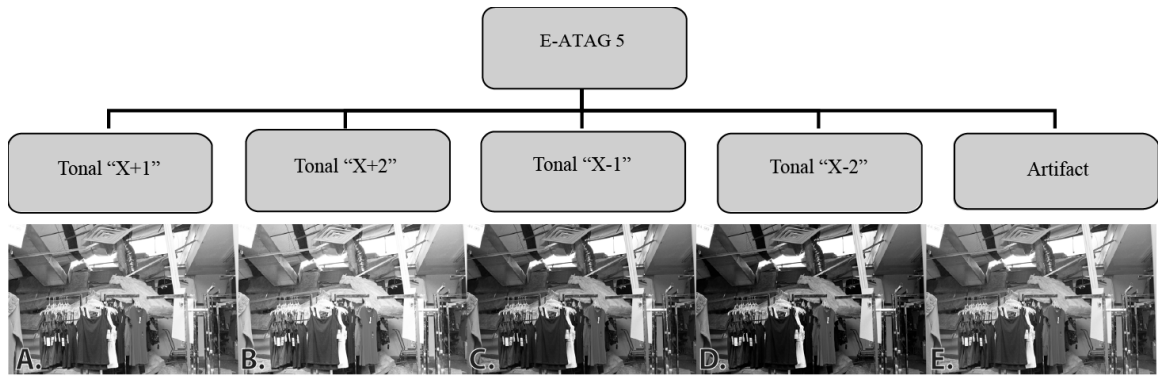
Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Child	Sphericity Assumed	207.68	4	51.92	23.14	.000	.104
	Greenhouse-Geisser	207.68	2.33	89.11	23.14	.000	.104
	Huynh-Feldt	207.68	2.36	88.01	23.14	.000	.104
	Lower-bound	207.68	1.00	207.68	23.14	.000	.104
Error (Child)	Sphericity Assumed	1794.71	800	2.24			
	Greenhouse-Geisser	1794.71	466.15	3.85			
	Huynh-Feldt	1794.71	471.98	3.80			
	Lower-bound	1794.71	200	8.97			

Table 31

Bonferroni Comparisons For EDITORIAL Group_4 Child in Stroller

Comparisons		Mean Diff	Std. Error	Sig. ^a	95% Confidence Interval	
					Lower Bound	Upper Bound
Artifact	+1	.458*	.107	.000	.153	.763
	+2	.980*	.169	.000	.500	1.46
	-1	-.353*	.122	.041	-.699	-.008
	-2	.070	.141	1.00	-.331	.470
+1	Artifact	-.458*	.107	.000	-.763	-.153
	+2	.522*	.113	.000	.201	.844
	-1	-.811*	.156	.000	-1.26	-.367
	-2	-.388	.150	.105	-.815	.038
+2	Artifact	-.980*	.169	.000	-1.46	-.500
	+1	-.522*	.113	.000	-.844	-.201
	-1	-1.33*	.207	.000	-1.92	-.747
	-2	-.910*	.186	.000	-1.44	-.384
-1	Artifact	.353*	.122	.041	.008	.699
	+1	.811*	.156	.000	.367	1.26
	+2	1.33*	.207	.000	.747	1.92
	-2	.423*	.107	.001	.120	.726
-2	Artifact	-.070	.141	1.00	-.470	.331
	+1	.388	.150	.105	-.038	.815
	+2	.910*	.186	.000	.384	1.44
	-1	-.423*	.107	.001	-.726	-.120

* p < .05



16. Order of photos that picture storm damage:






Means nothing to me  ;  ;  ;  ;  Means a lot to me

Figure 13. Storm Damage Photo Group.

Table 32

Order of the photos that picture storm damage

Options	Dmge+1		Dmge+2		Dmge-1		Dmge-2		Artifact	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
1_Means nothing	59	29.4	43	21.4	18	9.0	60*	29.9*	21	10.4
2	46	22.9	63*	31.3*	52	25.9	21	10.4	19	9.5
3	23	11.4	38	18.9	41	20.4	23	11.4	76*	37.8*
4	44	21.9	24	11.9	57*	28.4*	47	23.4	29	14.4
5 Means a lot	29	14.4	33	16.4	33	16.4	50	24.9	56*	27.9*

*Greatest

Table 33

Descriptive Statistics for Storm Damage

	Mean	SD	N
Storm Artifact	3.40	1.27	201
Storm+1	2.69	1.45	201
Storm+2	2.70	1.37	201
Storm-1	3.16	1.24	201
Storm-2	3.03	1.60	201

Table 34

Storm Damage Test of Within-Subjects Effects

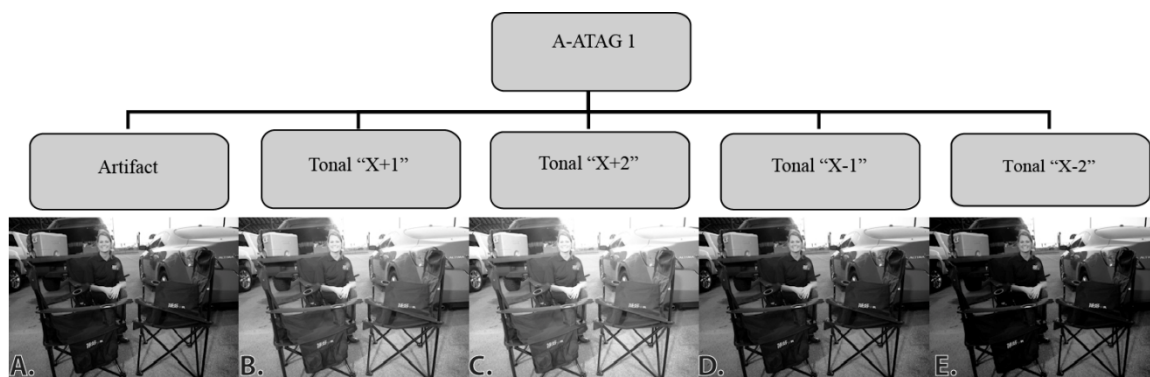
Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Dmge	Sphericity Assumed	73.88	4	18.47	7.64	.000	.037
	Greenhouse-Geisser	73.88	2.54	29.07	7.64	.000	.037
	Huynh-Feldt	73.88	2.58	28.67	7.64	.000	.037
	Lower-bound	73.88	1.00	73.88	7.64	.006	.037
Error (Dmge)	Sphericity Assumed	1935.32	800	2.42			
	Greenhouse-Geisser	1935.32	508.22	3.81			
	Huynh-Feldt	1935.32	515.31	3.76			
	Lower-bound	1935.32	200.00	9.68			

Table 35

Bonferroni Comparisons For EDITORIAL Group_5 Storm Damage

Source		Mean Diff	Std. Error	Sig. ^a	95% Confidence Interval	
					Lower Bound	Upper Bound
Artifact	+1	.706*	.154	.000	.270	1.14
	+2	.692*	.151	.000	.263	1.12
	-1	.234	.133	.792	-.142	.610
	-2	.368	.156	.193	-.075	.811
+1	Artifact	-.706*	.154	.000	-1.14	-.270
	+2	-.015	.098	1.00	-.292	.262
	-1	-.473	.169	.056	-.952	.007
	-2	-.338	.197	.876	-.898	.221
+2	Artifact	-.692*	.151	.000	-1.12	-.263
	+1	.015	.098	1.00	-.262	.292
	-1	-.458	.164	.059	-.924	.009
	-2	-.323	.188	.871	-.857	.210
-1	Artifact	-.234	.133	.792	-.610	.142
	+1	.473	.169	.056	-.007	.952
	+2	.458	.164	.059	-.009	.924
	-2	.134	.115	1.00	-.191	.459
-2	Artifact	-.368	.156	.193	-.811	.075
	+1	.338	.197	.876	-.221	.898
	+2	.323	.188	.871	-.210	.857
	-1	-.134	.115	1.00	-.459	.191

* p < .05



17. Order of photos that picture quality:

Irrelevant $\frac{\quad}{1}$; $\frac{\quad}{2}$; $\frac{\quad}{3}$; $\frac{\quad}{4}$; $\frac{\quad}{5}$ Relevant

Figure 14. Quality of Chair Photo Group.

Table 36

Order of the photos that picture quality

	Artifact		Qlty+1		Qlty+2		Qlty-1		Qlty-2	
Options	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
1_Irrelevant	34	16.9	6	3.0	92*	45.8*	10	5.0	59	29.4
2	12	6.0	100*	49.8*	21	10.4	48	23.9	20	10.0
3	64*	31.8*	20	10.0	30	14.9	40	19.9	47	23.4
4	28	13.9	45	22.4	28	13.6	67*	33.3*	33	16.4
5_Relevant	63*	31.3*	30	14.9	30	14.9	36	17.9	42	20.9

*Greatest

Table 37

Descriptive Statistics for Quality of Chair

	Mean	SD	N
Quality Artifact	3.37	1.41	201
Quality+1	2.96	1.20	201
Quality+2	2.41	1.53	201
Quality-1	3.35	1.17	201
Quality-2	2.90	1.51	201

Table 38

Quality of Chair Test of Within-Subjects Effects

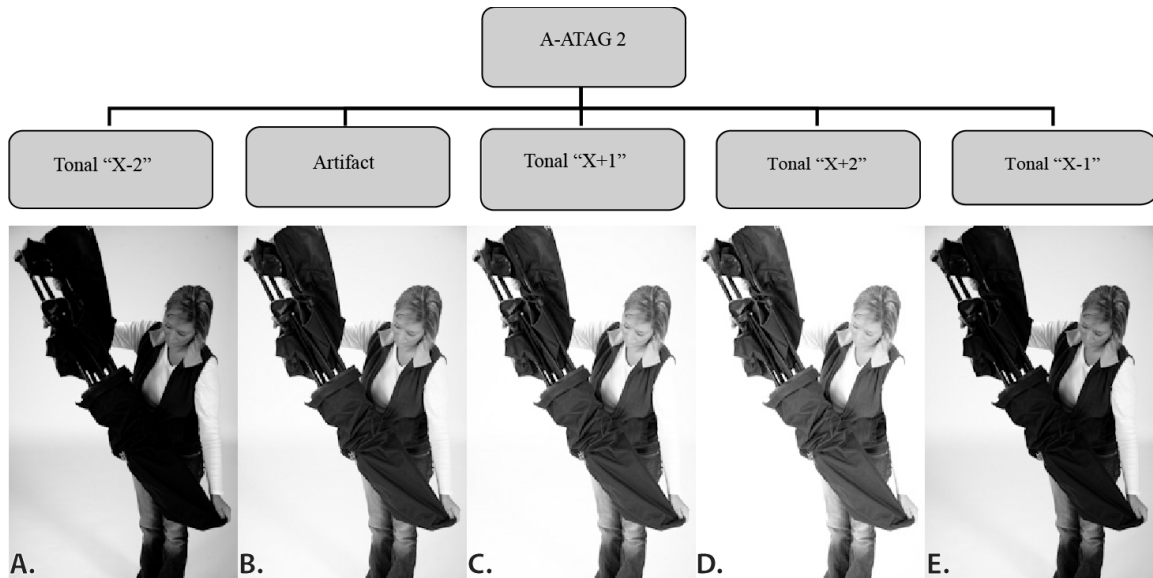
Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Qlty	Sphericity Assumed	124.93	4	31.23	13.30	.000	.062
	Greenhouse-Geisser	124.93	2.54	49.21	13.30	.000	.062
	Huynh-Feldt	124.93	2.57	48.53	13.30	.000	.062
	Lower-bound	124.93	1.00	124.93	13.30	.000	.062
Error (Qlty)	Sphericity Assumed	1878.27	800	2.35			
	Greenhouse-Geisser	1878.27	507.76	3.70			
	Huynh-Feldt	1878.27	514.84	3.65			
	Lower-bound	1878.27	200	9.39			

Table 39

Bonferroni Comparisons For ADVERTISING Group_1 Quality of Chair

Source		Mean Diff	Std. Error	Sig. ^a	95% Confidence Interval	
					Lower Bound	Upper Bound
Artifact	+1	.418*	.144	.041	.009	.826
	+2	.960*	.183	.000	.440	1.48
	-1	.020	.126	1.00	-.337	.377
	-2	.478*	.162	.035	.018	.937
+1	Artifact	-.418*	.144	.041	-.826	-.009
	+2	.542*	.089	.000	.288	.796
	-1	-.398	.150	.087	-.825	.029
	-2	.060	.177	1.00	-.441	.561
+2	Artifact	-.960*	.183	.000	-1.48	-.440
	+1	-.542*	.089	.000	-.796	-.288
	-1	-.940*	.173	.000	-1.43	-.450
	-2	-.483	.182	.087	-.999	.034
-1	Artifact	-.020	.126	1.00	-.377	.337
	+1	.398	.150	.087	-.029	.825
	+2	.940*	.173	.000	.450	1.43
	-2	.458*	.112	.001	.140	.776
-2	Artifact	-.478*	.162	.035	-.937	-.018
	+1	-.060	.177	1.00	-.561	.441
	+2	.483	.182	.087	-.034	.999
	-1	-.458*	.112	.001	-.776	-.140

* p < .05



18. Order of photos that picture ease of use:






Irrelevant  ;  ;  ;  ;  Relevant

Figure 15. Ease of Use Photo Group.

Table 40

Order of the photos that picture ease of use

	Use-2		Artifact		Use+1		Use+2		Use-1	
Options	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
1_Irrelevant	114*	56.7*	10	5.0	13	6.5	42	20.9	22	10.9
2	19	9.5	36	17.9	38	18.9	31	15.4	77*	38.3*
3	19	9.5	71*	35.3*	37	18.4	46	22.9	28	13.9
4	25	12.4	44	21.9	64*	31.8*	45	22.4	23	11.4
5_Relevant	24	11.9	40	19.9	49	24.4	37	18.4	51*	25.4*

*Greatest

Table 41

Descriptive Statistics for Ease of Use

	Mean	SD	N
Ease Artifact	3.35	1.13	201
Ease+1	3.48	1.23	201
Ease+2	3.03	1.40	201
Ease-1	3.03	1.39	201
Ease-2	2.12	1.45	201

Table 42

Ease of Use of Chair Test of Within-Subjects Effects

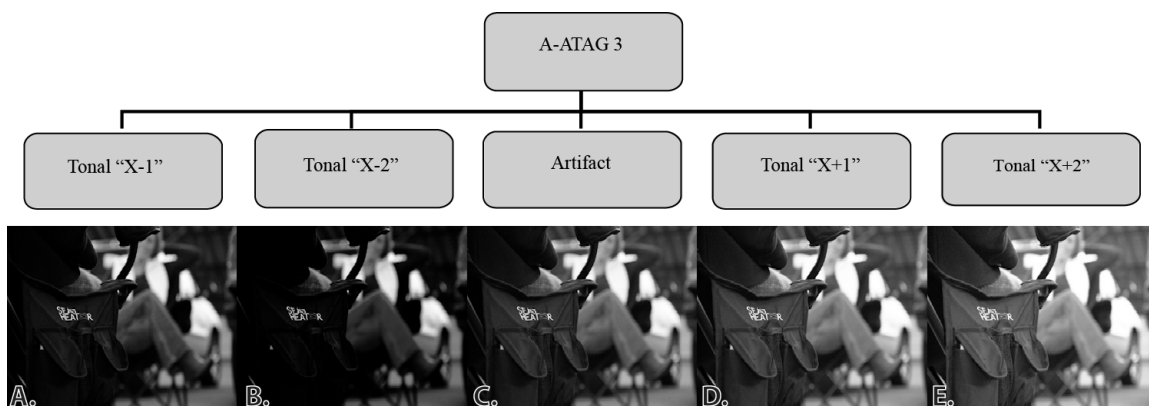
Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Use	Sphericity Assumed	224.64	4	56.160	25.27	.000	.112
	Greenhouse-Geisser	224.64	2.95	76.141	25.27	.000	.112
	Huynh-Feldt	224.64	2.99	74.897	25.27	.000	.112
	Lower-bound	224.64	1.00	224.64	25.27	.000	.112
Error (Use)	Sphericity Assumed	1778.16	800	2.223			
	Greenhouse-Geisser	1778.16	590.06	3.014			
	Huynh-Feldt	1778.16	599.86	2.964			
	Lower-bound	1778.16	200	8.891			

Table 43

Bonferroni Comparisons For ADVERTISING Group 2 Ease of Use Chair

Source		Mean Diff	Std. Error	Sig. ^a	95% Confidence Interval	
					Lower Bound	Upper Bound
Artifact	+1	-.129	.113	1.00	-.451	.192
	+2	.323	.145	.273	-.089	.736
	-1	.318	.144	.280	-.090	.727
	-2	1.22*	.146	.000	.810	1.64
+1	Artifact	.129	.113	1.00	-.192	.451
	+2	.453*	.111	.001	.137	.769
	-1	.448	.164	.068	-.017	.913
	-2	1.35*	.173	.000	.862	1.84
+2	Artifact	-.323	.145	.273	-.736	.089
	+1	-.453*	.111	.001	-.769	-.137
	-1	-.005	.168	1.00	-.482	.472
	-2	.900*	.177	.000	.399	1.40
-1	Artifact	-.318	.144	.280	-.727	.090
	+1	-.448	.164	.068	-.913	.017
	+2	.005	.168	1.00	-.472	.482
	-2	.905*	.129	.000	.539	1.27
-2	Artifact	-1.22*	.146	.000	-1.64	-.810
	+1	-1.353*	.173	.000	-1.84	-.862
	+2	-.900*	.177	.000	-1.40	-.399
	-1	-.905*	.129	.000	-1.27	-.539

* p < .05



19. Order of photos that picture comfort:

Irrelevant 1 ; 2 ; 3 ; 4 ; 5 Relevant

Figure 16. Comfort of Chair Photo Group.

Table 44

Order of the photos that picture comfort

Options	Cmft-1		Cmft-2		Artifact		Cmft+1		Cmft+2	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
1_Irrelevant	66	32.8	70*	34.8*	14	7.0	14	7.0	37	18.4
2	63	31.3	69*	34.3*	10	5.0	36	17.9	23	11.4
3	16	8.0	16	8.0	125*	62.2*	13	6.5	31	15.4
4	20	10.0	30	14.9	18	9.0	96*	47.8*	37	18.4
5 Relevant	36	17.9	16	8.0	34	16.9	42	20.9	73*	36.3*

*Greatest

Table 45

Descriptive Statistics for Comfort of Chair

	Mean	SD	N
Comfort Artifact	3.24	1.02	201
Comfort+1	3.58	1.20	201
Comfort+2	3.42	1.52	201
Comfort-1	2.50	1.49	201
Comfort-2	2.23	1.26	201

Table 46

Comfort of Chair Test of Within-Subjects Effects

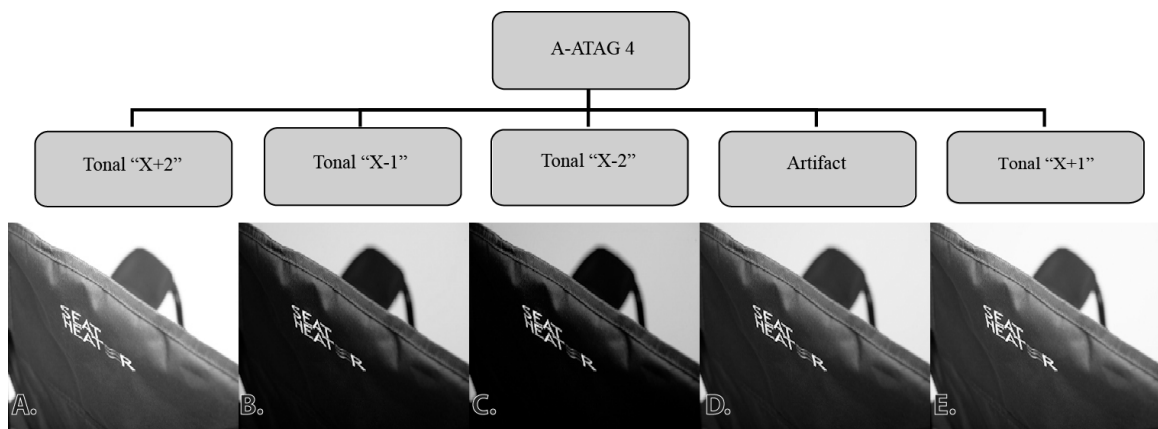
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Sphericity Assumed	282.21	4	70.55	32.83	.000	.141
Greenhouse-Geisser	282.21	2.15	131.23	32.83	.000	.141
Huynh-Feldt	282.21	2.18	129.77	32.83	.000	.141
Lower-bound	282.21	1.00	282.21	32.83	.000	.141
Sphericity Assumed	1719.40	800	2.15			
Greenhouse-Geisser	1719.40	430.10	3.40			
Huynh-Feldt	1719.40	434.92	3.95			
Lower-bound	1719.40	200	8.60			

Table 47

Bonferroni Comparisons For ADVERTISING Group_3 Comfort of Chair

Source		Mean Diff	Std. Error	Sig. ^a	95% Confidence Interval	
					Lower Bound	Upper Bound
Artifact	+1	-.338*	.105	.015	-.637	-.040
	+2	-.179	.143	1.00	-.585	.227
	-1	.741*	.138	.000	.349	1.133
	-2	1.01*	.134	.000	.623	1.387
+1	Artifact	.338*	.105	.015	.040	.637
	+2	.159	.101	1.00	-.127	.445
	-1	1.08*	.176	.000	.581	1.579
	-2	1.34*	.162	.000	.883	1.804
+2	Artifact	.179	.143	1.00	-.227	.585
	+1	-.159	.101	1.00	-.445	.127
	-1	.920*	.199	.000	.354	1.486
	-2	1.18*	.171	.000	.697	1.671
-1	Artifact	-.741*	.138	.000	-1.13	-.349
	+1	-1.08*	.176	.000	-1.58	-.581
	+2	-.920*	.199	.000	-1.49	-.354
	-2	.264	.093	.050	-4.764E-5	.527
-2	Artifact	-1.01*	.134	.000	-1.39	-.623
	+1	-1.34*	.162	.000	-1.80	-.883
	+2	-1.18*	.171	.000	-1.67	-.697
	-1	-.264	.093	.050	-.527	4.764E-5

* p < .05



20. Order of photos that picture quality of stitching:

Irrelevant —; —; —; —; — Relevant
1 2 3 4 5

Figure 17. Quality of Stitching Photo Group.

Table 48

Order of the photos that picture quality of stitching

	Stitch+2		Stitch-1		Stitch-2		Artifact		Stitch+1	
Options	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
1_Irrelevant	119*	59.2*	27	13.4	35	17.4	6	3.0	14	7.0
2	14	7.0	50	24.9	40	19.9	25	12.4	72*	35.8
3	16	8.0	27	13.4	41	20.4	90*	44.8*	27	13.4
4	14	7.0	47	23.4	48	23.9	43	21.4	49*	24.4*
5 Relevant	38	18.9	50*	24.9*	37	18.4	37	18.4	39	19.4

*Greatest

Table 49

Descriptive Statistics for Quality of Stitching

	Mean	SD	N
Stitch Artifact	3.40	1.02	201
Sticth+1	3.15	1.28	201
Stitch+2	2.17	1.61	201
Stitch-1	3.21	1.41	201
Stitch-2	3.06	1.37	201

Table 50

Quality of Stitching Test of Within-Subjects Effects

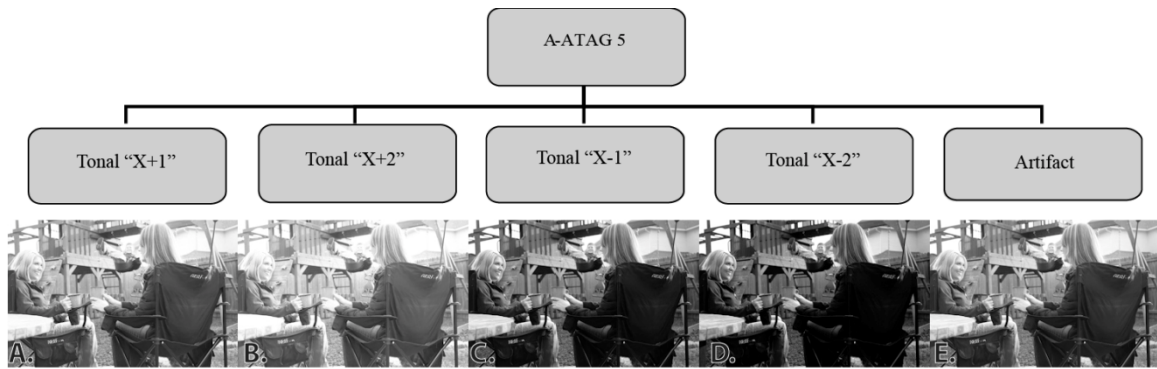
Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Stitch	Sphericity Assumed	185.29	4	46.32	20.35	.000	.092
	Greenhouse-Geisser	185.29	2.72	68.13	20.35	.000	.092
	Huynh-Feldt	185.29	2.76	67.11	20.35	.000	.092
	Lower-bound	185.29	1.00	185.29	20.35	.000	.092
Error (Stitch)	Sphericity Assumed	1821.11	800	2.28		.000	.092
	Greenhouse-Geisser	1821.11	543.97	3.35		.000	.092
	Huynh-Feldt	1821.11	552.20	3.30		.000	.092
	Lower-bound	1821.11	200	9.11		.000	.092

Table 51

Bonferroni Comparisons For ADVERTISING Group_4 Quality of Stitching

Source		Mean Diff	Std. Error	Sig. ^a	95% Confidence Interval	
					Lower Bound	Upper Bound
Artifact	+1	.244	.106	.224	-.057	.544
	+2	1.23 [*]	.152	.000	.798	1.66
	-1	.184	.139	1.00	-.212	.580
	-2	.338	.131	.106	-.034	.710
+1	Artifact	-.244	.106	.224	-.544	.057
	+2	.985 [*]	.134	.000	.604	1.37
	-1	-.060	.169	1.00	-.540	.421
	-2	.095	.169	1.00	-.384	.573
+2	Artifact	-1.23 [*]	.152	.000	-1.66	-.798
	+1	-.985 [*]	.134	.000	-1.37	-.604
	-1	-1.05 [*]	.185	.000	-1.57	-.520
	-2	-.891 [*]	.185	.000	-1.42	-.366
-1	Artifact	-.184	.139	1.00	-.580	.212
	+1	.060	.169	1.00	-.421	.540
	+2	1.05 [*]	.185	.000	.520	1.57
	-2	.154	.110	1.00	-.159	.467
-2	Artifact	-.338	.131	.106	-.710	.034
	+1	-.095	.169	1.00	-.573	.384
	+2	.891 [*]	.185	.000	.366	1.42
	-1	-.154	.110	1.000	-.467	.159

* p < .05



21. Order of photos that picture practical use:

Irrelevant $\frac{\quad}{1}$; $\frac{\quad}{2}$; $\frac{\quad}{3}$; $\frac{\quad}{4}$; $\frac{\quad}{5}$ Relevant

Figure 18. Practical Use of Chair Photo Group.

Table 52

Order of the photos that picture practical use

Options	Prctl+1		Prctl+2		Prctl-1		Prctl-2		Artifact	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
1_Irrelevant	50	24.9	84*	41.8*	24	11.9	31	15.4	12	6.0
2	77*	38.3*	55	27.4	28	13.9	28	13.9	13	6.5
3	20	10.0	22	10.9	25	12.4	29	14.4	105*	52.2*
4	34	16.9	15	7.5	44	21.9	75*	37.3*	33	16.4
5_Relevant	20	10.0	25	12.4	80*	39.8*	38	18.9	38	18.9

Table 53

Descriptive Statistics for Practical use of Chair

	Mean	SD	N
Practical Artifact	3.36	1.05	201
Practical+1	2.49	1.30	201
Practical+2	2.21	1.38	201
Practical-1	3.65	1.43	201
Practical-2	3.28	1.32	201

Table 54

Practical Use of Chair Test of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Prctcl	Sphericity Assumed	303.74	4	75.93	35.72	.000	.152
	Greenhouse-Geisser	303.74	2.40	126.48	35.72	.000	.152
	Huynh-Feldt	303.74	2.43	124.86	35.72	.000	.152
	Lower-bound	303.74	1.00	303.74	35.72	.000	.152
Error (Prctcl)	Sphericity Assumed	1700.67	800	2.13			
	Greenhouse-Geisser	1700.67	480.28	3.54			
	Huynh-Feldt	1700.67	486.53	3.50			
	Lower-bound	1700.67	200	8.50			

Table 55

Bonferroni Comparisons For ADVERTISING Group_5 Practical Use of Chair

Source		Mean Diff	Std. Error	Sig. ^a	95% Confidence Interval	
					Lower Bound	Upper Bound
Artifact	+1	.876 [*]	.129	.000	.510	1.24
	+2	1.15 [*]	.136	.000	.763	1.54
	-1	-.284	.130	.303	-.652	.085
	-2	.080	.134	1.00	-.299	.459
+1	Artifact	-.876 [*]	.129	.000	-1.24	-.510
	+2	.274 [*]	.094	.040	.007	.541
	-1	-1.16 [*]	.175	.000	-1.66	-.662
	-2	-.796 [*]	.168	.000	-1.27	-.319
+2	Artifact	-1.15 [*]	.136	.000	-1.54	-.763
	+1	-.274 [*]	.094	.040	-.541	-.007
	-1	-1.43 [*]	.184	.000	-1.96	-.909
	-2	-1.07 [*]	.168	.000	-1.55	-.592
-1	Artifact	.284	.130	.303	-.085	.652
	+1	1.16 [*]	.175	.000	.662	1.66
	+2	1.43 [*]	.184	.000	.909	1.96
	-2	.363 [*]	.107	.009	.058	.668
-2	Artifact	-.080	.134	1.00	-.459	.299
	+1	.796 [*]	.168	.000	.319	1.27
	+2	1.07 [*]	.168	.000	.592	1.55
	-1	-.363 [*]	.107	.009	-.668	-.058

* p < .05

Table 56

Descriptive Statistics for Only EDITORIAL Artifacts

	Mean	SD	N
Wreck Artifact	2.91	1.16	201
Snow Artifact	2.99	.771	201
Emotion Artifact	3.46	1.15	201
Child Artifact	3.23	1.11	201
Damage Artifact	3.40	1.27	201

Table 57

Bonferroni Only EDITORIAL Artifact Comparisons

Comparisons of Only EDITORIAL Artifacts		Mean Diff	SD	Sig. ^a	95% Confidence Interval	
					Lower Bound	Upper Bound
Wreck	Snow	-.075	.096	1.00	-.346	.197
	Emotion	-.547*	.118	.000	-.881	-.214
	Child	-.318	.123	.101	-.666	.029
	Damage	-.488*	.134	.003	-.867	-.108
Snow	Wreck	.075	.096	1.00	-.197	.346
	Emotion	-.473*	.095	.000	-.744	-.202
	Child	-.244	.091	.078	-.501	.014
	Damage	-.413*	.108	.002	-.718	-.108
Emotion	Wreck	.547*	.118	.000	.214	.881
	Snow	.473*	.095	.000	.202	.744
	Child	.229	.101	.241	-.057	.515
	Damage	.060	.112	1.00	-.257	.377
Child	Wreck	.318	.123	.101	-.029	.666
	Snow	.244	.091	.078	-.014	.501
	Emotion	-.229	.101	.241	-.515	.057
	Damage	-.169	.102	.996	-.459	.121
Damage	Wreck	.488*	.134	.003	.108	.867
	Snow	.413*	.108	.002	.108	.718
	Emotion	-.060	.112	1.00	-.377	.257
	Child	.169	.102	.996	-.121	.459

*p < .05

Table 58

Only EDITORIAL Artifacts Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig	Partial Eta Squared
Edtrl Artifact	Sphericity Assumed	47.52	4	11.88	10.03	.000	.048
	Greenhouse-Geisser	47.52	3.44	13.74	10.03	.000	.048
	Huynh-Feldt	47.52	3.53	13.47	10.03	.000	.048
	Lower-bound	47.52	1.00	47.52	10.03	.000	.048
Error (Edtrl)	Sphericity Assumed	947.28	800	1.18			
			691.				
	Greenhouse-Geisser	947.28	71	1.37			
			705.				
	Huynh-Feldt	947.28	36	1.34			
	Lower-bound	947.28	200	4.74			

Table 59

Descriptive Statistics for Only Advertising Artifacts

	Mean	SD	N
Quality Artifact	3.37	1.41	201
Ease Artifact	3.35	1.13	201
Comfort Artifact	3.24	1.02	201
Stitching Artifact	3.40	1.02	201
Practical Artifact	3.36	1.05	201

Table 60

Only ADVERTISING Artifacts Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig	Partial Eta Squared
Ad Artifact	Sphericity Assumed	3.06	4	.765	.695	.595	.003
	Greenhouse-Geisser	3.06	3.74	.818	.695	.586	.003
	Huynh-Feldt	3.06	3.82	.801	.695	.589	.003
	Lower-bound	3.06	1.00	3.06	.695	.405	.003
Error (Ad)	Sphericity Assumed	879.74	800	1.10			
	Greenhouse-Geisser	879.74	747.55	1.18			
	Huynh-Feldt	879.74	763.56	1.15			
	Lower-bound	879.74	200	4.40			

Table 61

Bonferroni Only ADVERTISING Artifact Comparisons

Comparisons of Only EDITORIAL Artifacts		Mean Diff	SD	Sig. ^a	95% Confidence Interval Lower Bound Upper Bound	
Quality	Ease	.025	.101	1.00	-.261	.310
	Comfort	.134	.113	1.00	-.186	.454
	Stitching	-.025	.113	1.00	-.345	.296
	Practical	.010	.121	1.00	-.334	.354
Ease	Wreck	-.025	.101	1.00	-.310	.261
	Comfort	.109	.093	1.00	-.155	.374
	Stitching	-.050	.102	1.00	-.340	.241
	Practical	-.015	.101	1.00	-.303	.273
Comfort	Wreck	-.134	.113	1.00	-.454	.186
	Ease	-.109	.093	1.00	-.374	.155
	Stitching	-.159	.096	.999	-.433	.114
	Practical	-.124	.103	1.00	-.417	.168
Stitching	Wreck	.025	.113	1.00	-.296	.345
	Ease	.050	.102	1.00	-.241	.340
	Comfort	.159	.096	.999	-.114	.433
	Practical	.035	.099	1.00	-.246	.316
Practical	Wreck	-.010	.121	1.00	-.354	.334
	Ease	.015	.101	1.00	-.273	.303
	Comfort	.124	.103	1.00	-.168	.417
	Stitching	-.035	.099	1.00	-.316	.246

*p < .05

Findings related to research question No. 6. Research question No. 6 sought to determine what participants think with regard to level of relevancy for editorial and advertising image attribution; PHOTO BY/, versus GRAPHIC BY/.

For 21.3% ($n = 43$) of participants it is relevant (No. 7) to know a manipulated image contains the credit, Photo By/. Respondents indicate lesser relevance, 18.3% ($n = 37$), for a credit containing Graphic By/ (Tables 62 and 63). In each set of results for

image-type attribution, participants trend towards more relevancy as it relates to knowledge that credited images have been manipulated.

Table 62

*An EDITORIAL image contains the following credit: PHOTO BY/ JOHN DOE.
What is the level of relevancy to you knowing that the image has been manipulated?*

Options	Frequency	Percent	Valid Percent	Cumulative Percent
1_ Irrelevant	10	5.0	5.0	5.0
2	23	11.4	11.4	16.4
3	19	9.4	9.5	25.9
4	33	16.3	16.4	42.3
5	33	16.3	16.4	58.7
6	40	19.8	19.9	78.6
7_ Relevant	43*	21.3*	21.4	100.0

Table 63

*An EDITORIAL image contains the following credit: GRAPHIC BY/ JOHN DOE.
What is the level of relevancy to you knowing that the image has been manipulated?*

Options	Frequency	Percent	Valid Percent	Cumulative Percent
1_ Irrelevant	12	5.9	6.0	6.0
2	21	10.4	10.4	16.4
3	26	12.9	12.9	29.4
4	34	16.8	16.9	46.3
5	37*	18.3*	18.4	64.7
6	35	17.3	17.4	82.1
7_ Relevant	36	17.8	17.9	100.0

of results for image-type attribution, participants trend towards more relevancy as it relates to knowledge that credited images have been manipulated.

Table 64 and 65 each indicate that results for both types of credited image-attribution, Photo By/ or Graphic By/, the greatest number of participants indicate identical frequency (n = 40) and percentage (19.8%), which is the seven-point scale median (No. 4).

Table 64

What is the level of relevancy to you knowing that a manipulated image depicting an ADVERTISEMENT contains the photo credit: PHOTO BY/ JOHN DOE?

Options	Frequency	Percent	Valid Percent	Cumulative Percent
1_Irrelevant	23	11.4	11.4	11.4
2	35	17.3	17.4	28.9
3	34	16.8	16.9	45.8
4	40*	19.8*	19.9	65.7
5	17	8.4	8.5	74.1
6	26	12.9	12.9	87.1
7_Relevant	26	12.9	12.9	100.0

Table 65

What is the level of relevancy to you knowing that a manipulated image depicting an ADVERTISEMENT contains the photo credit: GRAPHIC BY/ JOHN DOE?

Options	Frequency	Percent	Valid Percent	Cumulative Percent
1_Irrelevant	26	12.9	12.9	12.9
2	36	17.8	17.9	30.8
3	25	12.4	12.4	43.3
4	40*	19.8*	19.9	63.2
5	23	11.4	11.4	74.6
6	28	13.9	13.9	88.6
7_Relevant	23	11.4	11.4	100.0

*Greatest percentage

CHAPTER V

DISCUSSION

Chapter I asked: Would a final adjustment of only, purposely, varying levels of luminance contrast in an image acceptable for publication have an effect on perception? The chapter then provided background for this paper's study on what some may view as a seemingly inconsequential aspect of the digital imaging processes, the effect of luminance contrast on stakeholder perception.

Chapter II studied organizational culture, communication theory, the human visual system and processes involved in the aestheticization of artifactualizations. This chapter also addressed the application of new terminology to digital imaging processes.

Chapter III explained the methodological procedures used to develop, collect, and analyze this study. Procedures to increase validity and reliability also were addressed. This chapter also provided the sampling methods used to gather and collect responses.

Chapter IV provided the major findings of this study. This chapter addressed specific research questions about participant perception-levels in their responses. Respondents who completed the online survey represented a convenience sample of community newspaper website users who patronize publications from Community Publishers, Inc.

This chapter provides a summary of the purpose and objectives of this study. Results from the survey were used to determine some of the characteristics of participant value they hold with regard to level of knowledge about digital photographic equipment and expertise; level of perception between within-groups of images that only vary in luminance contrast; and level of value they hold with regard to knowledge that digital images in print have been altered.

Discussion. The first series of survey questions were designed with two purposes. First, the researcher has interest to learn if users of digital photographic equipment hold value in their level of knowledge of how a digital camera records an image. Secondly, the researcher thought it necessary to begin the survey with questions that require fewer steps to complete than the follow-on, main survey questions.

Table 66
Level of Concern General: Equipment & Expertise

Options*	Expertise		Changes		Camera Type		How Take Pics		Depth of Field	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
1_ Of no concern										
2									37	18.3
3	47	23								
4	47	23							37	18.3
5			43	21.3	46	28.2	45	22.3		

* Seven-point scale

Research question No. 5 is the main focus of this study. Is there an effect on perception between choices of the artifactualization to a member within its group of tonal artifactualizations, for editorial and advertising images? Although RQ5 garnered the most effort to investigate and report results, the findings are simpler to state than the findings from the initial and final groups of survey questions.

The final groups of survey questions were included in order to gain a measure on level of relevancy to how images are credited.

Summary. It is clear that participants think their level of expertise, which includes depth of field, in digital photography trends more toward the level of no concern than it does to the level of concern. This indicates expertise in digital photography is not a concern for users. Level of concern is greater for the type of digital camera, making changes to a digital image and how a camera takes a picture.

Respondents indicate the value of making changes to an image and the type of digital camera used is of greater concern than it is of no concern. The overall trend continues as results indicate one-quarter of respondents have more concern compared to a lesser amount for how a digital camera takes pictures.

Table 67

Level of Concern: Photo Manipulation

Options	EDITORIAL				ADVERTISING			
	Photoshopped		Anything Done		Photoshopped		Anything Done	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.
2							36	17.8
5					39	19.3		
7 Means a lot	65	32.2	54	26.7				

Table 68

Level of Concern: Exact Knowledge & Made to look Pleasing

Options	EDITORIAL				ADVERTISING			
	Exact Knowledge		Pleasing		Exact Knowledge		Pleasing	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.
2					36	17.8		
4							40	19.8
7 Means a lot	54	26.7	55	27.2				

Respondents indicate it means a lot to them for knowledge that editorial images in the news section of a publication have been photoshopped or altered. Compared to photoshopped or altered advertising images in the news section, the value for level of knowledge is less meaningful.

In all cases, as evidenced in tables 69 and 70, participants rank the artifact at the median level in both the E-ATAG and the A-ATAG. In all instances, the artifact was solely the most chosen image at the median level. In either the E-ATAG or the A-ATAG, Participants did not *most* choose a variation of the artifact at the median level.

Table 69

All EDITORIAL Artifacts rank greatest at median, No. 3, Means nothing – Means a lot

Wreck		Snow		Emotion*		Child		Damage*	
N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
73	36.3	143	71	80	39.8	95	47.3	76	37.8

* Also Means a lot

Table 70

All ADVERTISING Artifacts rank greatest at median, No. 3, Irrelevant – Relevant

Quality*		Ease		Comfort		Stitching		Practical	
N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
64	31.8	71	35.3	125	62.2	90	44.8	105	52.2

*Also Relevant

Table 71

Level of Relevancy for Image Credit Type – Photo or Graphic

Options	EDITORIAL				ADVERTISING			
	Photo By		Graphic By		Photo By		Graphic By	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.
4					40	19.8	40	19.8
5			37	18.3				
7 Relevant		43	21.3					

However, for Emotion, Damage, and Quality, the artifact also received the greatest rank at level No. 5 for means a lot and relevant, respectively. These measures indicate the

greatest percentage of participant perception (IV) saw the artifact as neither *most* nor *least*, in their respective groups, for EDITORIAL or ADVERTISING (DV). How an image is titled is relevant for EDITORIAL, but less so for ADVERTISING. The purpose of the question is to determine the level of perception on how an image is credited, as a photo or a graphic. Using the “graphic,” not “photo” is an indication that the image is something other than a photo.

For participants it is relevant to know a manipulated image contains the credit, Photo By. Respondents indicate lesser relevance for a credit containing Graphic By. In each set of results for image-type attribution, participants trend towards more relevancy as it relates to knowledge that credited images have been manipulated. The greatest number of respondents indicates the identical frequency, median, in ADVERTISING for Photo By or Graphic By.

Based on these findings, research indicates that participants have little to moderate concern for technical expertise when taking a picture using a digital camera, based on a seven-point value scale. For participants, changes they make to an image, the type of camera they use and how their camera takes a picture is of more value to them than that of technical expertise in using a camera. But, none of these factors are the most concern on the scale.

Within a news publication, participants indicate polar extremes along a seven-point scale for meaning when comparisons are made between EDITORIAL and ADVERTISING images. These findings indicate that participants place a high-value on knowledge of exact information on anything done to alter the original appearance of a digitally-captured image used for editorial purposes. The aestheticization of imagery used

by news organizations is undeniable. Whether the aestheticization is the result of correcting a mistake made by the photographer at the time of exposure, or the intentional effort to make something more beautiful than it is in reality, artifactualization allows for great or small amounts of image aestheticization. That stakeholders are unaware of the aestheticization is a concern. When, as this study indicates, aestheticization is done to an image after the image is acceptable for publication, the aestheticization can have an effect on perception.

This study introduced tonal artifactualization in an effort to quantify only the adjustment of luminance contrast to an image after the image is deemed technically appropriate for publication. It is clear that varying only luminance contrast in an image after all other adjustments have been completed, has value, meaning, and relevance compared to a null view of the same.

The findings indicate electronically varying only levels of luminance contrast in still imagery has an effect on perception. Thus, H1 is supported. Further, when this adjustment is done after all other adjustments, with the intent to have an effect on stakeholder perception, the image can be categorized as a tonal artifactualization.

How images are credited in the news section of a publication, according to this study, indicate a high-level of relevance for hard news pictures and a median level of relevancy for advertising pictures.

Limitations. This study has limitations as a result of its survey design, convenience sample and limits on the technology used by subjects to complete the instrument.

Utilizing a value scale may or may not have been familiar to participants. Depending on one's sociological imagination, they may have been more comfortable ranking their most-preferred item as No. 1, progressing to their least-preferred. The side-by-side comparisons of photos were necessary to complete the main portion of the quasi-experiment. The researcher had no way of knowing the visual acuity possessed by each participant or the surrounding ambient light at the time respondents completed the survey. This study only used images rendered to the standard RGB (red, green, blue) scale, not CMYK (cyan, magenta, yellow, green) scale commonly used for print publication. For this study, because participants viewed images on a computer, the RGB scale is wholly appropriate. If participants made choices while viewing a piece of newsprint, the CMYK scale would have been used.

The findings indicate participants value hardware more than they do technical expertise. The ability to differentiate between subtle variations of luminance contrast requires a modicum of technical expertise. From perception, one decides to assign meaning and importance (Emmett 2010). Not only does imagery deeply affect people, many scholars including Emmett (2010), Osberger (1999), Tsanov and Manahan-Vaughan (2008), and Rudd (2010) have shown that the affect occurs in seconds, with great effect from light.

The researcher has no idea on what type of platform participants viewed the imagery when ranking photos. Each manufacturer has a specific calibration requirement for computer monitors, including the graphical user interface of cell phones, tablets and laptop computers. It is unknown how many, if any, of the participants viewed the images from a properly-calibrated device.

Future Recommendations. Future research on how stakeholders regard an image based on its credit may yield usable information whether there is a need for additional categories. Specifically, when an artist's rendering or a graph is credited as such, stakeholders gain explicit, immediate knowledge that what they are viewing is the construction and manipulation of its creator. The same cannot be said of images credited *Photo By*. Stakeholders have no idea of the amounts and types of manipulations done to the image prior to its publication. Upon seeing something other than *Photo By* as the photo credit may indicate to the stakeholder that some type of manipulation or alteration has been done to the image.

A study utilizing a mixed methodology may provide insight into this type of research. The combination of qualitative and quantitative data may allow a researcher to learn why participants think and feel as they do with regard to varying levels of luminance contrast.

Conclusion. Despite limitations, this study is of value to the field of editorial and advertising photography. Professional, school-trained journalists are increasingly becoming responsible for producing *art* – images accompanying written copy. Additionally, often times images originally captured for editorial purposes are used in advertisements.

The equipment used to gather imagery ranges from cellphone cameras to multi-thousand dollar digital platforms. Many times, with no ill intent, reporters use computer software to correct imagery. For example, light emitted from standard fluorescent light bulbs casts a green hue. The green hue must be removed during the rendering process or the subject in the photo will be cast in a poor light.

Line-reporters who must shoot their own art, photojournalist and photo editors can each take away from the study the fact that something as minute as a final adjustment of luminance contrast has the ability to have an effect on stakeholder perception.

Indeed, tonal artifactualizations in still imagery may effect viewer perceptions of events and, or, marketing materials.

References

- Alvarez, P. (2004). Using extended file information (EXIF) file headers in digital evidence analysis. *International Journal of Digital Evidence*, 2(3), 1-5.
- Austin, E. W., & Pinkleton, B. E. (2006). *Strategic public relations management: Planning and managing effective communication programs*. Mahwah, N.J: Lawrence Erlbaum Associates.
- Braggs, S., Braggs, S., & Harris, D. (2006). *Sun, sea and sand: The great British seaside holiday*. Stroud: Tempus.
- Bruner, G. C. (1996). *Marketing scales handbook 2*. Chicago: Ill. American Marketing Ass.
- Butts, H. F. (1963). Skin color perception and self-esteem. *The Journal of Negro Education*, 32(2), pp. 122-128. Retrieved from <http://www.jstor.org/stable/2294388>
- Carlson, A. (2000). *Aesthetics and the environment: The appreciation of nature, art, and architecture*. London: Routledge.
- Cherry, A. L. (1994). *The socializing instincts: Individual, family and social bonds*. Westport, Conn: Praeger.

- Cobley, P., & Haeffner, N. (2009). Digital cameras and domestic photography: Communication, agency and structure. *Visual Communication*, 8(2), 123-146.
- Cohen, A. (1995). *The Kubrick site: Alexander Cohen on "A clockwork orange"* Retrieved 10/9/2011, 2011, from <http://www.visual-memory.co.uk/amk/doc/0025.html>
- Cooley, C. H. (1902). *Human nature and the social order*. New York: Scribner.
- Davison, J. (2006). Photographs and accountability: Cracking the codes of an NGO. *Accounting, Auditing & Accountability Journal*, 15(4), 594-608.
- Eitzen, D. S., Zinn, M. B., & Smith, K. E. (2009). *Social problems*. Boston: Pearson/Allyn and Bacon.
- Emmett, A. (2010). *Toward a Unified Theory of Cognitive Aesthetic Processing*. (Unpublished article). University of Maryland, College Park.
- Fridrich, J., Lukáš, J., & Goljan, M. (2006). Sensor noise camera identification: countering counter-forensics. *Proceedings of SPIE - The International Society for Optical Engineering* 7541 2010.
- Formankiewicz, M. A., & Mollon, J. D. (2009). The psychophysics of detecting binocular discrepancies of luminance. *Vision Research*, 49(15), 1929-1938.
doi:10.1016/j.visres.2009.05.001
- Gagliardi, P. (1990). *Symbols and artifacts: Views of the corporate landscape*. Berlin; New York: W. de Gruyter.

- Gagliardi, P. (1999). *Translating organizational change (review)*.
- Gilbert, N. (2009). Science journals crack down on image manipulation *Nature*, doi:10.1038/news.2009.991
- Gloe, T., Kirchner, M., Winkler, A., & Böhme, R. (2007). Can we trust digital image forensics? *Proceedings of the 15th international Conference on Multimedia* (Augsburg, Germany, September 25 - 29, 2007). MULTIMEDIA '07. ACM, New York, New York 78-86.
- Gordon, I. E. (2004). *Theories of visual perception* (3rd ed.). Hove, East Sussex ; New York: Psychology Press.
- Grabe, E. M., & Westley, B. H. (2003). The controlled experiment. In Stempel, G. H., Weaver, D. H., & Wilhoit, G. C. (2003). *Mass communication research and theory* (pp. 267-298). Boston: Allyn and Bacon.
- Hallahan, K., Holtzhausen, D., van Ruler, B., Verčič, D., & Sriramesh, K., (2007). Defining strategic communication. *International Journal of Strategic Communication*, 1(1),3-35
- Hames, I. (2008). Digital images and the problem of inappropriate manipulation: Can you believe what you see? *Journal of the European Medical Writers Association*, 17(4), 164-167.
- Hancock, P. (2002). Aestheticizing the world of organization: Creating beautiful untrue things. *TAMARA: Journal of Critical Postmodern Organization Science*, 2(1), 91-103.

- Hancock, P. (2005). Uncovering the semiotic in organizational aesthetics. *Organization*, 12(1), 29-50.
- Hansen, H., Ropo, A., & Sauer, E. (2007). Aesthetic leadership. *The Leadership Quarterly*, 18(6), 544-560. doi:10.1016/j.leaqua.2007.09.003
- Harper, D. (2002). Talking about pictures: A case for photo elicitation. *Visual Studies*, 17(1), 13-26.
- Hatch, M. J. (1993). The dynamics of organizational culture. *The Academy of Management Review*, 18(4), 657-693.
- Hatch, M. J., & Cunliffe, A. L. (2006). *Organization theory: Modern, symbolic, and postmodern perspectives* (2nd ed.). Oxford; New York: Oxford University Press.
- Hatch, M. J., & Schultz, M. (2002). The dynamics of organizational identity. *Human Relations*, 55(8), 989-1018.
- Head, S. (2003). *The new ruthless economy: Work & power in the digital age*. Oxford: Oxford University Press.
- Hendee, W. R., & Wells, P. N. T. (1997). *The perception of visual information*. New York: Springer.
- Henderson, J. M. (2007). Regarding scenes. *Current Directions in Psychological Science*, 16(4), 219-222. doi:10.1111/j.1467-8721.2007.00507.x

- Hofstede, G., Neuijen, B., Ohayv, D. D., & Sanders, G. (1990). Measuring organizational cultures: A qualitative and quantitative study across twenty cases. *Administrative Science Quarterly*, 35(2), 286-316.
- Jackall, R. (1988). *Moral mazes: The world of corporate managers*. New York: Oxford University Press.
- Joy, A., Sherry Jr., J. F., & Deschenes, J. (2009). Conceptual blending in advertising. *Journal of Business Research*, 62(1), 39-49.
- Kersten, A. (2008). When craving goodness becomes bad: A critical conception of ethics and aesthetics in organizations. *Culture & Organization*, 14(2), 187-202.
- Kogut, B., & Zander, U. (1996). What firms do? Coordination, identity, and learning. *Organization Science*, 7(5), 502-518.
- Lash, S., & Lury, C. (2007). *Global culture industry: The mediation of things*. Cambridge: Polity.
- Leong, F.J.W.M., Brady, M. & McGee, J.O. (2003) *Correction of uneven illumination (vignetting) in digital microscopy images*. *J. Clin. Pathol.* 56 (8), 619–621.
- Lippmann, W. (1991). Public opinion ([Nachdr. d. Ausg.] Macmillan, 1922 ed.). New Brunswick, NJ, USA: Transaction Publ.
- Lowery, S., & DeFleur, M. L. (1995). *Milestones in mass communication research: Media effects* (3rd ed.). White Plains, N.Y: Longman Publishers USA.

Luders, M. (2008). Conceptualizing personal media. *New Media & Society*, 10(5).

Lukac, R. (2011). *Computational photography: Methods and applications*. Boca Raton, FL: CRC Prss.

Lukáš, J., Fridrich, J., & Goljan, M. (2005). Determining digital image origin using sensor imperfections. *Conference Proceedings in SPIE*, 5685(1), 249-260.
doi:10.1117/12.587105

Martin, M., Fleming, R., Sorkine, O., & Gutierrez, D. (2008). Understanding exposure for reverse tone mapping. In *Congreso Español de Informática Gráfica*, 189--198.

Margolis, E., & Pauwels, L. (2011). *The SAGE handbook of visual research methods*. Los Angeles: SAGE.

Mead, G. H., & In Morris, C. W. (1934). *Mind, self & society from the standpoint of a social behaviorist*. Chicago, Ill: University of Chicago Press.

McCombs, M. E. (2004). *Setting the agenda: The mass media and public opinion*. Cambridge [u.a.: Polity [u.a.].

Mertler, C. A., & Vannatta, R. A. (2010). *Advanced and multivariate statistical methods: Practical application and interpretation* (4th ed.). Glendale, CA: Pyrczak.

Miles, M. (2005). The burning mirror: Photography in an ambivalent light. *Journal of Visual Culture*, 4(3), 329-349.

Monnin, A. (2009). *Artifactualization: Introducing a new concept*.

- Munir, K. A., & Phillips, N. (2005). The birth of the 'Kodak moment': Institutional entrepreneurship and the adoption of new technologies. *Organization Studies*, 26(11), 1665-1687.
- Novak, T. (2006). The social construction of unreality: The mass media and the 'Aestheticization' of the public sphere. *The New School for Social Research Graduate Conference on Critical Themes in Media Studies*, New York, New York.
- Osberger, W., & Queensland University of Technology. (1999). *Perceptual vision models for picture quality assessment and compression applications*.
- Osberger, W., & Maeder, A. J. (1998). Automatic identification of perceptually important regions in an image. Paper presented at the *Pattern Recognition, 1998. Proceedings. Fourteenth International Conference on*, , 1 701-704 vol.1.
- Patterson, P., & Wilkins, L. (2011). *Media ethics: Issues and cases*. New York: McGraw-Hill.
- Pepper, G. L., & Larson, G. S. (2006). *Overcoming information communication technology problems in a post-acquisition organization (corporate merger success)*.
- Percy, L., & Elliott, R. H. (2009). *Strategic advertising management* (3rd ed.). Oxford; New York: Oxford University Press.
- Petersen, C. (1992, September 13). How to watch TV news, by Neil Postman and Steve Powers. Chicago Tribune.

Pember, D. R., & Calvert, C. (2008). *Mass media law* (2009-2010 ed.). Boston: McGraw-Hill College.

Photoshopped - definition and more from the free Merriam-Webster dictionary Retrieved 10/8/2011, 2011, from <http://www.merriam-webster.com/dictionary/photoshopped>

Photographic products industry profile: Global. (2010). Datamonitor Plc. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=buh&AN=49736536&site=ehost-live>

Pittard, N., Ewing, M., & Jevons, C. (2007). Aesthetic theory and logo design: Examining consumer response to proportion across cultures. *International Marketing Review*, 24(4), 457-473.

Postman, N., & Powers, S. (2008). *How to watch TV news* (Rev. ed.). New York: Penguin

Pratkanis, A. R., & Aronson, E. (2002). *Age of propaganda: The everyday use and abuse of persuasion*. New York: W.H. Freeman.

Rafaeli, A., & Pratt, M. G. (2006). *Artifacts and organizations: Beyond mere symbolism*. Mahwah, N.J: Lawrence Erlbaum.

Rafaeli, A., & Vilnai-Yavetz, I. (2004). Instrumentality, aesthetics and symbolism of physical artifacts as triggers of emotion. *Theoretical Issues in Ergonomics Science*, 5(1), 91-112.

- Raskar, R., Tumblin J., Mohan, A., Agrawal, A., & Li, Y. (2006). Computational photography. *In Wyvill Raskar: STAR and Wilkie* [75], pp. 1–20. Eurographics 06 STAR.
- Rudd, M. E. (2010). How attention and contrast gain control interact to regulate lightness contrast and assimilation: A computational neural model. *Journal of Vision*. 10(14):40, 1–37, doi:10.1167/10.14.40.
- Savakis, A.E., Etz, S.P. & Loui, A.C.P. (2000). Evaluation of image appeal in consumer photography. *SPIE Human Vision and Electronic Imaging V*, San Jose, California, USA. , 3859(1) 111-120. doi:10.1117/12.387147
- Saxon, W. (2003, October 09). *Neil Postman, 72 media critic dies*. New York Times.
- Smith, K., Moriarty, S., Barbatsis, G. & Kenney, K. (2005). *Handbook of visual communication research: Theory, methods, and media*. Mahwah, N.J: L. Erlbaum.
- Stanislas, D. (2003). The neural basis of the Weber–Fechner law: A logarithmic mental number line. *Trends in Cognitive Sciences*, 7(4), 145-147. doi:10.1016/S1364-6613(03)00055-X
- Story, D. (2000). Story photograpy: History of Photoshop. Retrieved 10/7/2011, 2011, from http://www.storyphoto.com/multimedia/multimedia_photoshop.html
- Strangleman, T. (2008). Representations of labour: Visual sociology and work. *Sociology Compass*, 2(5),1491–1505.

- Strati, A. (1992). Aesthetic understanding of organizational life. *Academy of Management Review*, 17(3), 568-581.
- Strati, A. (2005). Designing organizational life as 'aesth-hypertext': Insights to transform business practice. *Organization*, 12(6), 919-923.
- Strati, A. (1999). *Organization and Aesthetics*. Sage: London
- Strati, A. (2000). The Aesthetic Approach in Organization Studies_in H. Hopfl & S. Linstead (eds.) *The Aesthetics of Organization*. Sage: London pp.13-34
- Taylor, S., & Hansen, H. (2005). Finding Form: Looking at the field of organizational aesthetics. *Journal of Management Studies*, 42(6), 1211-1231.
- Thompson, W. E., & Hickey, J. V. (2011). *Society in focus: An introduction to sociology* (6th ed.). Boston: Pearson/Allyn and Bacon.
- Tsanov, M., & Manahan-Vaughan, D. (2008). Synaptic plasticity from visual cortex to hippocampus: Systems integration in spatial information processing. *The Neuroscientist*, 14(6), 584-597. doi:10.1177/1073858408315655
- Wang, C., & Ye, Z. (2007). Perceptual contrast-based image fusion: A variational approach. *Acta Automatica Sinica*, 33(2), 132-137. doi:10.1360/aas-007-0132
- Warren, S. (2005). *Creating creativity: The organizational manipulation of aesthetics in a web-design department*. (Working paper No. 9). SE-100 44 Stockholm, SWEDEN:

Royal Institute of Technology, Department of Industrial Economics and Management.
doi: ISSN 1650-4062

Warren, S. (2008). Empirical challenges in organizational aesthetics research: Towards a sensual methodology. *Organization Studies*, 29(4), 559-580.

Warren, S. & Fineman., S. (2007). Don't get me wrong but... ambivalence and paradox in a 'fun' work environment' in C. Rhodes & B. Westwood (eds.) *Humour, Organization and Work*, Routledge: London, pp. 92 – 112

Warren, S. (2007). Organizational topophilia: The countryside and aesthetic pleasure at work. *Aesthesis*, 1(1), 6 – 45.

Warren, S. (2005). Photography and Voice in Critical Qualitative Management Research. *Accounting, Auditing and Accountability Journal*, 18(6), 861 – 882

Warren, S. (2002). Show me how it feels to work here: Using photography to research organizational aesthetics. *Paper submitted to 'Ephemera: Critical Dialogues on Organization' as part of the special issue 'After Organization Studies.'* Revised, August 2002.

Witkin, R. S. (2009). The aesthetic imperative of a rational-technical machinery: A study in organizational control through the design of artifacts. *Music and Arts in Action*, 2(1), 56-68.

Xie, Z., & Stockham, T. G., Jr. (1989). Toward the unification of three visual laws and two visual models. *Systems, Man and Cybernetics, IEEE Transactions on*, 19(2), 379-387.

APPENDICES

APPENDIX A

Institutional Review Board Approval

Oklahoma State University Institutional Review Board

Date: Wednesday, February 22, 2012
IRB Application No AS1223
Proposal Title: Tonal Artifactualizations: Light-to-Dark in Still Imagery and Effects on Perception
Reviewed and Processed as: Exempt

Status Recommended by Reviewer(s): Approved Protocol Expires: 2/21/2013

Principal Investigator(s):

Gregory B. Poindexter	Lori McKinnon
1900 s. Gardenia Ave.	3301 Cumberland Dr.
Broken Arrow, OK 74012	Edmond, OK 73034

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

☒ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Beth McTernan in 219 Cordell North (phone: 405-744-5700, beth.mcternan@okstate.edu).

Sincerely,



Shelia Kennison, Chair
Institutional Review Board

APPENDIX B

Appendix B: Recruitment post

Title:

Brief survey: Chance to determine how you feel about digital pictures and assist your local newspaper.

Message:

Would you like to know how important pictures are to you?

Would you like to compare pictures like professional photographers do?

Please click on the link below to take a short survey on digital imagery, and you can do both!

Under 18? Sorry, but you cannot participate due to University guidelines.

Even if you are not into taking pictures or own a camera, I am still interested in your opinion. Please take a few minutes to help us learn what you think and how you feel about digital photography!

<survey link>



APPENDIX C

SURVEY INSTRUMENT

Images

Survey Instructions

SURVEY: IMAGES

Primary Researcher: Gregory B. Poindexter, Oklahoma State University
Advisor: Lori K. McKinnon, Ph.D., Oklahoma State University

Thank you for participating in this research study.

The following survey is designed to collect data on how people think and feel with regard to pictures used in print publications.

Here are a few things you should know:

- 1) Your participation is voluntary. You can quit the survey at any time.
- 2) This survey will take less than 20 minutes to complete.
- 3) You must be at least 18 years old to take this survey.
- 4) This survey can only be taken once on any computer
- 5) Your answers to this survey will be anonymous and the records of this study will be kept private. Research records will be stored securely and only researchers and individuals responsible for research oversight will have access to the records.
- 6) There are no known risks associated with this project which are greater than those ordinarily encountered in daily life.
- 7) This survey is part of a master's degree program at Oklahoma State University. If you have any questions you may contact Gregory Poindexter at gpoinde@okstate.edu.
- 8) If you have questions about your rights as a research volunteer, you may contact Dr. Shelia Kennison, IRB Chair
219 Cordell North
Stillwater, OK 74078
405-744-3377, or irb@okstate.edu
- 9) By completing this survey, you are giving your consent to participate.

1. Are you at least 18 years old?

- ☐ Yes
☐ No

Images

Copy of page: Survey Instructions

The survey asks you questions and it asks you to order images based on how you see them.

There are no trick questions on the survey, and there are no correct or incorrect responses.

The survey has four sections:

- No. 1 asks you general and specific questions about digital photography equipment and developing processes
- No. 2 asks what you think about manipulation of digital imagery
- No. 3 asks you to order groups of images based on how you see them
- No. 4 asks what your feelings are on the names used to caption pictures

2. Before you begin, please tell us your gender:

	Female		Male
Gender:	<input type="radio"/>		<input type="radio"/>

3. In what year were you born? (enter 4-digit birth year; for example, 1976)

Images

Section No. 1

Section Directions

For the following set of questions, select the corresponding number that best describes what you think on the scale above.

Please use the following scale:

Of no concern $\frac{\quad}{1}$; $\frac{\quad}{2}$; $\frac{\quad}{3}$; $\frac{\quad}{4}$; $\frac{\quad}{5}$; $\frac{\quad}{6}$; $\frac{\quad}{7}$ Of concern to me

Example: I must have the latest camera equipment.

Of no concern $\frac{\quad}{1}$; $\frac{\quad}{2}$; $\frac{\mathbf{X}}{3}$; $\frac{\quad}{4}$; $\frac{\quad}{5}$; $\frac{\quad}{6}$; $\frac{\quad}{7}$ Of concern to me

Images

Section No. 1

Of no concern ; ; ; ; ; ; Of concern to me
 1 2 3 4 5 6 7

4. How much expertise I have in digital photography is _____ to me.

- ☐ Of no concern;
- ☐ 2;
- ☐ 3;
- ☐ 4;
- ☐ 5;
- ☐ 6;
- ☐ 8;
- ☐ Of concern

Images

Section No. 1

Of no concern ; ; ; ; ; ; Of concern to me
 1 2 3 4 5 6 7

5. Making changes to digital pictures is _____ to me.

- ☐ Of no concern;
- ☐ 2;
- ☐ 3;
- ☐ 4;
- ☐ 5;
- ☐ 6;
- ☐ 7;
- ☐ Of concern

Images

Section No. 1

Of no concern ; ; ; ; ; ; Of concern to me
 1 2 3 4 5 6 7

6. The type of digital camera I use is _____ to me.

- ☐ Of no concern;
- ☐ 2;
- ☐ 3;
- ☐ 4;
- ☐ 5;
- ☐ 6;
- ☐ Of concern

Images

Section No. 1

Of no concern ; ; ; ; ; ; Of concern to me
 1 2 3 4 5 6 7

7. How a digital camera to takes pictures is _____ to me.

- ☐ Of no concern;
- ☐ 2;
- ☐ 3;
- ☐ 4;
- ☐ 5;
- ☐ 6;
- ☐ Of concern

Images

Section No. 1

Of no concern ; ; ; ; ; ; Of concern to me
 1 2 3 4 5 6 7

8. For digital photography, "depth of field" is _____ to me.

- ☐ Of no concern;
- ☐ 2;
- ☐ 3;
- ☐ 4;
- ☐ 5;
- ☐ 6;
- ☐ Of concern

Images

Section No. 2

Section Directions

For the following set of questions, select the corresponding number that best describes what you think on the scale above.

Please read the following scale:

Means nothing _____; _____; _____; _____; _____; _____; _____ Means a lot to
to me 1 2 3 4 5 6 7 me

Example: The term "faked" _____ as it relates to a photo for a movie poster.

Means nothing _____; **X** _____; _____; _____; _____; _____; _____ Means a lot to
to me 1 2 3 4 5 6 7 me

Images

Section No. 2

Means nothing _____; _____; _____; _____; _____; _____; _____ Means a lot to
to me 1 2 3 4 5 6 7 me

9. The term "photoshopped" _____, as it relates to EDITORIAL (hard news) images in the News section of a print publication.

- ☐ Means nothing to me;
- ☐ 2;
- ☐ 3;
- ☐ 4;
- ☐ 5;
- ☐ 6;
- ☐ Means a lot to me

Images

Section No. 2

Means nothing _____; _____; _____; _____; _____; _____; _____ Means a lot to
to me 1 2 3 4 5 6 7 me

10. The term "photoshopped" _____, as it relates to ADVERTISING images placed in the News section of a print publication.

- ☐ Means nothing to me;
- ☐ 2;
- ☐ 3;
- ☐ 4;
- ☐ 5;
- ☐ 6;
- ☐ Means a lot to me

Images

Section No. 2

Means nothing _____; _____; _____; _____; _____; _____; _____ Means a lot to
to me 1 2 3 4 5 6 7 me

11. It _____ if anything is done to an EDITORIAL (hard news) image before it appears in print.

- ☐ Means nothing to me;
- ☐ 2;
- ☐ 3;
- ☐ 4;
- ☐ 5;
- ☐ 6;
- ☐ Means a lot to me

Images

Section No. 2

Means nothing _____; _____; _____; _____; _____; _____; _____ Means a lot to
to me 1 2 3 4 5 6 7 me

12. It _____ if anything is done to an ADVERTISING image before it appears in print.

- ☐ Means nothing to me;
- ☐ 2;
- ☐ 3;
- ☐ 4;
- ☐ 5;
- ☐ 6;
- ☐ Means a lot to me

Images

Section No. 2

Means nothing _____; _____; _____; _____; _____; _____; _____ Means a lot to
to me 1 2 3 4 5 6 7 me

13. It _____ that I know exactly what was done to an EDITORIAL (hard news) image that appears in a print publication.

- ☐ Means nothing to me;
- ☐ 2;
- ☐ 3;
- ☐ 4;
- ☐ 5;
- ☐ 6;
- ☐ Means a lot to me

Images

Section No. 2

Means nothing _____; _____; _____; _____; _____; _____; _____ Means a lot to
to me 1 2 3 4 5 6 7 me

14. It _____ that I know exactly what was done to an ADVERTISING image that appears in a print publication.

- ☐ Means nothing to me;
- ☐ 2;
- ☐ 3;
- ☐ 4;
- ☐ 5;
- ☐ 6;
- ☐ Means a lot to me

Images

Section No. 3-A

Section Directions

A. This section covers EDITORIAL (hard news) photos

Each group has five pictures:



• Please arrange the order of images, according to their meaning to you

• Order the photos accordingly, by using the following scale:

Means nothing to me ; ; ; ; Means a lot to me
 1 2 3 4 5

Images

Section No. 3-A

Example: Order of the photos that picture heavy rain:

Means nothing $\frac{A}{1}$; $\frac{E}{2}$; $\frac{C}{3}$; $\frac{B}{4}$; $\frac{D}{5}$ Means a lot to me
to me

Images

Section No. 3-A

Means nothing to me ; ; ; ; Means a lot to me
 1 2 3 4 5



15. Order of the photos that picture seriousness of traffic collision:

	A	B	C	D	E
1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Images

Section No. 3-A

Means nothing to me —; —; —; —; — Means a lot to me
1 2 3 4 5



16. Order of the photos that picture snow storm:

	A	B	C	D	E
1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Images

Section No. 3-A

Means nothing _____; _____; _____; _____; _____ Means a lot to me
to me 1 2 3 4 5



17. Order of the photos that picture emotional connection:

	A	B	C	D	E
1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Images

Section No. 3-A

Means nothing to me ———; ———; ———; ———; ——— Means a lot to me
 1 2 3 4 5



18. Order of the photos that picture cuteness of child in stroller:

	A	B	C	D	E
1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Images

Section No. 3-A

Means nothing to me ; ; ; ; Means a lot to me
 1 2 3 4 5



19. Order of the photos that picture storm damage:

	A	B	C	D	E
1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

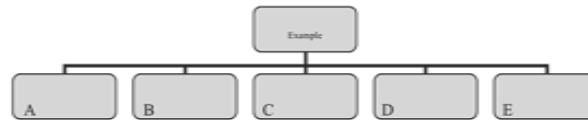
Images

Section No. 3-B

Section Directions

B. This section covers ADVERTISEMENT photos

- Each group has five pictures:



- Please arrange the order of images, according to their meaning to you

- Order the photos accordingly, by using the following scale:

Irrelevant ; ; ; ; Relevant
 1 2 3 4 5

Images

Section No. 3-B

Example: Order of the photos that picture a functional chair:

Irrelevant $\frac{A}{1}$; $\frac{E}{2}$; $\frac{C}{3}$; $\frac{B}{4}$; $\frac{D}{5}$ Relevant

Images

Section No. 3-B

Irrelevant ; ; ; ; Relevant
 1 2 3 4 5



20. Order of the photos that picture quality:

	A	B	C	D	E
1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Images

Section No. 3-B

Irrelevant ; ; ; ; Relevant
 1 2 3 4 5



21. Order of the photos that picture ease of use:

	A	B	C	D	E
1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Images

Section No. 3-B

Irrelevant ; ; ; ; Relevant
 1 2 3 4 5



22. Order of the photos that picture comfort:

	A	B	C	D	E
1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Images

Section No. 3-B

Irrelevant ; ; ; ; Relevant
 1 2 3 4 5



23. Order of the photos that picture quality of stitching:

	A	B	C	D	E
1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Images

Section No. 3-B

Irrelevant ; ; ; ; Relevant
 1 2 3 4 5



24. Order of the photos that picture practical use:

	A	B	C	D	E
1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Images

Section No. 4

Section Directions

For the following set of questions, select the corresponding number that best describes what you think on the scale above.

Please read the following scale:

Irrelevant ; ; ; ; ; ; Relevant
 1 2 3 4 5 6 7

Images

Section No. 4

Example: What level of relevancy is the knowledge that an image in a photo is more beautiful than reality?

Irrelevant $\frac{\quad}{1}$; $\frac{\mathbf{X}}{2}$; $\frac{\quad}{3}$; $\frac{\quad}{4}$; $\frac{\quad}{5}$; $\frac{\quad}{6}$; $\frac{\quad}{7}$ Relevant

Images

Section No. 4

Irrelevant —; —; —; —; —; —; — Relevant
1 2 3 4 5 6 7

25. What level of relevancy is the knowledge of whether or not an EDITORIAL (hard news) photo has been altered to make it appear pleasing in news publications?

- ☐ Irrelevant;
- ☐ 2;
- ☐ 3;
- ☐ 4;
- ☐ 5;
- ☐ 6;
- ☐ Relevant

Images

Section No. 4

Irrelevant $\frac{\quad}{1}$; $\frac{\quad}{2}$; $\frac{\quad}{3}$; $\frac{\quad}{4}$; $\frac{\quad}{5}$; $\frac{\quad}{6}$; $\frac{\quad}{7}$ Relevant

26. What level of relevancy is the knowledge of whether or not a photo used for ADVERTISING purposes has been made to appear pleasing?

- ☐ Irrelevant;
- ☐ 2;
- ☐ 3;
- ☐ 4;
- ☐ 5;
- ☐ 6;
- ☐ Relevant

Images

Section No. 4

Irrelevant —; —; —; —; —; —; — Relevant
1 2 3 4 5 6 7

27. An EDITORIAL image contains the following credit: PHOTO BY/JOHN DOE.

What is the level of relevancy to you knowing that the image has been manipulated?

- ☐ Irrelevant;
- ☐ 2;
- ☐ 3;
- ☐ 4;
- ☐ 5;
- ☐ 6;
- ☐ Relevant

Images

Irrelevant $\frac{\quad}{1}$; $\frac{\quad}{2}$; $\frac{\quad}{3}$; $\frac{\quad}{4}$; $\frac{\quad}{5}$; $\frac{\quad}{6}$; $\frac{\quad}{7}$ Relevant

**28. An EDITORIAL image contains the following credit: GRAPHIC BY/ JOHN DOE.
What is the level of relevancy to you knowing that the image has been manipulated?**

- ☐ Irrelevant;
- ☐ 2;
- ☐ 3;
- ☐ 4;
- ☐ 5;
- ☐ 6;
- ☐ Relevant

Images

Irrelevant $\frac{\quad}{1}$; $\frac{\quad}{2}$; $\frac{\quad}{3}$; $\frac{\quad}{4}$; $\frac{\quad}{5}$; $\frac{\quad}{6}$; $\frac{\quad}{7}$ Relevant

29. What is the level of relevancy to you knowing that a manipulated image depicting an ADVERTISEMENT contains the photo credit: PHOTO BY/ JOHN DOE?

- ☐ Irrelevant;
- ☐ 2;
- ☐ 3;
- ☐ 4;
- ☐ 5;
- ☐ 6;
- ☐ Relevant

Images

Irrelevant $\frac{\quad}{1}$; $\frac{\quad}{2}$; $\frac{\quad}{3}$; $\frac{\quad}{4}$; $\frac{\quad}{5}$; $\frac{\quad}{6}$; $\frac{\quad}{7}$ Relevant

30. What is the level of relevancy to you knowing that a manipulated image depicting an ADVERTISEMENT contains the photo credit: GRAPHIC BY/ JOHN DOE?

- ☐ Irrelevant;
- ☐ 2;
- ☐ 3;
- ☐ 4;
- ☐ 5;
- ☐ 6;
- ☐ Relevant

Images
Thank you
<p>You have completed the survey. Thank you for your participation.</p>

VITA

Gregory Bernard Poindexter

Candidate for the Degree of

Master of Science

Thesis: TONAL ARTIFACTUALIZATIONS: LIGHT-TO-DARK IN STILL
IMAGERY AND EFFECTS ON PERCEPTION

Major Field: Communication

Biographical:

Married since 1984. My wife, Naomi, and I have two children, who are now adults.

Education:

Completed the requirements for the Master of Science in Communication at Oklahoma State University, Tulsa, Oklahoma in May, 2012.

Completed the requirements for the Bachelor of Science in Communication at Oral Roberts University, Tulsa, Oklahoma, 1985.

Experience:

Broken Arrow *Ledger Community Newspaper*
Managing Editor (March 2007 - current)

Tulsa Community College-Northeast Campus
Adjunct Professor (June 2006-Current)

JaMar Publications, LLC
Chief Writer/Photographer, *Crime Scene Magazine* (August 2006 to March 2007)

Broken Arrow Public School District
Soccer Trainer/Assistant Coach (August 2005-August 2008)

Tulsa Police Department
Officer (April 1985-Retired April

Name: Gregory Bernard Poindexter

Date of Degree: May, 2012

Institution: Oklahoma State University

Location: Tulsa, Oklahoma

Title of Study: TONAL ARTIFACTUALIZATIONS: LIGHT-TO-DARK IN STILL
IMAGERY AND EFFECTS ON PERCEPTION

Pages in Study: 150

Candidate for the Degree of Master of Science

Major Field: Communication

Scope and Method of Study:

Mass media news outlets that produce print products use aestheticized imagery in their editorial content and in-house produced advertisements. The human visual system's (HVS) physical and cognitive properties enable people to see the imagery. Discussion of the imagery rarely singles out aestheticized elements connected with the variance of light-to-dark (luminance *contrast*). This paper introduces *tonal artifactualizations*, an additional category to quantify images in which luminance contrast is purposely varied to have an effect on perception. This position uses a symbolic-interpretive view of organizational culture based on communication theory. Information from published research on organizational aesthetics; visual literacy and recent theory on the human visual system are also used in the discussion. The paper will report findings from the analysis of data in a quasi-experiment measuring if mean difference exists between luminance contrast in tonal artifactualizations and has an effects on stakeholder perception of sociological meaning and product appeal.

Findings and Conclusions:

It is clear that varying only luminance contrast in an image after all other adjustments have been completed has value, meaning, and relevance compared to a null view of the same. The findings indicate electronically varying only levels of luminance contrast in still imagery has an effect on perception. Thus, H1 is supported.

Despite limitations, this study is of value to the field of editorial and advertising photography. Professional, school-trained journalists are increasingly becoming responsible for producing *art* – images accompanying written copy. Additionally, often times images originally captured for editorial purposes are used in advertisements.

The equipment used to gather imagery ranges from cellphone cameras to multi-thousand dollar digital platforms. Many times, with no ill intent, reporters use computer software to correct imagery. Line-reporters who must shoot their own art, photojournalist, and photo editors can each take away from the study the fact that something as minute as a final adjustment of luminance contrast has the ability to have an effect on stakeholder perception.

Indeed, tonal artifactualizations in still imagery may effect viewer perceptions of events and, or, marketing materials.

ADVISER'S APPROVAL: Lori K. McKinnon, Ph.D.
