DO READERS BELIEVE WHAT THEY SEE?

READER ACCEPTANCE OF IMAGE MANIPULATION

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---

by

RICHARD J. ORIEZ

David Rees, Thesis Supervisor

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The undersigned, appointed by the dean of the Graduate School, have examined the thesis entitled

DO READERS BELIEVE WHAT THEY SEE? READER ACCEPTANCE OF IMAGE MANIPULATION

presented by Richard J. Oriez, a candidate for the degree of master of art in journalism, and hereby certify that, in their opinion, it is worthy of acceptance.

Professor David Rees

Professor Clyde Bentley

Professor Lee Wilkins

Professor Gregory Casey

To:

Katherine Oriez

(Both of them)

Do readers believe what they see?

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DO READERS BELIEVE WHAT THEY SEE?

READER ACCEPTANCE OF IMAGE MANIPULATION

Richard J. Oriez

Prof. David Rees, Thesis Supervisor

ABSTRACT

This study uses a random public sample to measure the level of acceptance the public has of various kinds of image manipulation, to discover how frequently the respondents believe the same manipulations are performed on the news images in the local daily newspaper and how much they trust those images to truthfully depict the scene photograph. The study also looks at how a person's familiarity imaging software impacts these areas.

The findings indicate the public's acceptance of the various digital adjustments very similar to the profession's. The findings also show that many of the readers believe drastic image manipulations are performed far more frequently than they actually are. No correlation was found between a person's familiarity with imaging software and the level of trust assigned to news images, though there is a correlation with the acceptance of some of the manipulations.

Do readers believe what they see?
Reader acceptance of image manipulation

From the earliest days of Adobe's Photoshop, and other imaging software used at newspapers and newsmagazines, professionals and academics have voiced fears about the impact the new technology would have on the credibility of the images in the daily newspapers and on the general public's trust in what they saw on the front page. Twenty years ago, Shiela Reaves (1987) cautioned "the future preponderance of digital photo editing could make readers cynical of photographic images—regardless of the publication."(p. 48) Since her warning, digital imaging has gone from being a luxury of a few of the wealthiest papers to a necessity of business for virtually every publication.

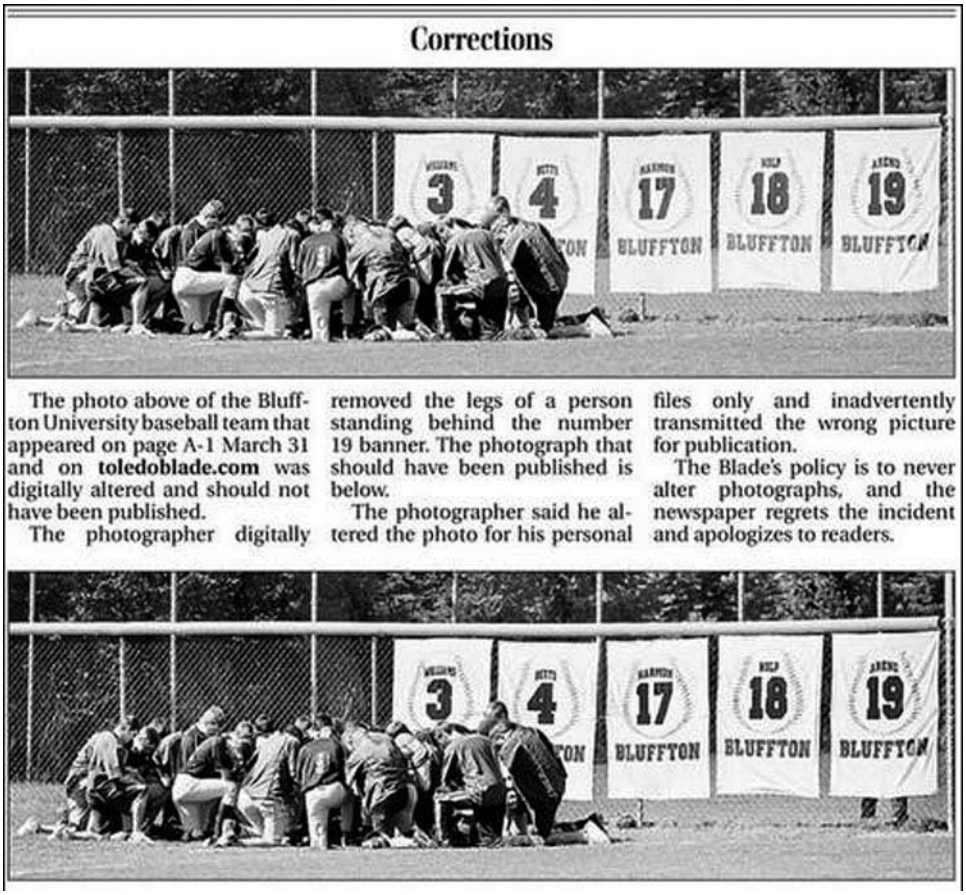
In recent years, numerous newspapers, such as the *Tampa Tribune, Cleveland Plain Dealer and San Francisco Chronicle,* among others, have felt the need to reassure their readers about the integrity of the images on their pages and to spell out their policies concerning image manipulation. Some of the papers were reacting to manipulated photographs that had become news in their own right. Some in an effort to make amends for images that had appeared in their own pages. Others were responding to concerns raised by their readers who suspected that a published photo had been unethically

manipulated. (Acuna, 2006; Chappel, 2004; Diadiun, 2006; Haddock, 2003; L.A. Times, 2003; Mayes, 2004; Royhab, 2007)

What digital manipulation is permissible in photojournalism and how much is being done? The vast majority of academic papers on the subject since Reaves' study seem to support the concept that manipulation to the extent of changing the facts in the scene photographed is not appropriate.

And yet, manipulations of images continue.

In the spring of 2007, Allan Detrich, an award-winning photographer with the *Toledo Blade*, resigned when the paper started an investigation into photographs he had submitted for publication. (Royhab, 2007) The investigation was instigated when it was noticed that an image of players praying before a baseball game that ran in the *Blade* was missing the pair of legs standing behind a banner that appeared in other Ohio newspapers' photographs of the same event. (See Figure 1) As a result of the investigation, the Blade's director of photography discovered that 79 of the 947 images Detrich had submitted for publication in the first 14 weeks of the year were inappropriately altered. (Royhab) The paper published a "correction" on April 6, 2007. (Toledo Blade, 2007)



Corrections

The photo above of the Bluffton University baseball team that appeared on page A-1 March 31 and on **toledoblade.com** was digitally altered and should not have been published.

The photographer digitally removed the legs of a person standing behind the number 19 banner. The photograph that should have been published is below.

The photographer said he altered the photo for his personal files only and inadvertently transmitted the wrong picture for publication.

The Blade's policy is to never alter photographs, and the newspaper regrets the incident and apologizes to readers.

Figure 1

On April 15, *The Blade* published an apology to its readers. In it, Managing Editor Ron Royhab acknowledged that not all of the paper's readers saw the incident with the same seriousness as the news professionals did. "Readers have asked us why this was such a big deal. What's wrong with changing the content of a photograph that is published in a newspaper?

"The answer is simple: it is dishonest." (Royhab)

In 2006, Adnan Hajj, a photographer working for Reuters, caused a sensation in the photojournalism community when he transmitted two altered photographs of the

Israeli invasion of Lebanon that found their way on to the wire. (Winslow, 2006) The March 7, 2005 cover of *Newsweek* put Martha Stewart's head on a model's body. (DeFoore, 2005) The March 26, 2007 cover of *Time* featured a photograph of President Reagan with a tear added to his cheek. (Press Gazette, 2007) Detrich, Hajj, the *Newsweek* and *Times* covers are just some of the examples from the last few years that come readily to mind, the ones that were publicly "caught".

On the National Press Photographers Association's NPPA NPPL, an electronic mailing list, Timothy J. Hall, a photojournalist with 23 years of experience, voiced the frustration that seems to be felt by many photographers. "If this crud continues every image we take will be suspect. God forbid you actually get that once-in-a-lifetime photo because you will be fighting to prove its authenticity for the rest of your life!" (Hall, 2003)

In one of the more infamous recent cases Brian Walski, a Los Angeles Times photographer, was fired in 2003 when he merged two separate images from the battlefield of Iraq and passed the montage off as a single photograph. (L. A. Times, 2003)

A historical look

Some computer adjustment is done to virtually every news photograph published. Distracting elements are cropped out, shadows are "dodged", and highlights are "burned". These are time-honored techniques that few photographers, editors or readers (if they are aware of them) would have any trouble with since they originated with the

traditional silver-based chemical photographic practices. (Reaves, 1987; Thompson, 2006)

Other manipulations, some not as accepted, go back virtually to the start of photography. Roger Fenton added additional cannonballs to his “The Valley of the Shadow of Death” in 1855. Bodies were rearranged for photos of the Gettysburg battlefield during the Civil War. Arthur Rothstein was caught carrying a cow’s skull with him to add to photos in 1936. (Elliott & Elliott, 2003) Though, to be fair, Paul Lester doubts the validity of the charge against Rothstein. “Given (Rothstein’s) reputation, it is difficult to imagine him packing a skull with his clothes and cameras.” (1991b)

Starting in the 1980’s electronic imaging (mostly images scanned from film into computers at that time) made it possible to seamlessly move, add or delete every element within a photograph, thus bringing image manipulation to a whole new level. The National Geographic moved one of the Pyramids of Giza in 1982. The St. Louis Post-Dispatch removed a Diet Coke can from a photo of a Pulitzer Prize winning photographer in 1989. In the 1990‘s Time Magazine darkened O.J. Simpson’s police mug shots, making him look more sinister. Newsday had the battling skaters Nancy Kerrigan and Tonya Harding working out together at the Olympics when, in actuality the two actively avoided each other. (Elliott & Elliott, 2003)

Many of these incidents caused a widespread discussion of photographic ethics and, particularly, of digital manipulation and resulted in some publications and professional organizations adopting standards dealing with the manipulation of news

images. (Alabiso, 2003; N.P.P.A, 1997) But while there is, largely, a higher expectation by professional journalists about what may or may not, be done through digital manipulation, the general public may wonder just what is being done to the news images they see.

Research Questions

This study looks at what the public considers to be an acceptable level of image manipulation and how much manipulation the public believes is done in their local papers. This study also seeks to see if there is a relationship between people who have a working knowledge of imaging software and their acceptance of digital manipulation or their perception of how much manipulation is being done to the images in their daily paper. Specifically, the questions this study tries to answer are:

R1) What level of digital manipulation does the general public find acceptable when applied to the photographs in the news section of their daily newspapers?

R2) How much digital manipulation does the general public believe is done to the photographs in the news section of their daily newspapers?

R3) Is there a correlation between a person's familiarity with imaging software and that person's views on, or expectations of, digital manipulation of the photographs in the news section of their daily newspapers?

Normative theories, ethics and Photoshop

The normative theories of communication look at how the media, from the largest organization down to the individual journalist, ought to communicate the news to its society. This is not addressing how it is done but, instead, how it should be done. (McQuail, 1994)

In 1947, the U.S. Commission on the Freedom of the Press (also known as the Hutchins Commission) helped to advance the social responsibility theory by drawing up recommended standards it felt the media should strive for in meeting the media's obligation to society. Providing a "full, truthful, comprehensive and intelligent account of the day's events in a context which gives them meaning" is first among these standards. (McQuail, p. 149)

In *Mass Communication Theory, An Introduction* Denis McQuail summarizes social responsibility theory with six major points:

- The media have obligations to society, and media ownership is a public trust.
- News media should be truthful, accurate, fair, objective and relevant
- The media should be free but self-regulated
- Media should follow agreed codes of ethics and professional standards
- Under some circumstances, society may need to intervene in the public interest. (McQuail, p. 150)

In keeping with the first point, the NPPA's code of ethics states "Photographs can also cause great harm if they…are manipulated." (NPPA, n.d.) However, it is the second

point that seems to most apply to image manipulation. It would seem obvious that changing, or fabricating outright, a quote in a news story would not live up to the goal of "truthful, accurate, fair, objective". The same is often recognized as true when dealing with image manipulation. Many view extreme forms of image manipulation on the same level as changing a quote in a news story. (Long, 1999; Harris, 1999) Christopher Harris goes a step further when talking about the merging of two images that were taken of subjects that were separated by a continent and half an ocean. In this case, he said it was the same as making up the quote outright. "Even if a journalist cleans or sanitizes a quote, it should have some factual base." (Harris, p.167) Edwin Martin, of North Carolina State, in a 1991 article in the *Journal of Mass Media Ethics* said that the issue is deception. "We presume that deception, in general, is morally wrong; and it is presumed that certain kinds of photographic manipulations will cause viewer deception. Thus those manipulations are morally wrong." (Martin, 1991, p. 159)

In keeping with the fifth point, the afore-mentioned NPPA Code of Ethics states, "This code is intended to promote the highest quality in all forms of photojournalism and to strengthen public confidence in the profession". (NPPA, n.d.) The code tells the members: "Editing should maintain the integrity of the photographic images' content and context. Do not manipulate images … in any way that can mislead viewers of misrepresent subjects."

The greater Truth verses the loss of trust

Researchers have been fairly consistent in drawing the parameters of acceptable manipulation within the profession. (Reaves, 1987; Reaves, 1995; Greer and Gosen, 2002; Huang, 2000; Newton, 1998: Thompson, 2006) However, there are still individuals who argue for a "greater truth" that may not be apparent in a particular image. In the fall of 2003, there was a conversation on the National Press Photographs Association's NPPL about the appropriateness of deleting distracting elements from photographs, in particular concerning reports that Dorothea Lange had removed a stray thumb from her famous *Migrant Mother* photograph. Marcelo Montealegre, a photographer who has worked for *Time, Life, Newsweek* among other publications, (Consulate General Of Chile, n.d.) wrote:

> Removing the thumb is removing a distractive element; it has nothing to do with reality. The reality is the condition of the woman and her children and many like her. The thumb is just that: a thumb.
>
> I cannot accept this puritanical (which is becoming tyrannical) philosophy of the godly value of what a mechanical device captures at a given moment. The truth is in the hands of the photographer, who is acting as a witness, no more and no less, not as a robot. If Dorothea Lange, or Eugene Smith or Cornell Capa or the immense majority of photographers (not their editors and or managers - the photographers) tell me that a given photograph is what comes closest to what was happening, then I take them at their word. They were there. (Motealegre, 2003)

Several photographers responded in the same vein as Mark Loundy. "All you're telling me is that I cannot trust anything you shoot." (Loundy, 2003) Another aspect of the normative theory that McQuail addresses is objectivity and its importance in social responsibility and the "quality" of the news. He lists the following as one of the

"information quality standards" of the media: "Information should be objective in the sense of being accurate, honest, sufficiently complete, true to reality, reliable and separating fact from opinion" (pp. 147).

When *Los Angeles Times* photographer Brian Walski merged two separate photographs and sent the montage to his editors as a single image of the war in Iraq (Los Angeles Times, 2003), was it in keeping with the factuality of the original photographs? Would a reader viewing this image in the morning newspaper feel that it was "true to reality, reliable and separating fact from opinion?" These are important questions concerning the social responsibility of the press in a democracy. The *Los Angeles Times* editors reacted to Walski's deceit by terminating his employment. (L. A. Times) Pete Souza, national photographer for the *Chicago Tribune,* responded "I wonder how many photographers have done the same thing Brian Walski did and haven't been caught." (Johnston, 2003)

The public knows

Adobe's Photoshop, and other imaging software, have made it easier for the photographer to change the elements within the photograph without the changes being detected by the viewer. (Reaves, 1995). Now knowledge of the software, which was formerly restricted to only people connected to the photographic profession, is becoming known to the general public. It has gotten to the point where "photoshop", with no further

explanation, can be used as the punch line in a general-circulation comic strip (See Figure 2).

Hi & Lois

Figure 2

As more and more readers become aware of the software, they are becoming more knowledgeable of what is possible in the area of manipulation. Relatively inexpensive digital cameras, software and color printers are moving photofinishing, and photo manipulation, from the photo-processing lab to the home computer. (Schwartz, 2003) Couple that new consumer-based knowledge with examples of misuse of manipulation that have been brought to the public's attention, and it could conceivably impact the validity and trustworthiness the reader assigns to the images seen in the news sections of the daily newspaper. "Digital imaging has shaken the public's faith in photography." Dona Schwartz, of the University of Minnesota, asserts in *Professional oversight: Policing the credibility of photojournalism.* (Schwartz, p. 30)

Do readers believe what they see?

Some in academia and in the profession worry about the future of photojournalism if we were to lose the trust of our readers. John Long, one-time NPPA Ethics CO-Chair, is one of the people raising the alarm. In his article *Ethics in the Age of Digital Photography,* Long is pessimistic about safeguarding the credibility of documentary images. He, and others, takes the position that "the public is losing faith in us." He goes on to say that our "credibility is damaged every time a reputable news organization is caught lying to the public". (Long, 1999) Long has many examples to tout. The pyramids on the cover of *National Geographic,* O.J. Simpson on *Time,* a picture of then Gov. Ann Richards on a Harley Davidson in Texas (only the head in the photo was her). Long compares such alterations of photographs, where elements of composition are added or subtracted, to changing a direct quote in a story. "The cumulative effect is the gradual erosion of the credibility of the entire profession and I am not sure we can win this war." (Long) As early as 1989, Long was sounding the alarm. "We ourselves, the photojournalists, must be trusted because the images themselves will no longer be positive proof." (Long, 1989, p. 13) Blu Tirohl, of the University of Lincolnshire and Humberside, feels that maintaining the public's trust is out of the photographer's hands. "Despite photojournalism practitioners' re-assertion of their belief in photographic integrity, the public can no longer depend solely on the word of the photographer; since any number of intermediaries may tamper with a visual product." (Tirohl, 2000, p. 343)

A philosophical look

Christopher Harris voices Immanuel Kant's concept that a lie hurts all of society when he cautions "*Time* and other publications are risking a loss of veracity when they deceive their public. They should not, however, be allowed to affect the dignity and veracity of photojournalism as a profession." (Harris, 1991)

While most people, journalists and public alike, would agree that manipulations such as Walski's on the battlefields of Iraq cross the line of acceptable manipulation (Reaves, 1987; Thompson, 2006; Huang, 2000), where should the line be drawn ethically? Aaron Quinn, currently with California State University at Chico, takes a hard line opposing dodging, burning and color correction. He cites Immanuel Kant's Categorical Imperative against lying. "One could go as far as to call a dodge or burn a lie in almost all situations, so there is little question over what place this process ought to have in photojournalism: none." (Quinn & Spence, 2004, p. 9)

But, is dodging and burning really a lie? Is it a "white lie"? Most films and digital cameras do not have the same contrast range as the human eye. Dodging and burning could be helping to bring the image in line with what the photographer's eye saw. At the location an image is being captured there are also elements (such as motion and sound) helping to draw an observer's attention to a person or object. These elements may not be in the still photograph. As long as information is not obscured, is it a lie to use dodging or burning to help guide the viewer's attention to where it would have been had the viewers been on the scene?

Quinn imagines Kant saying, 'No, one must not manipulate under any circumstances because manipulation may result in deception and deception being inherently morally wrong is in all circumstances ethically objectionable.' (Quinn & Spence, p. 7-8)

When it comes to color correction, Quinn trusts the objective camera over the subjective photographer at the computer. He is also leery of cropping:

> Photographers don't always remember…the reasons why they shoot a particular frame the way they do when they are editing many hours or days later…. Therefore, there is often reason to believe there is relevant visual data in the secondary regions of an image that a photographer might overlook and eliminate in the cropping process. (p. 8)

Paul Lester teaches, "the first step in determining an ethic for the field (of journalism) is to determine the values, principles and loyalties at work." (1991a) In Lester's viewpoint truth is the one principle that is the guiding guarantee of ethical journalism.

While Kant's emphasis on duty (Christians, Fackler, Rotzoll, & McKee, 2001) can help remind photojournalists and photo editors of what they owe to the readers, is publishing images exactly as they were recorded on the photographer's compact flash card really the only moral answer? Is the image as recorded the truth?

Lester points out that the opposite philosophic viewpoint, hedonism, can be the most dangerous for a photojournalist. This is where the photographer's ambition and desire to get a memorable image—that five-column, A1, above-the-fold photograph—comes into play. Because, Lester says, if a photographer "is more loyal to him or herself,

if he or she values winning contests, receiving peer acknowledgment, or pay raises over loyalty to his or her readers, that photographer is much more likely to have ethical problems."

Aristotle may be a more appropriate guide. He taught that the mean between two extremes (what Confucius referred to as the "Golden Mean") is where virtue lies. (Christians et al., 2001) That would lead us to believe that the ethical point is between Walski's merging of images or Montealegre's willingness to accept the photographer's decision if it is best to remove a stray thumb and Quinn's absolutism of no burning or dodging.

John Rawls urges people to look at a situation from behind a "veil of ignorance". To approach it as if they did not know what role they would assume after a decision was made. (Christians et al., 2001) For photojournalists and picture editors, this would mean tempering their desire to publish the strongest, most dramatic image possible by making an honest effort to consider the readers' view. What kinds of image manipulation would they accept in the newspapers they read before they started to feel they were being lied to?

It is not known if the American public has reached the point where it is losing faith in the veracity of photojournalism. Determining this is one of the goals for this research. Another purpose is to set a benchmark for future comparison. I am not only interested in judging how well the public's expectations in the area of image manipulation are being met today, but also in being able to chart future changes in that

attitude and possibly spotting trends and any indication of the underlying causes of those trends.

This research cannot show a causal relationship between a person's knowledge of Photoshop and the credibility that person assigns to the images they see in their newspaper. While I will examine whether there is a correlation between imaging software knowledge and the amount of faith a person has in the news photographs he sees, a different study would be necessary to look for causality if such a correlation does exist. I view this more as a starting point than an end product.

Literature Review

In 1990, Fred Ritchin, in his book *In Our Own Image,* predicted that as digital manipulations became more commonplace it would "threaten not only to further diminish the public's trust in journalism but to…significantly revise society's general use of and relationship to the photograph and, in combination with other forces, people's perceptions of the world itself." (Ritchin, 1990, p. 3) The public has seen the magic of digital photography clearly used in such movies as *Forrest Gump,* which has the modern-day actor Tom Hanks talking to the President Kennedy of 1962. The nation's readers have been made aware of the more infamous examples of still images being changed to fit onto the cover of a magazine or to make the accused appear guiltier.

As early as 1987, Shiela Reaves of the University of Wisconsin sounded the alarm concerning the danger of the coming digital revolution. In *Digital retouching: Is There a Place for it in Newspaper Photography* she quotes several different editors—including the then editor of *The New York Times Magazine* who said, "This new technology has the potential of undermining our faith in photography as a reflection of reality." (Reaves, 1987, p. 40) Reaves goes on to describe disagreement within some newsrooms on the removal of distracting elements and other manipulation.

In 1998 Julianne Newton undertook a study expecting to find that "photojournalism was in big trouble." (Newton, 1998, p. 8) However, her conclusions were the opposite. "Far from a dying profession whose decline has been heralded in the face of digital imagery and multi-media technology, newspaper photojournalism was quite alive in the communities studied." (Newton, p. 8) As far as the effects of digital imaging, Newton found more positive effects than negatives, including "higher–not lower–standards of ethics." (Newton, p. 9) Newton's conclusion is that the danger of image manipulation has made the profession more alert and protective of its credibility, enforcing visual ethics at new, higher levels. Newton found the public's trust of the images in the local paper depended more on the respect the publication held in the community than on the technology used in gathering and distributing the images. "In communities large and small, the appearance of a newspaper photographer seemed…to legitimize events. Readers or viewers who distrusted photojournalists, or their published images, were the exception, not the rule." (Newton, p. 9)

While the ethical level within the photo department of many papers may be sustained at a high level, there have been repeated instances through the years that have been brought to the public's attention. There also are those who fear the cumulative effect of that deceit. In *Digitization and manipulation of news photographs* Christopher Harris of Middle Tennessee State University argues, "the potential loss of the public's trust in visual journalism is of vital concern." (Harris, 1999, p. 165) The purpose of my study, in the spirit of Harris's essay, is to take a measure of the public trust.

Digital is not the first technology to change how images are used in newspapers. With the introduction of the halftone process in the early part of the 20th century, it was easier for papers to reproduce photos. Many art directors had been accustomed to making interpretive renditions of photographs prior to the new technology so they did not see a problem with continuing to make "artistic" changes to the images in their paper. (Lowrey, 1998) At the time "a news photographer was seen as, at worst, a ruffian and, at best, a swashbuckling romantic." (Lowrey) It was not until the late 1920's that news photography started to establish itself as a profession and thus did photos start to get respect as journalism. At that point, the images slowly gained protection from manipulation as they were moved from the category of "novelty" to that of journalism. (Lowrey)

What are the boundaries on the Digital Frontier?

In *Professional oversight: Policing the credibility of photojournalism*, Dona Schwartz (2003) sees three different strategies a publication might employ in protecting credibility against any improper photographer/editor actions:

1. *Publish only photographs that depict the subject as the "camera sees it."* This strategy would involve the standardization of the photographers' camera bags. She acknowledges that different bags might be needed for different types of assignments "sports, outdoor settings, indoor settings and so on". Schwartz writes "if the proclivity of photographers to make independent decisions regarding the use of the technology

intervenes and shapes the resulting representations, all photojournalists could be issued standard equipment that streamlines the available array of choices."

2. *Publish only photographs that depict the subject as someone present at the scene would have seen it.* The challenge is understanding how the "average person" sees. Schwartz cautions that for this strategy to work, those negotiating the guidelines will need to have studied vision and perception. The advantage over the previous strategy would be to give the photographer permission to translate the scene. For example, doing what is needed to reproduce the tonal range the human eye sees at a sunset instead of what the more limited range of a digital chip or film can record.

3. *Authorize photographers to make decisions regarding image production consistent with the prevailing norms governing journalistic representations across communicative modes.* "This option builds on the 'social contract' between news organizations and publics and relies on news organizations and individual news workers to establish and maintain reputations for accuracy and credibility." Schwartz sees this strategy needing written rules—either as established by a professional organization or by the individual publication—and suggests that the publication publish these guidelines on a regular basis so that the readers know what they are. (Schwartz 2003, pp. 45-46)

The limitations and stifling effects of the first two strategies would seem to lead most publications toward the third strategy.

By 1992, Shiela Reaves was studying where editors were drawing the line in setting photo manipulation boundaries. For *What's Wrong with this Picture? Daily*

Newspaper Photo editor's Attitudes and their Tolerance toward Digital Manipulation, Reaves sent examples of different types of image manipulation to photo editors along with possible explanations as to why each might be done. She than asked them to say which ones were appropriate. At that point in time, many of the editors were shocked at what was possible. "This technology is dangerous. Readers think photos don't lie," one editor said. (Reaves, 1992, p. 133)

Generally, the editors in 1992 came down very close to what is considered acceptable today as illustrated in the National Press Photographers Association's code of ethics: The adjustments to a print that would routinely be done in a darkroom were all right e.g.: exposure, contrast, color balance, dodging, burning, cropping and removing dust that was on a negative when it was scanned. Not allowed was to add or remove elements of the scene; to do so would compromise the truth of the image. One of the major findings of Reaves' study was that the amount of experience the editor had as a hands-on photojournalist and his familiarity with the technology influenced his willingness to allow such manipulations. The less experience the editors had, the more willing they were to make changes to the images. (Reaves, 1992)

Does type or use of photo matter?

In a later study, Reaves looked to see how the type of photo an image is impacts an editor's willingness to have it digitally altered. Her hypotheses were that:

> "newspaper editors will disagree most strongly with the digital manipulation of spot news photographs, but find the most agreement with

> the digital manipulation of photo illustration. Their attitude toward feature photos should fall some where in between. Spot news photos are clear examples of the denotative, natural sign-event, while photo illustrations are clear examples of the highly connotative, symbolic sign-event." (Reaves, 1995c, p. 709)

Reaves found a strong correlation between which category the image fit into and the editors' willingness to alter it. Editors were almost never willing to change the elements in a spot news photo, but were much freer with the idea of moving things around in the photo illustration. Reaves stresses, though, that any manipulation of a photo illustration should be so extreme that there will be no doubt in the viewers' minds that the photo is not "real". (Reaves, 1995c)

In yet another study, *Magazine vs. Newspapers, Editors have different Ethical Standards on the Digital Manipulation of Photographs*, Reaves looked to see if the type of publication influenced the editor's willingness to doctor a photo. Reaves utilized the same test samples she used in her first study and compared the magazine editors' responses to what she received from the newspaper editors. In this study, Reaves expected to find that magazine editors would have a greater tolerance than newspaper editors toward digital manipulation of photographs; photographic editors with more experience in photojournalism will be less tolerant of digital manipulation of photographs; and visual editors working at publications that allow traditional mechanical manipulation of photographs will be more tolerant of digital, computer alteration of a photograph. (Reaves, 1995a)

Reaves' findings reported that magazine editors were far more willing to have images manipulated. Whereas a "5" was the highest level of manipulation tolerance and a "1" was the lowest, an example of just one of the 15 images used in the survey, showed magazine editors scoring a mean of 3.85 to the newspapers editors' 2.14 on the question of whether telephone wires should be removed from a photo. All of the questions scored in the same manner. Thus the results supported the hypothesis that magazine editors have a greater tolerance of digital manipulation. The hypothesis that editors with more experience in photojournalism would be less tolerant was only partially supported. Publication type was a more reliable predictor of manipulation tolerance. The hypothesis that visual editors working at publications allowing mechanical manipulation will be more tolerant of digital alteration of images was strongly supported. (Reaves, 1995a)

Drawing the line

At about the same time as Reaves' magazine study, Tom Wheeler and Tim Gleason attempted to formalize just where the boundaries should lie for image manipulation in a newsroom. In "*Photography or Photofiction? An ethical protocol for the Digital Age*, the authors put forward proposals for ethics guidelines at the digital photo desk. Their main emphasis is that "we deliver what we promise or expected. The ultimate test is simple, a test of honesty and perception: Do we mislead our consumers? Do they think we mislead them?" (Wheeler & Gleason, 1995, p. 9)

Wheeler and Gleason refer to the readers' "qualified expectation of reality (QER)." (Wheeler & Gleason, p. 9) They credit the QER as the source of photojournalism's credibility with the public and suggest photojournalists should submit their photos to these tests prior to the decision to publish them:

The Viewfinder Test: Are the objects in the image the same objects and in the same relationship to each other as the photographer saw when he looked through the viewfinder?

The Photojournalist's Test: Are the techniques used in acquiring the image the standard photographic techniques the public expects from news photographers? This gives the photographer freedom to work with lenses and lighting but restricts double exposures and digital manipulations.

The Technical Credibility Test: In days gone by this was the clumsy line around where two images where pasted together. If you can't tell by looking at the photo that there are parts of different pictures there, then the editor needs to tell the viewers.

The "Pregnant Bruce Willis" Test: Is the photograph possible? Is its fiction content so obvious that no one can reasonably mistake it for real life? (Wheeler & Gleason, 1995)

In another study, Shiela Reaves (1995b) took a look at why, in spite of the general acceptance of these guidelines in newsrooms, altered images still slip through and why they will probably continue.

Why are the drawn lines crossed?

For *The Unintended Effects of New Technology (and why we can expect more)* Reaves dug into one of the better-known cases of the 10 years previous to the study. She took a look at Time Magazine's use of O.J. Simpson's mug shot and the fallout from the media and the public concerning the way the photo was manipulated electronically. (Reaves, 1995b) Reaves looks at other studies (some written by her) that show a "hierarchy of influences" which has an effect on the potential for an image to be manipulated. According to Reaves, magazine editors are more likely to tolerate a "doctored" photo than newspaper editors are. Newspaper editors are more tolerant of such treatment given to a photo illustration than they are to a spot news photo receiving such handling. In this paper, Reaves sees the photo illustration as a major source of potential trouble "…once O.J. Simpson's mug shot was categorized as a photo illustration, then the lights turned green for artistic digital manipulation." (Reaves, p. 12) The problem, according to Reaves, is that the public does not always recognize it. The illustration should be "as obvious as possible." Reaves predicts more digital controversies because:

- The media are active in creating "pseudo-events" due to ease and economics;
- The media are active in supporting the cult of celebrity;
- The pack journalism behind big stories fuels intermedia agenda setting. (Reaves, 1995b, p. 15)

To avoid future controversies Reaves calls on editors to return to the "essential shared values of journalists—accuracy, balance, relevance, completeness." (Reaves, 1995b p.15)

In a more recent study Wilson Lowrey also looked to see what was acceptable in the photo department and on design desks of large newspapers with circulations of more than 50,000. He found that photo directors have little tolerance for purely artistic representation and that there was little evidence that they would alter photographs for aesthetic purposes. (Lowrey, 2003) However, the design desk is another possible source for manipulation. Lowrey hypothesized that the stronger the design staff's allegiance to journalistic norms, as opposed to artistic norms, the less likely there would be instances of unethical manipulation of images and the more likely that there would be rules governing photo manipulation. Lowrey also hypothesized that increased time pressure would increase the odds of images being unethically manipulated; and the larger the organization the less the likelihood that images would be manipulated and the greater the odds there would be rules against the unethical manipulation of images. (Lowrey)

Lowrey found little or no support for the hypothesis that the strength of the design desk's attachment to journalistic norms was related to the amount of unethical manipulation happening or that time pressures played a role in the amount of manipulation done. Despite the greater likelihood of rules governing manipulation at the larger papers, he found that the larger the organization the more likely it was that unethical manipulation had taken place. (Lowrey)

He speculated that, among other reasons, the increased instances of manipulation might be due to the shear number of images that pass through the design desk at a larger paper. Or, that the increased bureaucracy at a larger organization may impede the communication of the rules down to all the workers on the desk. (Lowrey)

The photographers' viewpoint

In 2006, Dr. Brad Thompson took a look at what the photojournalists themselves thought was acceptable image manipulation. He hypothesized, like the editors Reaves studied in 1995, that photojournalists' attitude toward manipulation would vary greatly depending where and how the photo was being used. He also hypothesized that membership in a professional organization, such as NPPA, would impact a photojournalist's outlook. In the course of his research, Thompson surveyed photojournalists concerning their opinion on a range of specific types of manipulations and the appropriateness of using these manipulations on images in three categories: cover photos, spot news and feature photos. For the sake of his survey, cover photos were defined as "distinguished from 'spot news' or 'features' but otherwise include standing sections and special sections of newspapers, magazines or magazine-like publications." (Thompson, 2006)

Thompson's survey asked about 17 different manipulations and asked about the acceptability of manipulations if the image is either labeled as a photo illustration or if the alterations are explained in the caption. Across the range of alterations, the

photojournalists were more disapproving of alterations made to spot news and feature photos than to cover photos. However, the only areas that went from a negative response for spot news to an accepting one for cover photos (on a scale of 1-5 with 1 being ”strongly agree” and 5 being “strongly disagree”) were “It is acceptable to alter an image as long as the credit line is labeled as a ‘photo illustration.’” And “It is acceptable to selectively sharpen parts of an image.” Labeling a spot news image as a “photo illustration” garnered a strongly disapproving mean of 4.51 while manipulating a similarly labeled cover photo received a mean of 2.85, slightly on the favorable side of natural. (Thompson, 2006)

(While the tables in the data section of this paper listed the resulting scores as “median” in the analysis section the same figures were referred to as “mean”. Dr. Thompson clarified that the tables were mislabeled and that the figures are actually the mean. [Personal communication, February 16, 2007])

The photojournalists were more willing to have the cover photo credit line label the image as a photo illustration than to explain an alteration in the captions (means of 2.85 and 3.8 respectively). The level of acceptance of different types of alterations varied greatly. Adding or removing elements met strong disapproval regardless of how the images were going to be used (Spot news: 4.92, feature photos: 4.58, cover photos: 4.65). Selectively lightening and darkening areas of an image (dodging and burning) met with general acceptance (Spot news: 2.58, feature photos: 2.32, cover photos: 2:18). While several alterations scored means in the “somewhat disagree” to “strongly disagree” range

(removing elements, use of a blur tool, etc), none of the alterations scored means in the "strongly agree" to "somewhat agree" range. (Thompson, 2006) This would seem to imply that, from the photojournalists' point of view, any alteration should be done reluctantly.

Thompson's survey results strongly supported his first hypothesis that photojournalists would be more accepting of alterations done to cover photos than of those done to news photos. His second hypothesis, however, was only partially supported. Membership in a professional organization did seem to have a correlation with one's acceptance of alterations done to cover and feature photos, but there was no correlation with regard to spot news. (Thompson, 2006)

Do our readers still trust us?

At the dawn of the digital age, Andy Grundberg (1990) prophesized:

> In the future, readers of newspapers and magazines will probably view news pictures more as illustrations than as reportage, since they will be well aware that they can no longer distinguish between a genuine image and one that has been manipulated. (Grundberg, 1990)

Wheeler and Gleason (1995) wrote "It is the public who will decide whether editorial photography's credibility survives the drastic, undetectable photo-manipulation afforded by widely available software." (p. 9)

In 1994, James Kelly and Diona Nace set about to see what influenced an image's credibility. They saw two parts to the perceived problem. "Ethical concerns have focused on two related issues—that unethical operators may be able to alter images without

detection and that once the public becomes aware of what the technology is capable of they will doubt the veracity of all photographs." (Kelly & Nace, 1994) The stated purpose of their study was to investigate the effects of publication context and of specific knowledge of digital manipulation technology on a small group of newspaper readers. The authors hypothesized that *The New York Times*, in general, along with the photos and stories within it, would elicit higher levels of believability than does the *National Enquirer*. They also thought that exposure to a Photoshop demonstration videotape would lead to lower levels of story credibility, of photo believability, and of general newspaper believability. (Kelly & Nace)

The authors dummied up a series of identical stories. Some of the clips were made to look like they had originated in *The New York Times*. Others copied the *National Enquirer* style. Between sessions of reading these clips, the subjects were shown a promotional video produced by Adobe for Photoshop software demonstrating the program's capability. The stories and images that appeared to have come from *The New York Times* all carried much more credibility with the subjects than those that appeared to come from the *National Enquirer* (Kelly and Nace, 1994). This supports an argument made by Arild Fetveit (1999), that "the credibility of photographical discourses becomes less reliant on an overarching trust in the technology of photography and more dependent upon institutional warrant." (p. 797-798)

On the other hand, Kelly and Nace did not find that viewing the Adobe videotape appeared to impact the credibility the subjects assigned to the news photographs they

saw. However, Kelley and Nace did not consider their findings in the area of digital imaging conclusive. “One dare not accept the null hypotheses as true. Additional investigations using more specific information about digital manipulation as used at professional newspapers may well show an effect.” (Kelly & Nace)

In 1996, Wheeler sought to study the reading public’s acceptability of various types of image manipulation. In what he acknowledged was a “nonrepresentative, nonrandom sample” he surveyed 333 journalism students to see if readers are correct in their assumptions concerning the “reality” of selected images; their acceptance of altered images as “ethical” and whether the respondents held different types of publications to different standards.

Wheeler found that 91% of the respondents ranked newspapers’ credibility at “average” or “high average” (49% and 43% respectively), 90% ranked news magazines average or higher and that only 73% ranked “general interest” magazines average or higher. The examples of general interest magazines given to the respondents included *Cosmopolitan, Esquire, Macworld and National Geographic.* (Wheeler, 1996)

Respondents where shown the November 1993 cover of *Spy Magazine* which featured actress Daryl Hannah apparently dressed like Jackie Kennedy was on the day her husband was killed. It was explained to the respondents that the actress had been linked romantically to John F. Kennedy Jr. and the caption read “Daryl Hannah as Mrs. John F. Kennedy Jr.?” The respondents were then asked how likely it was that this was a composite or “trick” photo—which it was. While 58% said it was “very likely” or

"somewhat likely" to be an altered photograph, 34% said that it was either "somewhat unlikely" or very unlikely" to have been an altered image. (Wheeler, 1996) Said another way, a third of those responding were inclined to believe the image to be genuine.

In another part of the survey, respondents were told, "an unacceptable alteration is misleading or otherwise irresponsible" and then were shown a photograph they were told illustrated a story about the economic forecast for family farms. The respondents were told that an art director felt that a telephone pole in the photograph was distracting, so she removed it digitally without informing the readers. The respondents were fairly evenly split concerning the appropriateness of the image use in newspapers: 48% said it was acceptable and 41% said that it was not. (Wheeler, 1996)

The respondents were more accepting of the image's use in either a news magazine (51%) or a general interest magazine (63%).

Wheeler also included a photograph of actress Tori Spelling in the survey. Respondents were told that various cosmetic changes had been done to Ms. Spelling's image—facial blemishes removed, cleavage increased, waist decreased, etc. To varying degrees, this image was found to be unacceptable regardless of the medium in which it was used (newspapers 11% and general interest magazines 30% acceptable). (Wheeler)

Another example Wheeler (1996) used in this study was the image published in Newsweek of the actors Tom Cruise and Dustin Hoffman. The actors were photographed at different places and time, and then the images were merged digitally to have it appear as though they were together when the photograph was taken. This image also was found

to be unacceptable to the respondents. The responses showed that 25% thought it was acceptable for use in newspapers and news magazines without telling the reader of the manipulation; 39% found it to be acceptable for general interest magazines.

In another section of the survey, Wheeler (1996) presented arguments for and against the removal of a Coke can from a portrait that was published in a newspaper. The image was not shown to the respondents. In this case, 49% found the alteration to be acceptable while 13% voiced “no impression”.

This study does show that readers have a different standard of expectation when it comes to the reality of images published in newspapers and those published in other media such as general interest magazines. It also found that women were less tolerant of image manipulation than men were. Pointing out that almost half of the respondents felt that the removal of the Coke can was acceptable Wheeler (1996) raised the question “what level of public acceptability would most publishers consider to be professionally adequate?” At what level of reader unacceptability should “the professional rethink the practice in question?" (Wheeler)

As stated earlier, Wheeler acknowledged that this was a nonrepresentative sample even though his stated goal was “to expand the research beyond professional and academic circles to the public sphere.” However, since the sample was made up of journalism students, I am concerned that the findings may be skewed by the respondents having a greater interest in, and knowledge of, journalistic practices and standards.

However, Wheeler's results were very close to Reaves' (1992) survey of photo editors, suggesting that the editors and readers are close to being of the same mind on this issue.

Does knowledge of Photoshop matter?

Another researcher to look into the readers' perception of news images is Mara Evonne Vernon (1997). Among other factors, Vernon wanted to learn if the reader's awareness of Photoshop and its capabilities would affect the credibility of news images. She predicted that exposure to published examples of digitally manipulated images would decrease viewers perceived levels of credibility of news photography. She also thought that exposure to a videotaped demonstration of digital manipulation techniques would decrease viewers' perceived levels of credibility of news photography. Vernon thought that exposure to both published examples of digitally manipulated images and a videotaped demonstration of digital manipulation techniques would have the most significant effect on decreasing viewers' perceived levels of the credibility of news photography.

Vernon (1997) utilized a pool of 172 test subjects that were divided into four groups. The control group was simply given a questionnaire. One group was shown examples of published, altered photos (i.e. the cover of *National Geographic* featuring a pyramid that had been digitally moved, an illustration that appeared to have Tonya Harding and Nancy Kerrigan skating together and the *Day in the Life* book that turned a horizontal shot into a vertical one). Another group was shown a video demonstrating how

photos can be manipulated with Adobe Photoshop, and the last group was shown both the images and the videotape. Each group then filled out a questionnaire that, among other things, measured the acceptability of various forms of manipulation. Vernon's conclusions found no support for the hypothesis that exposure to either the printed examples or the videotape alone would degrade the perceived credibility of news images and only trace evidence that exposure to both the examples and the videotape had any influence on the perceived credibility of news images. (Vernon)

She did find that the group seeing the video was quicker to agree news photography credibility was slipping and that digitally adding and subtracting elements was not acceptable. All groups perceived the credibility of news photography to be suffering the consequences of digital manipulation. It seems that the public accepts the same general guidelines editors do—that manipulation adjusting the visual quality of the image (dodging, burning, etc) is ok but changing the "truth" of the image by adding or subtracting visual elements is not. (Vernon, 1997)

Vernon's results suggest that news photography was losing credibility not because a majority of her subjects were coming to doubt it but because a majority of her subjects were concerned that others will start to doubt. That concern may be justified. The *Cleveland Plain Dealer's* reader representative Ted Diadiun (2006) felt the need to publicly explain the paper's policy regarding photo manipulation after he had been contacted by a reader who was concerned that an image published in the paper had been

tampered with inappropriately. Diadiun reassured the readers that the image was legitimate but acknowledged that the "question is a fair one." (Diadiun)

Can the readers tell?

Jennifer Greer and Joseph Gosen (2002) did a study similar to Vernon's. They put forward two hypotheses to be examined. The first is that readers who view an image that has been "digitally altered in any way will perceive the photograph as being less credible, photography in general as being less real, and rate the news media in general as being less credible than subjects who view an unaltered photograph." (p. 8) The second hypotheses is that "as the perceived level of digital manipulation to a photograph increases, subjects will rate the photograph as being less credible, photography in general as being less real, and rate the news media in general as being less credible." (p. 8)

The first hypothesis tests the absolutist view that absolutely no manipulation will be tolerated while the second one checks to see if the viewers can differentiate between the amounts of manipulation when accessing credibility. The authors showed 172 people five images varying from no manipulation to one having people removed from the scene. They also measured to see if a knowledge and understanding of computer imaging software affected the perceived credibility of the images. The study disproves the first hypothesis. The mere fact that some manipulation (such as dodging and burning) had taken place was not enough to impact the credibility of the image. However, it was found that more extensive alterations did affect credibility for that specific image—but not for

photography as a whole or for the news media. They stress that this dealt with a single image and that repeated exposure to extensively manipulated images may well have a cumulative effect. It also was discovered that other variables, such as age, education, income and gender, had as much impact on the perceived credibility of the media and photography as photo manipulation. (Greer & Gosen, 2002)

Edgar Huang used qualitative research to try to discover what readers' opinions were concerning image alterations. His findings seem to mirror the guidelines that Wheeler and Gleason suggested. He boiled down his subjects' advice to editors as:

- Whenever possible, do no alterations.
- Raise the standard to an ethical level rather than merely a legal level.
- If using any altered images, identify the alterations.
- Try not to alter hard news photographs; try not to alter human beings; and try not to alter the meaning of a photograph.
- Do unto others as you would have them do to you. (Huang, 2000)

The advice and comments of the subjects mirror what previously mentioned studies have shown is acceptable within the industry. Thus, most of his subjects would be comfortable with how images are handled in most newsrooms and have not come to question what they see in the "mainstream" press. Huang does not give his definition of alteration, but he and his subjects seem to be speaking only of adding or removing elements and not about utilizing the software to do "routine" darkroom work. While this

article confirms the need to be ethical in the use of Photoshop, it does not herald a crisis in credibility—either now or in the immediate future.

Do readers feel the bargain is kept?

Howard Becker and Dianne Hageman (2003) argue that an unspoken bargain has been struck between the people working on the images for a newspaper and their readers. The photographers and editors agree to do things in a certain way and the readers agree to accept the images as "real enough". It is on this agreement that photojournalism is built and depends for its survival. If the public discovers that a newspaper is not keeping its end of the bargain, then the readers may abandon their end also and start questioning the integrity of the images they see in the paper. Thus, there are no unimportant elements that can be removed from an image, because removing them would cause skepticism. (p. 346)

A survey released the same year as Becker's and Hageman's article reported that 65% of the respondents (Hantz and West, 2003) thought that the newspaper "sometimes" uses a computer to change what's in a picture that it will publish. However, roughly the same percentage answered "sometimes" to the question "Do you thing chancing (sic) pictures, like removing unnecessary details from the background in order to make them more clearly illustrate the idea of a story, is acceptable?" More than half the respondents accepted that it would sometimes be all right if editors "cut out images of people the editor thinks are not important to the story." It is not clear from the wording of the

question whether it is talking about cutting the people out digitally or by conventional cropping. (Hantz & West)

This survey would seem to show a wider acceptance of image manipulation among the public than Becker, Vernon and others would believe, though the survey did show that those who felt that manipulation happened "all the time" did score the credibility of newspapers lower. (Hantz & West)

Shiela Reaves, (2004) working with other researchers, took another look at digital manipulation of published images in *If Looks Could Kill: Digital Manipulation of Fashion Models*. This time she looked at readers' perception of, and reaction to, the digital manipulation of models' bodies in glamour magazines. Reaves and her co-researchers were concerned about the practice's contribution to young women falling prey to low self-esteem and eating disorders while trying to live up to the images of unrealistically thin models depicted in the pages of the publications. Their research question was:

> Magazine professionals may understand that their world is not reality but instead mere paper. However, do their readers? This research explores reader perceptions of the prevalence of digital editing and their judgment of its ethical ramifications when used to render thin models even thinner. (p. 60)

Eighty-nine female students were recruited from basic-level mass communications courses at a midwestern university. The researchers felt women of this age were appropriate subjects because they make up a large portion of the target

demographics for magazines such as *Vogue* and, because eating disorder primarily strike young women. (Reaves, Hitchon, & Yun, 2004)

The participants were questioned about their knowledge of digital manipulation applied to images published in magazines and about their own experience using computer software to alter images. They were also shown sets of images, some of the images were as they appeared in *Vogue* and the others were ones the researchers had sought to "digitally restore the images to a healthy slimness." (Reaves et al., p. 62)

The participants seemed well informed as to how routinely manipulation was performed on images in magazines. On a scale of 1 (unaware) to 7 (fully aware) the mean score was 5.59, though their hands-on experience scored a low 2.21. (Reaves, Hitchon, & Yun, 2004)

Their knowledge of the manipulation did not translate into approval of it. With a 1 being strongly disagreeing and a 7 being strongly agreeing, they scored a mean of 2.55 with a standard deviation of 1.46. Reactions measured were a sense of betrayal (M=4.44); and a feeling that the practice was dishonest (M=5.15), unethical (M=4.93), and unfair (M=4.82). (65-66) (Reaves et al.)

As stated though, this study looked at the genre of fashion magazines. This genre of publications has never claimed the ethical high ground of journalism. Thus, the findings are not easily used as a gauge to measure the public's trust of images in the daily newspaper. But, even without evidence of image manipulation at a particular publication, the genie is out of the bottle as far as the reader is concerned. Vicki Haddock (2003)

Do readers believe what they see?

wrote in the *San Francisco Chronicle*, "As people acquire digital cameras and discover what a snap it is to alter reality with the click of a mouse…they are primed to be skeptical." In 2004, Adobe reported that there were approximately 5 million registered users of its various versions of Photoshop. (Hafner, 2004)

But what does it mean to the photojournalist?

"Accurate representation is the benchmark of our profession." Dona Schwartz of the University of Minnesota quotes the NPPA's "statement of principle" on digital manipulation adopted in 1990. (Schwartz, 1999, p. 178)

In *To tell the truth: Codes of objectivity in Photojournalism*, Schwartz wrote that "Photojournalism, cloaked in its mantle of objectivity, offers the viewer a vision of the world easily consumed and digested, while its naturalism perpetuates its legitimacy as an objective bearer of the news." (Schwartz, 1992, p. 108) As part of an effort to analyze photojournalism, Schwartz studied eight photojournalism textbooks in use at that time. She found that "A common presupposition…is that photojournalism's primary responsibility is to engage and inform a non-specialized mass readership." (p. 97) She also found that "Photojournalism relies upon the notion that photography captures an objective record of reality for viewers." (p. 107)

An analysis of *NewsPhotographer* articles from 1980 through 1988 showed that photojournalists were concerned that misuse of electronic manipulation could hurt the status of the profession and damage the credibility of their images. (Becker, 1991)

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Photojournalists felt that maintaining their credibility was dependant on the public's trust in their photographs as "pictures of reality". (Becker, p. 396) The analysis concluded that photojournalists "see themselves as responsible for establishing and maintaining the standards of photography in the press." (Becker, p. 396)

Robert Trippett (2005), a freelance photojournalist, put it this way:

> The illusion of verisimilitude—the believability of the moment captured — that is the rock foundation that photojournalists stand on, even if in reality that rock is made up of infinitely malleable zeros and ones. Ultimately a photojournalist should strive to temper their desire to produce an image that jumps off the printed page with the debt of honesty owed to the subject, a responsibility due both before and after the inviolable instant the shutter is released. (Trippett, p. 15)

While this is what photojournalism is, what does a photojournalist do?

John Russial and Wayne Wanta (1998) showed that the skills needed to carry out electronic imaging have quickly become a major influence on the photographer's ability to be hired. The authors conducted a national survey to discover just how important it became and to see if the nation's photojournalism schools had been able to keep up with the demands. The survey was based on five research questions:

1. What is the extent of digital imaging use at U.S. dailies?
2. What skills are most important for photographers today?
3. What skills are likely to be important in five years?
4. Are there shifts in skills toward convergence?
5. To what degree do photo editors consider digital imaging skills as hiring criteria?

Do readers believe what they see?

The results of the first question were almost unanimous. More than 94% of the papers used digital imaging for at least 90% of their images. The vast majority of the papers worked with Adobe Photoshop software on a Macintosh system. Matching that, the importance of digital imaging skills was high in 1998, much higher than traditional darkroom skills and even higher than photo editing skills. The projected skills for five years out were even further from the "conventional" skills and more into the digital ones. The photo editors predicted that the only skill on the list that will be less important than the ability to conventionally print photos would be the ability to shoot video. When hiring, digital skills are second only to a quality portfolio in what factors editors weighed when making their decision. Printing skills were so far down the list to hardly even register. (Russial and Wanta, 1998)

Is digital making photographers unhappy?

However, is all this good or bad news as far as the photojournalist out in the field is concerned? Russial (2000) tried to answer that in his article *How Digital Imaging Changes Work of Photojournalists.* Russial surveyed 362 daily papers' photo editor or chief photographer seeking answers to three research questions:

1) What does a photographer's average workday entail?

2) Does digital imaging lead to changes in workload and staffing?

3) What is the impact of digital imaging on quality of work and quality of work life? (p. 772)

Russial received 225 responses for a 62.2 percent response rate. According to his data, photographers spend a little more than three hours a day shooting and two hours a day each “using a computer”, “using Photoshop”, and scanning. (Russial, 2000)

Russial goes on to speak of the increase amount of “back shop” or production work “which suggests an erosion in quality of work life and, potentially, job satisfaction.” (p. 78) In my opinion, this fails to take into consideration another factor of the photographer’s life in the pre-Photoshop days. That is, the amount of time the photographer spent processing and printing. In the 1980’s, if a newspaper was working with color negatives, the film would have to be processed and then a print made. For a color photograph this could routinely be a 90-minute process. Black and white was not much faster. After a color print was made and selected for publication by a page designer, it would head to the composing room to have the separations made. Now that multi-step process can be done, start-to-finish, in 15 minutes. The photographer correcting color in Photoshop, as he would have done in a print room, is not taking on additional tasks, he is simply doing what he as always done, just quicker and easier. His doing the back shop prepress work consists of a keystroke or two and is hardly noticed in the much faster process of today.

In a previous article, Russial (1995a) took a look at how computerized pagination and copyediting impacted workers on a paper’s copydesk. One of his findings was that the editors were spending significantly more time doing what had been traditionally “back shop work” and that this had a negative impact on the time the editors had to

actually edit copy. In that vein, he seems leery of photojournalists and photo editors being pulled away from capturing images and getting stuck doing production work. In *Pagination and digital imaging: a contrary view*, Russial (1995b) argues for a system such as that used by The (Bend, OR.) Bulletin which operates under the theory that pagination and digital imaging are production jobs and, thus, the production shop—a concept radically different from most papers using electronic imaging—will do them. The Bulletin has a three-person "imaging staff" that handles the color scanning and digital imaging work. Russial quotes the photo chief as saying "As long as there's communication, it works out fine." (p.49) He cites the managing editor acknowledging that the photographers like to do their own scanning and thus have more control of their work. The ME also reported the photographers concerns that they may be falling behind their contemporaries and missing out on a skill they will need to be able to work elsewhere. (Russial, 1995b) Russial's later study with Wanta would seem to justify those concerns.

Reaves (1995a) has shown that one of the things protecting against crossing the manipulation line is having the people with a background in photojournalism doing the Photoshop work. If the imaging people are production and not photographers, then the possibility of "doctored" prints may increase.

Janet Roehl and Carlos Moreno (2001) in *Digital Photography and its Impact on Photojournalists' Job Satisfaction* voice a contrary view to Russial's. In their study they asked if photojournalists who use digital cameras are more or less satisfied with their jobs

than photojournalists who use film camera. They also checked to see if the age of a photojournalist impacted their job satisfaction with either medium.

Surveys were returned by 130 newspaper staff photojournalists. Responses showed that digital photojournalists do, indeed have slightly greater job satisfaction than their film counterparts. The responses did not show any relationship involving the age of photographers and the medium they shoot in. The older age group generally had higher job satisfaction regardless of the medium they worked in. (Roehl & Moreno)

This study is important because if photojournalists sensed a loss of credibility then it could be expected for their job satisfaction to drop. The older shooters, in particular, would have the sense of loss and their job satisfaction would reflect that. This study seems to show that most photojournalists, film or digital, young or old, are generally a happy lot. This suggests that those in the trenches have not noticed a drop in credibility.

In fact, when Shahira Fahmy and Zoe Smith (2003) conducted interviews of some of the top photojournalists in the field in 2001 concerning the advantages and disadvantages of digital photography, ethical concerns of image manipulation did not come up. The interviewees voiced concerns mostly about the challenge of long-term storage of the images that were shot. Other concerns cited involved the day-to-day job such as the increased role of photographer as editor or increased isolation of the photographer from the newsroom. (Fahmy and Smith, 2003)

Do readers believe what they see?

Digital photography is here, it is not going away and the profession has come to some understandings about what is acceptable practice. However, the general public's awareness of the potential capability of digital imagery is to be growing.

Methodology

The purpose of this study is to discover what the public considers to be an acceptable level of image manipulation and how much manipulation they believe is done in their local newspaper. In conducting the literature review, no studies were found that utilized a random sample of the public. It would seem that, with the goal of discovering what the public thought; the best thing to do would be to ask them. Thus, this study is based on a phone survey of a random public sample.

Another goal of the study is to see if there is a relationship between people having a working knowledge of imaging software and their acceptance of digital manipulation, or their perception of how much manipulation, is being done to the images in their daily paper. This study explored these issues using a survey that addressed the following research questions:

R1) What level of digital manipulation is the general public willing to accept when it comes to the photographs in the news section of their daily newspapers?

R2) How much digital manipulation does the general public believe is done to the photographs in the news section of their daily newspapers?

R3) Is there a correlation between a person's familiarity with imaging software and that person's views on, or expectations of, digital manipulation of the photographs in the news section of their daily newspapers?

Survey Sample Subjects

The survey sample was drawn from the Highland-Alhambra area of Madison County, Illinois. This area is in the eastern part of the county approximately 30 miles from downtown St. Louis, Missouri. This area has a population of 15,045 people according to the U.S. Census Bureau figures for 2000; the vast majority of which, 13,449, live in the Highland zip code (62249). The Alhambra zip code (62001) has a population of 1,596. As shown in Table 1, the people in the area seem to be older and have a higher income than the nation as a whole. While a smaller percentage of the population 25 or older did not complete high school, there is also a smaller percentage who have earned a bachelor's degree or higher. (United States Censes Bureau, n.d.) None of the people partaking in the phone survey self-reported not finishing high school.

This area is served by a large daily newspaper (*St. Louis Post-Dispatch*), a medium-sized daily (*Belleville News Democrat*) and a weekly community newspaper (*Highland News Leader*). Respondents were evenly split among the three in answering "Which newspaper do you read most frequently?". The *Post-Dispatch* had the 28th largest circulation (286,310 daily) in the United States for 2004. (*Detroit Free Press*, n.d.) The *News Democrat* has a circulation of 56,000 daily. (St. Louis Business Journal, 2006) The

largest portion of the *Post-Dispatch's* readership, 40%, falls between the ages of 35 and 54; 61% of the readership is households with an income of more than $50.000. The education level of the Post's readership is evenly split among those who have completed high school, those with some college and those with a 4-year college degree or higher (32%, 31%, 31%, respectively), 6% have less than a high school diploma. (Audit Bureau Of Circulation, 2004)

Table 1

Area age, income and education demographics

	National	Highland, IL zip code	Alhambra, IL zip code
Median age	35.3	37.5	42.3
Median household income	$42, 148	$49,624	$46,833
Didn't finish high school	19.6%	13.4%	20.8 %
4-year degree or higher	24.4%	20%	10.9%

The population of the Highland-Alhambra area more closely matches the readership of the *St. Louis Post-Dispatch* in terms of income and age than does the national population. One category that the population does significantly differ from the paper's readership is ethnic diversity. African-Americans make up 15% of the daily

readership (Audit Bureau Of Circulation) but are less than 0.1% of the population of the sample area. (United States Censes Bureau, n.d.)

Subjects were selected based on the local phonebook published by Verizon. Attempts were made to reach every sixth residential number. The order of the pages was selected at random through the use of Random.org. A roll of the die determined the starting point on each page. A total of 885 phone numbers were called in June and July 2005. Of those, 426 did not result in direct contact with an adult. Either the phone number was invalid, the phone was not answered, the line was busy or the surveyor reached an answering machine. Additional efforts were made to reach the numbers that were busy, or were not answered. The 426 do not include phone numbers where contact was made in subsequent attempts. Contact was made with 459 households. Of those, there were 157 respondents for a 34.2% response rate of the potential subjects that were contacted. Factors that may have contributed to this response rate included a story in the local community paper explaining the purpose of the study and the surveyor's access to a local phone number from which to make the calls.

The first part of the survey (See Appendix A) is designed to provide data on newspaper usage and familiarity with imaging software and digital cameras. The second portion is designed to provide data on subjects' acceptance of digital manipulation of news images. The third part addresses what the subject perceives is being done to the news images they see in the newspaper. This section is followed by one question that

directly address the issue of trust. The last three questions provide demographic information.

The SPSS software was used to compile and analyze the collected data.

Data and Analysis

R1) What level of digital manipulation is the general public willing to accept when it comes to the photographs in the news section of their daily newspapers?

The respondents were asked to rank on a scale of one-to-five (with five being the highest level of acceptance) the appropriateness of various manipulations that can be done to news images. The survey results indicate readers are accepting of the "routine" manipulations of cropping, color and density corrections and spotting. Table 2 shows that spotting, color correction and density correction all scored a median of "5" which was the far "always acceptable" end of the scale. (Please see the appendix for the frequency tables in this area.) This shows an acceptance of these adjustments. The respondents had more concerns about cropping, giving it a lower, though still approving, median of 4. While subjects were not asked to expand or explain the number they assigned to each adjustment, some offered unsolicited responses explaining their ranking for this adjustment would depend on what was being cropped out of the image.

Table 2

Appropriateness of Manipulation

Appropriateness of:	Median	Mean	Std. Deviation
Spotting	5	4.273	1.0738
Color Correction	5	4.243	1.2918
Density Correction	5	4.202	1.1198
Cropping	4	3.715	1.3134
Dodging & Burning	3	2.901	1.4131
Removing distracting elements	2	2.47	1.404
Moving items in image	1	2.060	1.3068
Removing larger items	1	1.517	.9946
Adding or removing people	1	1.517	.9384

Respondents were asked to rank the appropriateness of various image manipulations on a scale of 1-5 with “5” being always and “1” being never.

Readers unsure of burning & dodging

Burning and dodging was the one commonly performed digital manipulation about which the respondents had some ambivalence. (Table 2) The score of a neutral "3" median, on the 1-5 scale, and a slightly less than 3 (2.9) mean given to burning and dodging seems to indicate that the public is unsure when it comes to the appropriateness of this adjustment. This may be due in part to the way the question was worded: "Burning and dodging—darkening or lightening an area to add or remove emphasis from that portion of the image." Some respondents expressed the sentiment that they wanted to decide for themselves which part of the photograph should receive the most attention.

Regardless of the reasoning behind the responses to this question, the results differ greatly from the responses Shiela Reaves collected in her study of photo editors (1992) and Brad Thompson received in his study of photojournalists (2006). When Reaves showed her subjects a photo in which the sky darkened and the subject's face lightened 86% either strongly or somewhat agreed with the adjustment (1992). In Thompson's study of photojournalists, 57% responded that it was "acceptable to selectively lighten and darken areas of an image" that was being used as spot news coverage. (2006) In this study, only 32% answered equivalently (See Table 3). It is possible to speculate that if the respondents of this phone survey had been able to see an example of burning and dodging, as Reaves's photo editors had, their answers might have shown greater approval.

Table 3

Frequency of Burning and Dodging acceptance

	Frequency	Percent
1	33	21.2
2	29	18.6
3	39	25
4	20	12.8
5	30	19.2
Total	151	100%

Thomas Wheeler is quoted earlier asking at what level of reader unacceptability should "the professional rethink the practice in question?" (Wheeler, 1996) Table 3 shows nearly 40 percent of the respondents gave burning and dodging a negative level of appropriateness. Another 25 percent were neutral on the question. Burning and dodging is an adjustment long accepted by photojournalists. However, concerns raised have been within the profession that some photographers have taken burning to such an extreme as to effectively remove elements, thus crossing the ethical line. (Siegel, 2003)

Inappropriate manipulations

Survey results indicate that when it comes to removing large objects, adding or removing people, and moving items or people within an image to better fit a crop, the

readers are solid in their disapproval. Table 2 shows that each of these questions score a median of 1, the far “never acceptable” end of the scale. This strongly shows that the public feels these manipulations should not be performed on news photographs under any circumstances.

These results parallel the results achieved by Reaves (1992) and Thompson (2006) in their surveys of photo editor and photojournalists. Questions concerning the appropriateness of moving elements within an image, so that it might better fit a particular crop or space in a layout, were asked in all three of the surveys (of course the wording of the questions varied). Reaves found 93.5 of the photo editors disagreed with the practice, 86.8% of Thompson’s photojournalists disagreed (though he only asked pertaining to “cover photos” not news images) and 82.7% of the members of the public responding to this survey found the practice inappropriate (scoring it a “1” or a “2”).

In another example Reaves found that 88.9% of photo editors either “strongly” or “somewhat” disagreed with the example they were shown of someone being removed from the background of an image. (1992) My study finds 83.3% of the respondents giving equivalent answers.

Comparing the findings of this study with Reaves’ (1992) and Thompson’s (2006) indicates that the public and the profession are of a very similar mind when it comes to these more radical manipulations.

The respondents were more accepting of removing distracting elements such as power lines than they were of the other, more drastic, manipulations. While the question

still scored a disapproving median (2), it is notable that just slightly less than half (47.4%) of the respondents either gave it a neutral or acceptable ranking on the 1-5 scale. In this area, the public seems to be more accepting of the practice than the profession is.

Research Question 1 summary

Over all, the answer to this research question, as to what manipulations the public finds appropriate, seems to be very close to what the profession finds appropriate. Cropping, correcting the color, correcting the density, and the removal of dust spots or other defects that were not in the original scene are as acceptable to the readers as they are to the profession. The argument can be made, and has been, that these manipulations bring the images closer to what the photographer saw; or, at least, do not decrease the "truth" of the image. The manipulations that are thought to decrease the "truth" of an image, like digitally removing elements (large or small), adding or removing people and rearranging elements within an image—are not acceptable to the readers.

The exception, where the public may not agree with the profession, would seem to be dodging and burning, which is widely accept by the profession but, according to this study, the public is undecided.

R2) How much digital manipulation does the general public believe is done to the photographs in the news section of their daily newspapers?

After being asked about the appropriateness of various image

adjustments/manipulations the respondents were then asked how frequently they thought the same manipulations were performed on the news images in their daily newspapers. The answer choices given were: never, rarely, monthly, weekly and daily. Eighteen respondents (11.5% of the total) refused to answer any of these questions and two other respondents refused to answer some of these questions. Many made comments like “I’ve never thought about it” or “I have no idea”. The lack of knowledge concerning the practice of newspaper photographers made some participants unwilling to venture a guess as to the frequency of use of these manipulations. “I don’t know” was not given as an answer option, but if a respondent chose not to answer a question a “no response” was recorded.

Tables 4 through 12 show the frequency of responses to the questions asking how often the survey subjects thought the various manipulations were being done to the news photographs in their local daily newspaper.

The “good” adjustments

The manipulations of which the respondents were the most accepting—spotting, color correction, density correction and cropping—were also the ones they thought were done the most often. (Tables 4, 5, 6 and 7) The median of each of these adjustments fell squarely in the “daily” range. More than 60% of all respondents said they thought these manipulations were performed on a daily basis.

Table 4

Readers think images are spotted:			
	Frequency	Percent	Valid Percent
Never	3	1.9	2.2
Rarely	7	4.5	5.1
Monthly	6	3.8	4.4
Weekly	17	10.9	12.4
Daily*	104	66.7	75.9
Total	137	87.8	100
No response	19	12.2	

*Median of responses

More than three fourths of those responding thought spotting, the adjustment with the highest acceptance mean, was done on a daily basis (Table 4). The other highly accepted manipulations showed similar numbers in the belief of occurrence. Color correction was thought to occur daily by 69.3% of those who gave a response and another 17.5% thought it was done weekly (Table 5).

Table 5

Readers think color is corrected:

	Frequency	Percent	Valid Percent
Never	6	3.8	4.4
Rarely	7	4.5	5.1
Monthly	5	3.2	3.6
Weekly	24	15.4	17.5
Daily*	95	60.6	69.3
Total	137	87.8	100
No response	19	12.2	

*Median of responses

An overwhelming majority of those willing to answer (93.5%) said they thought density and contrast correction was done at least weekly—73.2% said daily. (Table 6)

Table 6

Readers think density is adjusted:

	Frequency	Percent	Valid Percent
Never	2	1.3	1.4
Rarely	5	3.2	3.6
Monthly	2	1.3	1.4
Weekly	28	17.9	20.3
Daily*	101	64.7	73.2
Total	138	88.5	100
No response	18	11.5	

*Median of responses

Similarly, 81.9% said they thought images were cropped on a daily basis (Table 7). Another 10.9% thought it was done weekly for a combined percentile of 92.8%.

As in the acceptance part of the survey, burning and dodging is the commonly done adjustment that seems to give the survey subjects some pause. More of the participants chose not to answer this question than any of the others. While the expectancy of occurrence is still high (Table 8) the median fell between daily and weekly. It is the only “routine” adjustment not to have a “daily” median.

Table 7

Readers think images are cropped:

	Frequency	Percent	Valid Percent
Never	3	1.9	2.2
Rarely	4	2.6	2.9
Monthly	3	1.9	2.2
Weekly	15	9.6	10.9
Daily*	113	72.4	81.9
Total	138	88.5	100
No response	18	11.5	

*Median of responses

Table 8

Readers think images are burned or dodged:

	Frequency	Percent	Valid Percent
Never	2	1.3	1.5
Rarely	12	7.7	8.8
Monthly	15	9.6	11.0
Weekly	39	25.0	28.7
Daily	68	43.6	50.0
Total	136	87.2	100
No response	20	12.8	

Despite the high expectancy of occurrence these practices received, many of the respondents (at least 20%) actually under estimated how frequently they are done. Virtually every news photograph published is cropped at some point in the process. While some images made by talented photojournalists, may make it into the paper with a minimum of corrections to their color and density, these adjustments—if only to meet the requirements of the presses' reproduction capabilities—are done somewhere in the news section everyday.

Even if readers approve, it hurts

Given that the respondents gave most of these manipulations such high levels of acceptance in the first part of the survey, it would seem reasonable that their belief such manipulations were done on a regular, if not daily, basis would not impact their trust in the published images in the newspaper.

However, this study found a negative correlation between how often someone thinks almost any manipulation is done (density correction and spotting are the exceptions) and the level of trust they assigned to news images. (See Table 13) The degree of negative correlation varies among the manipulations but a belief that images are cropped, have their color corrected, or are burned and dodged on a routine basis does go along with a lessening of perceived image integrity, however slight, among the readers.

The "bad" adjustments

The manipulations the survey participants oppose: removing minor distracting elements, removing larger objects, adding or removing people and moving people or objects within an image to help it fit into a given space provide the responses that should be the most disconcerting to the profession.

The acceptance of adding and removing people from photographs received a median of 1 and a mean of 1.5 in the first part of the survey making it one of the two most disapproved of manipulations. However, while in this section the median fell in the "rarely" area, 32% of the survey participants (36% of those responding to this question) still said they thought that people were added to or removed from the images appearing on the front page or in the news section of their local, daily newspaper at least weekly (See Table 9).

Table 9

Readers think people are added or removed:

	Frequency	Percent	Valid Percent
Never	36	23.1	26.1
Rarely*	35	22.4	25.4
Monthly	17	10.9	12.3
Weekly	27	17.3	19.6
Daily	23	14.7	16.7
Total	138	88.5	100
No response	18	11.5	

*Median of responses

Most photojournalists and their editors would panic if they were told that a third of their readers thought they routinely digitally added or removed people from their published news images. Yet that is what the results of this survey show. One quirky finding in this section is that nine respondents said they thought people were added or removed from images at least weekly but then went on to rate their level of trust in the news images as a four or higher on the scale of 1-5.

Table 10

Readers think larger objects are removed:

	Frequency	Percent	Valid Percent
Never	26	16.7	18.8
Rarely	39	25	28.3
Monthly*	17	10.9	12.3
Weekly	38	24.4	27.5
Daily	18	11.5	13.0
Total	138	88.5	100
No response	18	11.5	

*Median of responses

In the first section of the survey, respondents frowned on removing larger objects from the images as much as they did removing people. And, like the removal of people, approximately a third of the survey participants (36%) said they thought it happened as frequently as weekly. (Table 10) The median of this question fell in the “monthly" range.

In the realm of moving elements within an image to help it fit into a crop, the median fell in the monthly area. However, more than 45% of the respondents said they thought that elements were rearranged within a photograph to help the image fit on the page on a weekly or daily basis. (See Table 11)

Table 11

Readers think objects are moved in an image:

	Frequency	Percent	Valid Percent
Never	15	9.6	10.9
Rarely	28	17.9	20.3
Monthly*	29	18.6	18.6
Weekly	29	14.7	18.6
Daily	37	23.7	26.8
Total	138	88.5	100
No response	18	11.5	

*Median response

The removal of minor distracting elements had the highest perceived frequency of occurrence (a median of “weekly”) among the manipulations the profession frowns on. This is not surprising since it had the highest reader approval among the disapproved of manipulations. It would still cause concern within the profession though, that only 26% of the survey sample thinks it only happens rarely or not at all. (See Table 12)

Table 12

Readers think distracting elements are removed:

	Frequency	Percent	Valid Percent
Never	17	10.9	12.3
Rarely	24	15,4	17.4
Monthly	25	16.0	18.1
Weekly*	36	23.1	26.1
Daily	36	23.1	26.1
Total	138	88.5	100
No response	18	11.5	

*Median response

Research Question 2 summary

The simple answer to the question of how much manipulation the public think is being done is: far more than is actually being done.

As stated earlier, even if the public says an adjustment is acceptable (i.e. color correction), there is can still be a negative correlation between how often it is believed to be done and the level of trust placed in the images. (Table 13) This adds to the indication that adjustments need to be kept to a minimum. With the exception of density correction

and spotting, the perception that any of the adjustments/manipulations are performed on images on a regular basis goes along with the public's loss of faith.

Table 13

Correlation of manipulation and image trust

	Correlation to image trust	
Manipulation	Pearson Correlation	p < (2-tailed)
Cropping	-.184	.031
Color correct	-.173	.043
Density correct	.039	.652
Dodge & Burn	-.231	.007
Spotting	.059	.493
Remove minor elements	-.328	.000
Remove larger items	-.402	.000
Add/remove people	-.512	.000
Move items	-.278	.001

All of the manipulations of which the survey participants strongly disapprove (the same ones the profession bans) also have a third or more of the participants saying they think these manipulations are happening weekly, if not more often, in the news sections of their daily newspaper. The results of this survey say that a third of our readers suspect that in any given week they are going to see a photograph in their paper that has had someone added to or removed from it. A full quarter of our readers suspect that on any given day, the objects and people inside our images might be rearranged, like the furniture in a room, so that they might "fit" better.

Clearly, having such a large portion of the public thinking that such drastic manipulations are done on such a routine basis challenges the perceived integrity of photojournalism.

R3) Is there a correlation between a person's familiarity with imaging software and that person's views on, or expectations of, digital manipulation of the photographs in the news section of their daily newspapers?

Respondents were asked to rate on a scale of one-five (with five being the highest) their trust that the images in the news section of their daily newspaper "truthfully depict the scene photograph". The overall mean was 3.564 with a median of 4. Table 14 shows the frequency of responses. While the number of "untrustworthy" responses of 1-2 is relatively low, the number giving a "trustworthy" score of 4-5 come to only slightly

more than half of the respondents. Close to a third of the participants were neutral in their scoring of trust.

Table 14

Trust score frequencies

	N	Percent
1	5	3.2
2	15	9.6
2.5	4	2.6
3	48	30.8
3.5	4	2.6
4	46	29.5
4.5	2	1.3
5	32	20.5

Table 15 shows that there was little variance in the responses of those who either had imaging software at home or who used it at work or school (or both) and those who did not have imaging software either at home or at work. Many of the respondents are included in more than one subset as different levels of familiarity with imaging software were examined. For example, someone who routinely used the software at work and had

it at home would be included in the “at home”, “at work” and the “at home and work” subsets.

Table 15

Readers’ trust in the news images in their paper:

Respondents:	N	Mean	Std. Deviation
All	156	3.564	1.0344
Without imaging software	74	3.541	1.1310
With imaging software (home, work or both)	82	3.585	0.9454
Use imaging software at work or school*	30	3.683	.8952
With imaging software at home*	71	3.514	.1094
With imaging software at home **only**	52	3.529	.9218
With imaging software at work **only**	12	3.958	.8952
With imaging software at work and home	18	3.500	.7859

*With or without software anywhere else

Someone who routinely used imaging software at work but did not have it at home would be included in the "at work" and "at work only" sub-set.

There is no statistically significant difference in the trust level among the various familiarity subsets (See Table 15); however, there is significant difference in the acceptance level some of the manipulations between those who routinely work with imaging software at work or school and those who do not. Those who routinely work with the software are more accepting of both adding or removing people for an image and of removing larger elements from the photograph. They are also more accepting of cropping images. While none of the differences moved the mean of a manipulation from an unacceptable score to an acceptable one, it does show that a person's familiarity does have an impact on their acceptance of manipulation (See Tables 16, 17 & 18).

Table 16

The impact of routinely using imaging software at work or school on the acceptance of cropping

			Std. Deviation	Levene's test for equality	
	N	Mean		F	p <
Does use	30	4.267	1.3580		
Does not	121	3.567	.9444	5.642	.019

Table 17

The impact of routinely using imaging software at work or school on the acceptance of removing larger objects

			Std. Deviation	Levene's test for equality	
	N	Mean		F	p <
Does use	30	2.100	1.1847		
Does not	121	1.632	.9259	7.403	.007

Table 18

The impact of routinely using imaging software at work or school on the acceptance of adding or removing people

			Std. Deviation	Levene's test for equality	
	N	Mean		F	p <
Does use	30	1.900	1.2134		
Does not	119	1.424	.8378	11.275	.001

There are similar results when comparing the smaller subset (N=18) of those who use imaging software at work and have it at home. Everyone in that group is included in the larger subset of those who use the software at work (Tables 15-17). Analysis of those who have the software at home, but do not routinely use it at work or school did not show any statistically significant difference in acceptance of any of the

adjustments/manipulations or in the level of overall trust. The daily workplace exposure seems to be the deciding factor in these areas instead of more casual home use.

Except for cropping among those who have imaging software at either work or home, there is no significant difference concerning the expectation of manipulations among the respondents.

Research Question 3 summary

Familiarity with Photoshop, the type that comes from day-to-day use or comes from casual home use, does not have a correlation with the amount of trust the public has in the images on the front page of the newspaper.

It does give a greater acceptance (or less disapproval) of a few manipulations, but not enough to raise an inappropriate adjustment up to the high ground of acceptability. A greater expectation that images are cropped does track with increased Photoshop familiarity. But, there is no indication that greater expectation of any other adjustment/manipulation goes along with greater imaging software familiarity.

A median of 4 on the 1-5 scale does show that the majority of the public is more trusting of news images than not but it is a bare majority. Only 53.9% of the respondents rated trust higher than 3 while 15.4% rated it lower than the neutral 3. This means that nearly one third of the public is neutral on the trustworthiness of the images in the news sections of their local newspapers. It does appear that “seeing is believing” is no longer a given among readers.

Conclusions

Reaves, Long, Harris and other researchers have voiced concerns that as members of the general public became aware of imaging software, the perceived integrity of news images would start to suffer. That day may be here. This study found that those who work with imaging software on a regular basis has a different level of acceptance then does those who do not.

As the cartoon in the introduction of this thesis implies, it is not necessary to personally use Photoshop to be aware of its capabilities. While this survey does not answer whether the simple awareness of Photoshop has damaged the public's trust in the published news image, it does show that the trust is lower than most professionals would want it to be. The 30% of respondents that placed their level of trust at a neutral "3" may have gone with that score as a default—the equivalent of saying "Well, I don't have any reasons NOT to trust the images I see." But, it is troubling when only slightly more than half of the respondents feel the mere fact that an image is published in the newspaper is sufficient reason to trust it.

Many of the readers believe that drastic manipulations are being done on a regular basis (see Tables 9-12). This study also shows that there is a correlation between the belief in a high occurrence of manipulation and the loss of trust (Table 13). The

combination of these two findings shows the challenge facing the profession. Perceived image integrity is not assigned by the photographer or the photo editor. It is assigned by the readers and are having their doubts.

Each publication must protect its own reputation

Other studies cited earlier showed that the public's trust in images depended more on the respect the community has for the publication (what Fetveit referred to as "institutional warrant") than it does on the technology used to capture or publish the image. Just like a news organization's reputation impacts the credibility of the written words it produces, so, too, does it impact the images it produces.

This makes it of life and death importance for publications to know what reputations they have and for those with a good reputation to safeguard it. A major step is not to self-inflict any damage. This is avoided by strictly enforcing a photographic code of ethics. Each photographer, photo editor and page designer must know what may and may not be done to the images being published. There also must be consequences for violating the rules.

Newspapers must strive to educate their readers about their photographic policies. This needs to be a continual process. An article every few years in response to a scandal somewhere may not be enough to increase the local readers' confidence. A large portion of the readers know that people can be removed from images relatively easily. One third

of the respondents to this survey said they thought it happened at least weekly. Publications need to figure out how to counterbalance that.

One possible solution would be to publish a statement of policy on the publication's website. A logical placement would be in or near posted image galleries. Regular placement within the paper itself would also be of help. Publishers need to think of other ways that they can get the message out reassuring their readers of the integrity of the images printed in the pages of their publication.

What the public wants

It could be inferred from the results that the public wants to see what the photographer saw looking through the viewfinder. The adjustments/manipulations the survey respondents found acceptable are the ones that correct technical deficiencies. Color *correction*, density *correction* and the removal of dust specks or other defects not in the original scene are all seen by readers as acceptable adjustments. Dodging and burning is met with more skepticism. If done to extremes, it can change the image away from what the photographer saw. Adding or removing elements and people or moving them around inside the image, changes the image away from the photographer's view and these manipulations met with the public's disapproval.

From the public's viewpoint, less is better. Even the approved adjustments/manipulations should be kept to a minimum. Excessive cropping, color correction and burning or dodging go along with decreased perceived image integrity.

Demographics and trust

While this study's research questions were not concerned about a person's gender, age or level of education having an impact on their level of trust, the survey did collect data in these areas.

It was found that women rated their trust level higher than men did to a statistically significant degree. The mean for women was 3.7 to men's 3.352. (See table in appendix) Gender was not found to play a statistically significant role in the level of acceptance nor in the expectance of occurrence of any of the manipulations.

Age was not found to have statistical significance in the ranking of trust. The ANOVA test did show significance in the acceptance level of the removal of larger elements from an image. However, the Tukey post hoc test showed that this only applied to a comparison of the respondents in their 40's and those in their 50's.

Correlations were found between the respondents' age and the expectation that some of the adjustments/manipulations will take place (Table 19). The older the person, the less likely they were to think various manipulations happened on a regular basis. This seems to indicate that younger readers may be less trusting of the images in newspapers.

Table 19

Correlation of age and expectancy of manipulation

	Correlation to age	
	Pearson	p <
Manipulation	Correlation	(2-tailed)
Cropping	-.204	.016*
Color correct	-.188	.028*
Density correct	-.204	.005**
Dodge & Burn	-.109	.208
Spotting	.224	.009**
Remove minor elements	-.305	.000**
Remove larger items	-.189	.026*
Add/remove people	-.118	.168
Move items	-.125	.142

*Significant at the 0.05 level
** Significant at the 0.01 level

Like age, education did not have a significant impact on how the respondents ranked their trust of the news images in their daily newspapers. The ANOVA analysis did show significance in the acceptance of moving elements within an image. However, the

Tukey post hoc test did not show any; although, the LSD post hoc did show a significant difference between those with a high school education and the other education groups. No correlation was found between education level and their expectant frequency of occurrence of any of the adjustments/manipulations.

Suggestions for further study

One survey is not able to identify a trend. There is continued concern about the integrity of photojournalism. Other surveys should be conducted at regular intervals to identify any possible increase or decrease of the perceived integrity of the profession and possible causes of the changes, if any. The additional surveys will need to be crafted to reflect the changes in the profession; namely, the decrease in newspaper readership and the increase in the number of people who get their news from the Internet.

There is a need for studies of how the increased use of the Internet as a news source impacts the perceived integrity of photojournalism. The decades-old saying was "Don't believe everything you *read* in the newspaper." The current equivalent is "Don't believe everything you *see* on the web." Does the change mean that images on the net have less validity than the ones published on newsprint?

There needs to be an understanding of what criteria are used by the public to assess credibility of images on the Internet. Does the public assign the same level of integrity to the images on a newspaper's website, such as www.kansascity.com, as it does to the images in the newspaper, *The Kansas City Star*, which produces the website?

Earlier, I spoke of the need for newspapers to take steps to establish and protect their reputations as a trustworthy source of news images. The effectiveness of these efforts needs assessment to identify which measures work and which do not.

This survey found burning and dodging to be significantly less accepted by the public than it is by the profession. An additional study could be conducted to confirm the accuracy of this finding.

Further study could be done to confirm and explore the difference in the ratings of trust between women and men. Also, further study could explore the possibility that people's age could be a factor either in the level of trust they have in news images or in how much manipulation they think is performed on those images.

Appendix A

Survey questions

Do you, or someone in your immediate family (parents, brothers, sisters or children), have a digital camera?

Do you have Adobe Photoshop, or other imaging software, on a computer at home?

Do you routinely use imaging software at work or school?

Do you subscribe to a daily newspaper?

If yes, which one?

On average, how many days a week do you read a newspaper?

Which newspaper do you read most frequently?

Do you regularly read any national newspapers (for example: *New York Times, USA Today, Los Angles Times*)?

On a scale of one to five (with one being never and five being always), how appropriate is it to do the following types of computer adjustment to news photographs that appear on the front page or in the news section of your local daily newspaper:

Cropping—removing content by trimming off the edges of the photograph.

Correcting the color to match the original scene.

Adjusting the overall darkness or brightness of the image.

Burning and dodging—Darkening or lightening an area to add or remove emphasis from that portion of the image.

Spotting—The removal to dust spots and other defects that were not in the original scene.

Removing distracting elements—such as power lines—from an image.

Removing larger objects—such as buildings and trees.

Adding or removing people from the photograph.

Moving people and objects in the photograph in order to get them to fit within the available space.

How often do you think the news photographs appearing on the front page or in the news section of your local, daily newspaper are subjected to the following computer adjustments:

1 = Never, 2 = Rarely, 3 = Monthly, 4 = weekly, *5* = daily

Cropping—Trimming off the edges of the photograph.

Correcting the color to match the original scene.

Adjusting the overall darkness or brightness of the image.

Burning and dodging—Darkening or lightening an area of the image to add or remove emphasis from that portion of the image.

Spotting—The removal to dust spots and other defects that were not in the original scene.

Removing distracting elements—such as power lines—from an image.

Removing larger objects—such as buildings and trees.

Adding or removing people from the photograph.

Moving people and objects in the photograph in order to get them to fit within the available space.

On a scale of 1 – 5, how much do you trust that the photographs in the local daily newspaper truthfully depict the scene photographed?

Are you male or female?

Which of the following age groups are you in?
18-29, 30-39, 40-49, 50-59, 60<

What is your current level of education?

Have not completed high school; Completed high school; Some college; Completed four-year degree; Graduate level degree

Appendix B

The following tables show the frequency of response for the acceptance of the various adjustments/manipulation. The frequency of response for burning and dodging is not here since it is Table 3 in the text.

Table B1

Frequency of cropping acceptance

	Frequency	Valid Percent
1	16	10.6
2	7	4.6
3	40	26.5
4	29	19.2
5	59	39.1
Total	151	100%

Table B2

Frequency of color correction acceptance

	Frequency	Percent
1	14	9.2
2	6	3.9
3	10	6.6
4	21	13.8
5	101	66.4
Total	151	99.9

Table B3

Frequency of density correction acceptance

	Frequency	Valid Percent
1	6	4.0
2	7	4.6
2.5	1	.7
3	23	15.2
4	27	17.9
5	87	57.6
Total	151	100%

Table B4

Frequency of spotting acceptance

	Frequency	Valid Percent
1	7	4.7
2	4	2.7
3	17	11.3
4	35	23.3
5	87	58.0
Total	150	100%

Table B5

Frequency of removing minor elements acceptance

	Frequency	Valid Percent
1	55	36.2
2	25	16.4
3	39	25.7
4	12	7.9
5	21	13.8
Total	151	100%

Table B6

Frequency of removing larger items acceptance

	Frequency	Valid Percent
1	89	58.6
2	27	17.8
2.5	1	.7
3	26	17.1
4	7	4.6
5	2	1.3
Total	151	100.1%

Table B7

Frequency of removing people acceptance

	Frequency	Valid Percent
1	107	71.3
1.5	1	.7
2	17	11.3
3	17	11.3
4	6	4.0
5	2	1.3
Total	150	99.9%

Table B8

Frequency of moving elements acceptance

	Frequency	Valid Percent
1	77	51.3
2	23	15.3
3	24	16.0
4	16	10.7
5	10	6.7
Total	150	100%

The following charts document the impact of gender on the level of trust respondents assigned to the news images in their local newspapers.

Table B9

Gender variable: Trust

	N	Mean	Std. Deviation
Male	61	3.352	1.0422
Female	95	3.7	1.0116

Independent Samples Test: Gender

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	p <	t	df	p < (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Trust	Equal variances assumed	.004	.952	-2.069	154	.040	-.3475	.1680	-.6793	.0158
	Equal variances not assumed			-2.056	125.288	.042	-.3475	.1691	-.6821	.0130

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