

**Artemis Alexiou**  
Manchester Metropolitan University

## **Eco-systems, Interdisciplinarity, Triangulation: A New Methodological Scheme For Image Research and Beyond**

This essay perceives the image as a kind of communication medium, a kind of sign; not merely a semiotic sign, but a sign with various 'transversal' characteristics.<sup>1</sup> Theoretical frameworks on understanding the sign have been documented since the nineteenth century with Charles Sanders Peirce's numerous philosophical writings, which included his theory of the 'three trichotomies of signs'.<sup>2</sup> Conventionally methodologies on researching the image have been mostly influenced by theories from linguistics, art history and photography; analyzing the image for its semiotic and/or aesthetic values and not for its diverse relationships with the socio-techno-economic-political context of its time; its *eco-system*. This essay argues that a triangulated interdisciplinary ecosystematic approach to image research, could lead to greatly comprehensive image studies, beneficial for the field of art and design, and beyond. In particular, this essay demonstrates how Sunil Maghani's model of the 'ecology of images'<sup>3</sup> in combination with the concepts of 'interdisciplinarity'<sup>4</sup> and 'triangulation'<sup>5</sup> can co-exist in practice to inform image research, and produce multilayered results.

## 1/ Eco-systems, Interdisciplinarity, Triangulation: Definition and Interrelationships.

### Eco-Systems.

Sunil Manghani's concept of *ecology of images* was inspired by Susan Sontag's statement, which affirmed that:

If there can be a better way for the real world to include the one of images, it will require an ecology not only for real things but of images as well. <sup>6</sup>

Although Sontag is particularly referring to the photographic image, Manghani believes that such an idea could potentially be useful for image research in general. He explains that, similar to living organisms, images belong to and exist within their own eco-system, and that referring to an 'ecology of images' could very well be a resourceful method for researching the image. He borrows a set of key terms from the existing field of ecology, and creates an original model which, he affirms, could be used to guide and inform image research.<sup>7</sup> This eco-system, or the 'image system' that incorporates 'all the contextual factors which allow images to exist in the first place,'<sup>8</sup> represents the community within which the image exists; a community that the researcher can better understand, and investigate, by answering questions of 'distribution, abundance, energy, adaptation, and succession' in relation to a particular image.

If one wishes to apply the concept of the 'eco-system' to Maghani's own theory, one should accept that his theory exists within a variety of other theories, of which some are also discussing the idea of 'systems'. For example, starting from the premise that the image is a medium of communication, we ought to accept that any medium of communication belongs to the wider community of communication media. On this wider community of media, W.J.T. Mitchell and Mark B.N. Hansen referred to, when they affirmed that:

media are themselves mediated – constituted, that is, by a three-way set of exchanges among the dimensions of individual subjectivity, collective activity, and technical capability. <sup>9</sup>

In his eco-system of images, Manghani invites researchers to pause and reflect; study the image through questions of its 'histories, connections, cultures, adaptations' and future prospects. <sup>10</sup> Mitchell and Hansen advocate for resistance to the 'seductive fallacy of technical determinism' and call for a consideration of the 'complexity' that is involved in studying media. They affirm that the 'complexity' that is involved in media studies, is the inclusion of 'human perception, social, political, and economic arrangements, and technoscientific inventions,'<sup>11</sup> in the same way that Manghani's recent model is inclusive of all 'political, economic, technical, cultural, social and legal' events related to the image in question. <sup>12</sup>

In his essay *Systems*, David Wellbery discusses Niklas Luhmann's 'sociological systems theory', how it can be used and why it is important for studies on communication media. He writes:

no system can exist in (conceptual or real) independence from its environment. Systems, in fact, arise when they draw a boundary between themselves and their environment: when their operation establish a limit that distinguishes what is proper to the system itself from the milieu within which the system operates.<sup>13</sup>

In a similar vein, Manghani states that 'an image always exists in a set of contexts'; the image exists when working 'with or against' its environment.<sup>14</sup> The image might share formal and/or aesthetic properties, content and uses with other images, or simply work with or against them.<sup>15</sup> This notion of an image-community aligns with Wellbery's explanation which affirms that systems arise by drawing their limitations and similarities in relation to other systems.

Could it be that these *systems* are merely transdisciplinary methodological schemes that '[aim] to provide a holistic and synergistic approach to studying an issue or a problem'?<sup>16</sup> Whatever the case, this epigrammatic comparison of ideas on eco-systems demonstrates that these schemes are established models of thought across various academic disciplines, for they can lead to inclusive results that assist in a comprehensive understanding of our environment. However, such concepts still remain under-practiced by those researching the image, because they often prefer using traditionalist methodological approaches that are not necessarily as eco-systematic.

### **Interdisciplinarity.**

Writing about interdisciplinarity in visual culture, Mitchell proposes that such a concept ought to include a visual culture that: (α) is attentive to the 'different disciplinary histories that have converged in it,' (β) opposes to the 'easy pluralism that would deny any general force to its central concept,' (γ) allows its terms to 'interrogate each other, to negotiate boundaries between them,' (δ) considers 'culture from the standpoint of vision' and 'vision from the standpoint of culture,' (ε) considers the 'other border of culture that is opened by the visual', that is 'the social'.<sup>17</sup> Referring to interdisciplinarity across disciplines, Steve Fuller explains that:

[the] goal of interdisciplinary collaboration today tends to be less the fundamental transformation of intellectual orientation – a realignment of disciplinary boundaries – than the fostering of good communication skills so that no vital information is lost in the pursuit of a common research project<sup>18</sup>

In similar vein, this essay understands interdisciplinarity as the voluntary collaboration of all actors taking part in a research project; actors that are working towards the same research outcomes, and aim to answer the same research questions, while they aspire to use all available resources from their own theory- and/or practice- based disciplines, in order to contribute for the greater advantage of the project.

It has to be noted, however, that in the same way the various concepts of 'systems' are under-practiced in academia, interdisciplinarity is equally under-represented in practice. Feminist sociologists affirm that researchers find it hard '[...] to develop effective methodological tools in order to marry theorizing with necessary complex analysis of empirical data.'<sup>19</sup> On a pedagogical level, Peter Weingart observes that, although the concept of interdisciplinarity has been presented since the 1960s and has been discussed extensively ever since, it has actually remained under-practiced to this day; as a 'critical, pedagogical, and institutional' concept it is the most 'underthought' of its kind.<sup>20</sup> Julie Thompson Klein also affirms that although the debates on interdisciplinarity are acquiring much more depth and breadth, the 'institutional obstacles to interdisciplinary programs' are still of a great scale.<sup>21</sup>

### **Triangulation.**

Triangulation - although originally a mathematical concept preferred by Ancient Greek astronomers since the 4<sup>th</sup> century BC. - has been widely used in the fields of social science, psychology and politics. Jacques Lacan has openly encouraged triangulation,<sup>22</sup> and after him, Alain Badiou, Felix Guattari and others have also addressed the same concept. This essay, however, is not looking at the Lacanian or post-Lacanian models of triangulation, rather is inspired by a methodological premise from within the social sciences. This essay accepts that triangulation, as a methodological concept for academic research, refers to:

the use of more than one approach to the investigation of a research question in order to enhance confidence in the ensuing findings.<sup>23</sup>

Triangulation, as a research method, emerged in the social sciences in 1966, with the proposition of the 'unobtrusive method', which suggested that: once a proposition has been confirmed by two or more independent measurement processes, the uncertainty of its interpretation is greatly reduced. The most persuasive evidence comes through a triangulation of measurement processes.<sup>24</sup>

In 1970, the concept was expanded further to include four types of triangulation: (i) data triangulation, (ii) investigator triangulation, (iii) theoretical triangulation, (iv) methodological triangulation.<sup>25</sup> Lotta Vikstrom argues that triangulation allows the researcher to examine 'data validity', while also considering and evaluating the issues associated with 'paradigmatic boundaries'.<sup>26</sup> In a similar vein, Wendy Olsen affirms that triangulation is not intended only for validation; it is also intended for providing depth and breadth of one's understanding of a subject, through the participation of one or more researcher(s), and along with pluralism, supports interdisciplinarity.<sup>27</sup>

This practical experiment uses theoretical triangulation and investigator triangulation. Theoretical triangulation in this experiment is demonstrated through the use of three theoretical frameworks: (i) ecology of images, (ii) interdisciplinarity, (iii) triangulation. Investigator triangulation in general means that there are three different researchers/investigators working on the same subject,<sup>28</sup> or the same theoretical concept.<sup>29</sup> In this case, investigator triangulation is demonstrated through the use of three investigators: (i) human/offline investigator A, (ii) human/offline investigator B,

(iii) non-human/online investigator, all three working based on one methodological schema, Manghani's ecology of images. The two human investigators are using two different images,<sup>30</sup> while the non-human investigator<sup>31</sup> is working on both images separately. Google's search engine, like any online search engine, is already programmed in applying an eco-systematic approach, due to the fact that the internet is in itself an eco-system. However, one should bear in mind 'search engine indexing' and the fact that results are not always based on popularity or relevance, because specialized tools that aim to put results on top of the generic online index can now be bought online by server providers.<sup>32</sup> For this particular experiment, triangulation in two dimensions helps counterbalance the deficiencies that might have occurred if using one theory or one investigator autonomously, and as such aspire for much more pragmatic and versatile results with an interdisciplinary position.

## **2/ The Practical Experiment: An Analysis.**

The following sections explain the practical session of the workshop 'Picturing Research/Researching Pictures'; one of the two workshops 'aimed at the development of skills in image-related research,' which inspired this collaborative *Researcher's Guide* e-book.<sup>33</sup> During this workshop, participants worked in collaboration in order to experiment and critically challenge Manghani's 'ecology of images' model, an engage in new theoretical discussions and develop new methods for image research.

### **\_Stage 1.**

At the beginning of the workshop all participants were handed A2 cards to stick our collages on, however my partner and I felt this was a rather conservative shape. Thus, we cut out two identical triangles of the original card to use as bases. We thought the triangle was a more fitting shape because it's three points notionally guide the eye to infinity, implying of the infinite possibilities of our collage. Three points are also the minimum number of points one needs to define an area, and similarly we need minimum three dimensions to define a volume.

### **\_Stage 2.**

We discussed our own individual academic backgrounds, research projects, theoretical frameworks discussed in our research projects, what images we are working with, and what ideas we are trying to hypothesize. During this discussion, we identified that our hypotheses were not too relevant. Hypothesis A discussed issues of design, class and gender politics of the late 19th c. England, while Hypothesis B discussed issues of the representation of genocide in comic books of the 21st century. The material, however, we were working with, was somehow relevant to each other.<sup>34</sup> We also discussed the parameters identified in Manghani's model, and decided that in order to be inclusive and thorough with our image research we should try to follow the given model as is, answering its parameters one by one.

### **\_Stage 3.**

Contrary to the other teams participating in this workshop, who were searching online as teams of two or three, and were discussing and agreeing on which images out of the search engine results to include or exclude, we took a much more inclusive approach. We decided to go online separately, and do our own Google research,

without influencing each other's opinion as to what to include. We felt and hoped that this way our assembly of images would prove much more idiosyncratic, and later on the combination of our results would be much more interesting (Figures I, II).

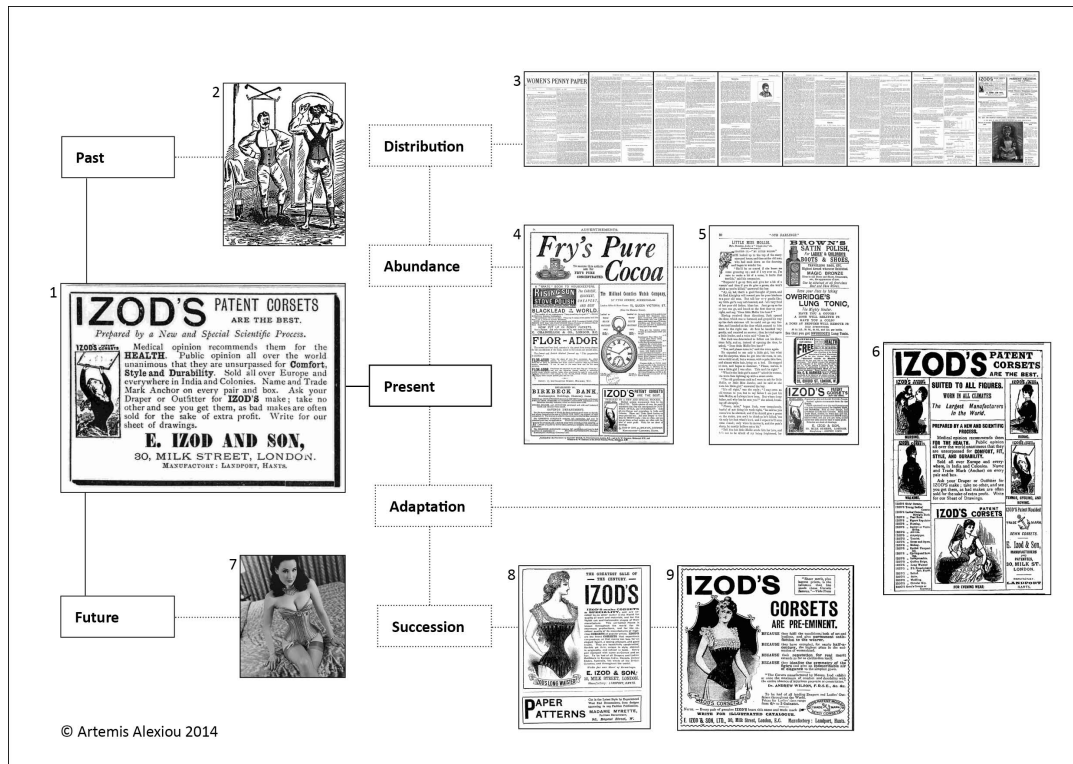


Figure I.

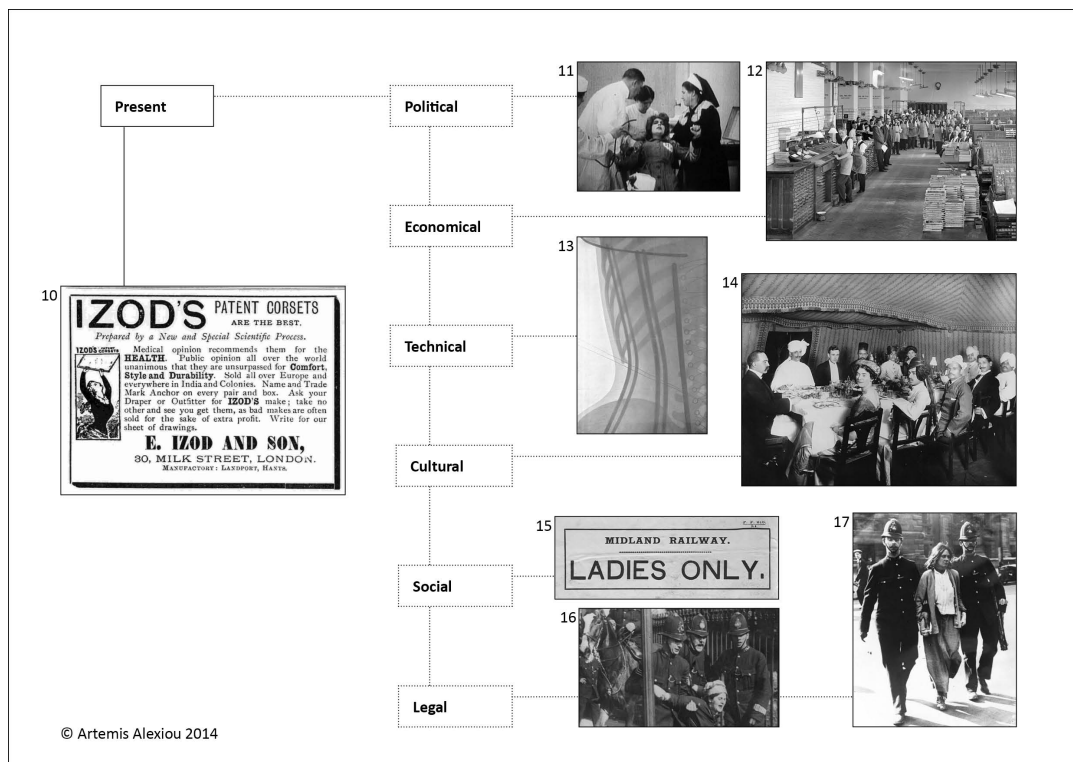


Figure II.

\_Stage 4.

Following our online search, we then came together and began to create our own collages on the triangular bases, making use of whatever was available to us: scissors, glue, pencils and markers (Figure III).

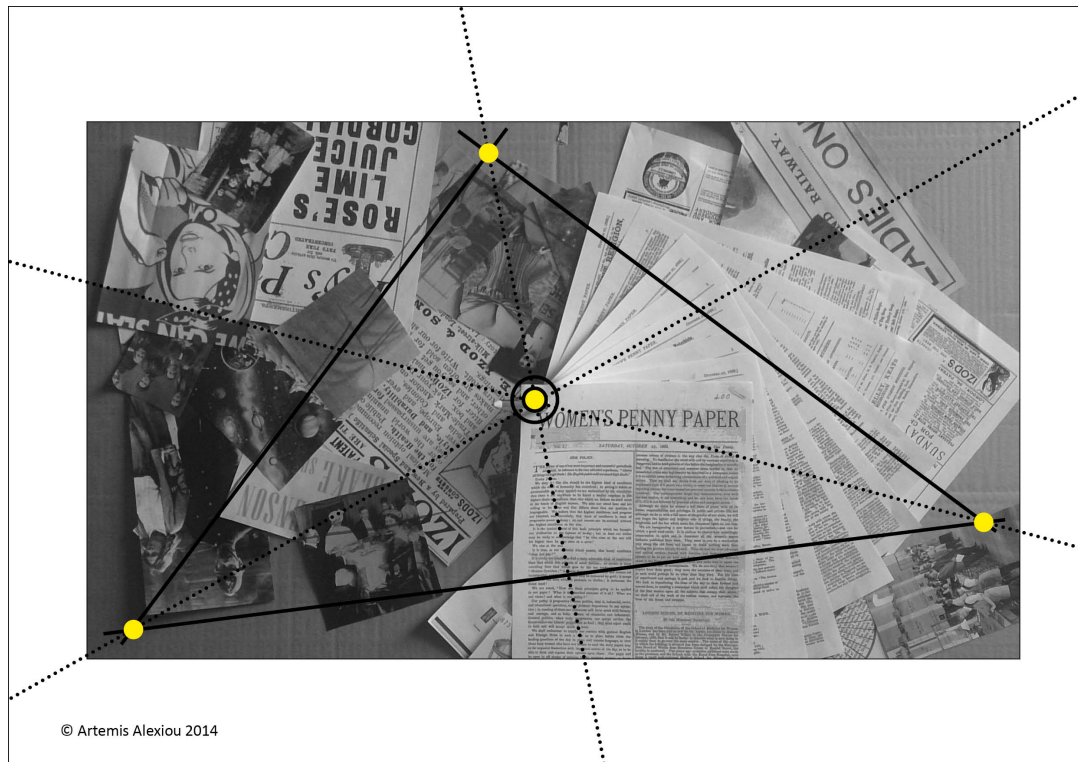


Figure III.

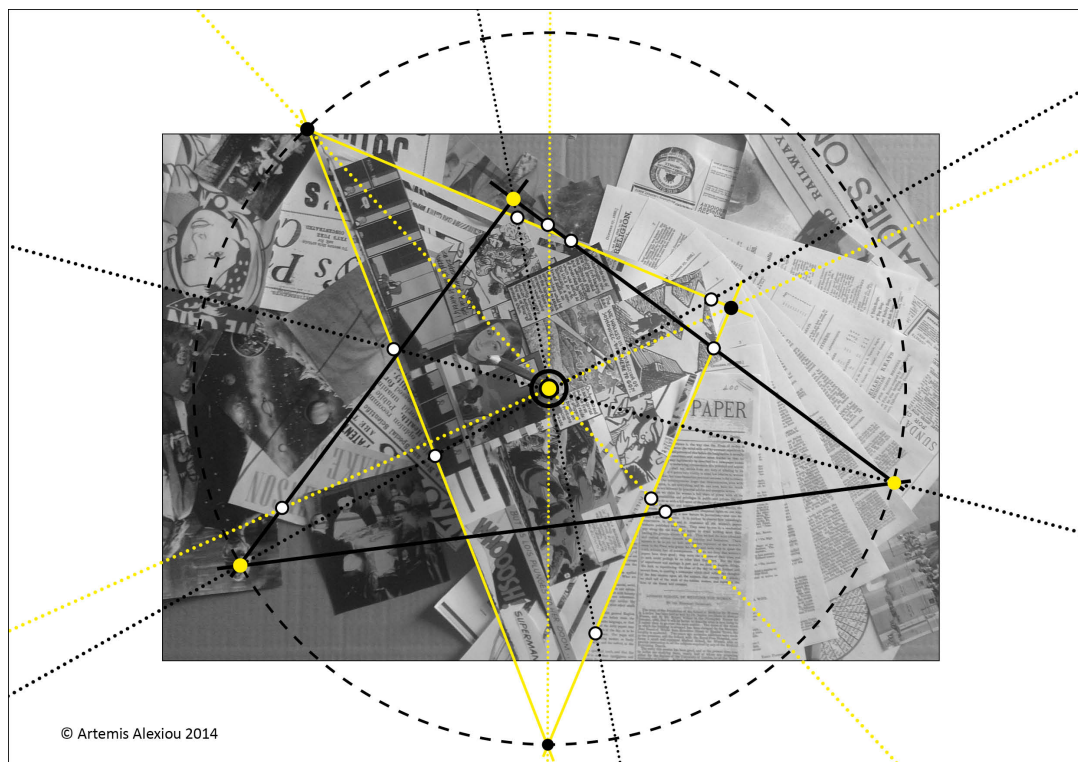


Figure IV.

With our individual collages completed, we connected the two together, so they could rotate around the same point and so the notional lines of the first collage above would

point to, and connect with, various new points of the second collage below and vice versa. This new cross-sections in a sense would create new connections of images, new eco-systems, and encourage new ideas (Figure IV).

#### **\_Stage 5.**

This stage of the experiment didn't materialize because we only had a very limited amount of time during the workshop, and our resources were limited. Ideally though, if this experiment was to be fully triangulated, we would need to use three different tools to source images.<sup>35</sup> We would also need to use three communication mediums to include in our research. For example, though we only searched for images that were related to our image, we would have looked into sourcing written manuscripts and sound recordings relevant to our image. We could then present our results as a mixed media installation, inclusive of visuals, text and sound. This last stage would also have practically shown that images are part of a wider eco-system of communication media.

This short explanation of how to apply the model of 'ecology of images' gives details for only a small fragment of the experiment, and aims to make the readers of this book understand how they could use Manghani's model for their own image research. Nevertheless, there are numerous questions that are beyond the scope of this essay, but they too need careful consideration if we are to adopt the above triangulated methodological model and use it, across the cohort of art and design disciplines, for image research. For example, we need to consider how this triangulated version of Manghani's model is better than a non-triangulated version? How might the experiment have developed if the collaborating parties/human investigators were from radically different disciplines from within art and design<sup>36</sup> or were from a practice- and theory- based backgrounds?<sup>37</sup> How might the dynamics of the team have changed if there were more than two human investigators working on this experiment? Pragmatically, however, there is not enough space in this essay to answer such questions, and so in a later essay additional explanations, along with answers on how to interpret the results that the investigator gets from the initial search demonstrated above in stage 3 or how these interpretations can be implemented in one's research project, will be included.

## Conclusion

This essay proposed a triangulated interdisciplinary ecosystematic approach to image research that encourages collaboration amongst disciplines and aspires for the cross pollination of concepts, practices and methodologies. It encourages collaboration amongst practice- and theory- based researchers, because there is an urgent need for the *demolition of all traditionalist walls of segregation* between practitioners and theorists. It allows the introduction of digital media to those who habitually use tactile media to express their concepts, and re-introduces tactile media to those who have drifted away from the material. This triangulated interdisciplinary ecosystematic approach allows 'revision: [...] the act of looking back, of seeing with fresh eyes, of entering an old text from a new critical direction,'<sup>38</sup> while it also allows the formation of transversal theories and methods. It proposes a positive, altruistic, collaborative environment for art and design research, which contradicts the current, often egotistical and unwholesomely competitive, climate that exists amongst researchers in many art and design schools. It allows the development of innovative results that offer new interpretations of the image, which in turn allow the image to claim its place within our eco-system.

## List of Figures.

### Figures I, II.

Methodological model: 'Ecology of images' (S. Manghani, 2013)

Practical experiment: 'A triangulated interdisciplinary ecosystem of images'

Stage 3 (Diagram, A. Alexiou, 2014)

1. 'Izod patent corsets advertisement.' *Women's Penny Paper* (Women's Printing Society) 1, N. 1 (1888): 8
2. 'Men's corset.' Date Unknown.  
[http://commons.wikimedia.org/wiki/File:Invicator\\_belt.gif](http://commons.wikimedia.org/wiki/File:Invicator_belt.gif)
3. *Women's Penny Paper* (Women's Printing Society) 1, N. 1 (1888): 1-8
4. "Izod patent corsets advertisement.' *The Women's Temperance Journal* (Elliot Stock and R. W. Simpson), N.62 (1889): iv
5. 'Izod patent corsets advertisement.' *Our Darlings* (Date Unknown): 30
6. 'Izod patent corsets advertisement.' *Myra's Journal* (Date Unknown), N.12 (1892): vii
7. 'Dita Von Teese in corset.' Date Unknown.  
<http://fashiondiem.blogspot.gr/2011/09/arte-dos-corsets.html>
8. 'Izod patent corsets advertisement.' *Hearth and Home* (Date Unknown), N.322 (1897): 431
9. 'Izod patent corsets advertisement.' *Hearth and Home* (Date Unknown), N.491(1900): 826
10. 'See Figure 1.'
11. 'Force-feeding a prisoner Suffragette.' Date Unknown.  
<http://brontehoraine.wordpress.com/2011/08/26/women%E2%80%99s-suffrage-the-shut-mouth-and-forced-ingestion/>
12. Harris & Ewing. 'Men Typesetters.' Washington, 1910. <http://letterology.blogspot.gr/2010/11/manly-typesetters.html>
13. 'Dr. Ludovic O'Followell. 'Le Corset.' 1908.  
<http://randommization.com/2013/06/26/x-ray-images-show-the-corsets-effect-on-skeletons-and-bodies/>
14. 'British and Indian guests of a maharajah, dining in a tent.' c. 1900-1930.  
<http://oldphotosbombay.blogspot.gr/2010/06/typical-english-bungalow-see-bombay.html>
15. 'Ladies Only.' c. 1870-1890.  
<http://turniprail.blogspot.gr/2011/04/rise-and-fall-of-ladies-only-railway.html>
16. 'A suffragette arrested.' 1914.  
<http://www.express.co.uk/news/uk/451931/1914-The-new-year-when-no-one-mentioned-the-war>
17. 'A suffragette arrested.' 1914.  
[http://en.wikipedia.org/wiki/Women's\\_suffrage\\_in\\_the\\_United\\_Kingdom#mediaviewer/File:Suffragette\\_arrest,\\_London,\\_1914.jpg](http://en.wikipedia.org/wiki/Women's_suffrage_in_the_United_Kingdom#mediaviewer/File:Suffragette_arrest,_London,_1914.jpg)

### Figure III.

Methodological model: 'Ecology of images' (S. Manghani, 2013)

Practical experiment: 'A triangulated interdisciplinary ecosystem of images'

Stage 4 (Collage, A. Alexiou, 2014 / Diagram, A. Alexiou, 2014)

## Figure IV.

Methodological model: 'Ecology of images' (S. Manghani, 2013)

Practical experiment: 'A triangulated interdisciplinary ecosystem of images'

Stage 4 (Collage, A. Alexiou and L. in 't Veld, 2014 / Diagram, A. Alexiou, 2014)

---

<sup>1</sup> Van Der Tuin, Iris, and Rick Dolphijn. 'The Transversality of New Materialism.' *Women: A Cultural Review*, 2010, pp.153-171

<sup>2</sup> Peirce, Charles Sanders. *Philosophical Writings of Peirce*. New York: Dover University Press, 1955.

<sup>3</sup> Manghani, Sunil. *Image Studies*. Abington, Oxon: Routledge, 2013, p. 35

<sup>4</sup> Fuller, Steve. 'Interdisciplinarity. The Loss of the Heroic Vision in the Marketplace of Ideas.' *Interdisciplines*. 2003.

[http://www.interdisciplines.org/medias/confs/archives/archive\\_3.pdf](http://www.interdisciplines.org/medias/confs/archives/archive_3.pdf) (accessed 2014).

<sup>5</sup> Webb, E. J., R. D. Campbell, and L. Sechrest. *Unobtrusive Measures: Nonreactive Measures in the Social Sciences*. Chicago: Rand McNally, 1966

<sup>6</sup> Sontag, Susan. *On Photography*. New York: Dicador USA (1979) In Manghani, 2013, *Op. Cit.*

<sup>7</sup> Manghani, 2013, *Op. Cit.* p. 34

<sup>8</sup> Manghani, 2013, *Op. Cit.* p. 32

<sup>9</sup> Mitchell and Hansen 2010, xv

<sup>10</sup> Manghani, 2013, p. 36

<sup>11</sup> Mitchell, W. J.T., and Mark B.N. Hansen. *Critical Terms for Media Studies*. Chicago and London: The University of Chicago Press, 2010, xv

<sup>12</sup> See *Footnote 3*.

<sup>13</sup> Wellbery 2010, 297-298 In Mitchell and Hansen 2010

<sup>14</sup> Manghani, 2013, *Op. Cit.* p. 35

<sup>15</sup> Manghani, 2013, *Op. Cit.* p. 35

<sup>16</sup> Leavy, Patricia. *Essentials of Transdisciplinary Research: Using Problem-Centered Methodologies*. Walnut Creek: Left Coast Press, 2011, p. 29

<sup>17</sup> Mitchell, W. J.T. 'Interdisciplinarity and Visual Culture.' *Art Bulletin*, December 1993, pp. 543-544

<sup>18</sup> Fuller, Steve, 2003, *Op. Cit.*

<sup>19</sup> Denis, A. 'Intersectional Analysis: a contribution of Feminism to Sociology.' *International Sociology*, 2008, pp. 688

<sup>20</sup> Weingart, P. 'Interdisziplinarität - der paradoxe Diskurs.' *Ethik und Sozialwissenschaften* (1997: 521-529) In Hart, Sabine. 'Magical Sign. On the Politics of Inter- and Transdisciplinarity.' *Graduate Journal of Social Science*, 2007, p.14

<sup>21</sup> Thompson, Klein. *Interdisciplinarity. History, Theory, and Practice*. Detroit: Wayne State UP (1990) In Hart, Sabine. 'Magical Sign. On the Politics of Inter- and Transdisciplinarity.' *Graduate Journal of Social Science*, 2007, p.14

<sup>22</sup> For example, Lacan has proposed to process in triangulation the concepts of 'inhibitions', 'symptoms' and 'anxiety' (Harari, Roberto. *Lacan's Four Fundamental*

---

*Concepts of Psychoanalysis: An Introduction*. Translation: Judith Linc. New York: Other Press LLC., 2004, p.58).

<sup>23</sup> Webb, E. J., R. D. Campbell, and L. Sechrest. *Unobtrusive Measures: Nonreactive Measures in the Social Sciences*. Chicago: Rand McNally, 1966

<sup>24</sup> Harari, Roberto, 2004, *Op. Cit.* p.58

<sup>25</sup> Denzin 1970

<sup>26</sup> Vikstrom, Lotta. 'Identifying dissonant and complementary data on women through the triangulation of historical resources.' *International Journal of Social Research Methodology* (2010: 211-221) In Hughes, Christina and Rachel L. Cohen. 'Feminists Really Do Count: The Complexity of Feminist Methodologies.' *International Journal of Social Research Methodology*, 2010, p. 192

<sup>27</sup> Olsen, Wendy. 'Triangulation in Social Research: Qualitative and Quantitative Methods Can Really Be Mixed.' In *Developments in Sociology*. Ormskirk: Causeway Press, 2004

<sup>28</sup> I.e. image

<sup>29</sup> In this case the theoretical model applied by both investigators is Manghani's 'ecosystem of images'.

<sup>30</sup> I.e. Image A: Izod corset ad, Image B: section of a genocide comic strip

<sup>31</sup> Google's search engine

<sup>32</sup> I.e. 'Search Engine Jumpstart' feature provided by *Hostmonster*

<sup>33</sup> Postgraduate Research. Postgraduate Research, Winchester School of Art. 2014. <http://blog.soton.ac.uk/wsapgr/workshop-1/> (πρόσβαση 2014).

<sup>34</sup> For example, 19th century ads and comic strips are 'images' printed on paper, they are both usually a combination of text and visuals, and they both tell a story.

<sup>35</sup> I.e. Google search engine material, library catalogues of secondary materials, archival catalogues of original materials

<sup>36</sup> I.e. 19th century periodicals & 21st c. video game design

<sup>37</sup> I.e. design historian and artist

<sup>38</sup> Shoshana, Felman. *What does a woman want?* Baltimore: The John Hopkins University Press (1993) In Pollock, Griselda. *Differencing the Canon: Feminist Desire and the Writing of Art's Histories*. New York: Routledge, 1999, p.156

This article is part of *Looking at Images: A Researcher's Guide*:

<http://blog.soton.ac.uk/wsapgr/looking-at-images/>