

# Examining web images: A Combined Visual Analysis (CVA) approach

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## Abstract

In this methodological paper I set out a framework for Combined Visual Analysis (CVA), bringing together compositional, reflexive and semiotic analysis. I explain how CVA was applied in a research project exploring the visual repertoire of Human Resource Management (HRM). I describe each stage in detail, consider how research practice is instrumental in shaping research outcomes and reflexively explore the challenges encountered. The CVA framework provides a research protocol for those working with (in visual analytic terms) large numbers of pre-existing images. It offers an approach that enables breadth and depth, while maintaining a qualitative focus on the images themselves.

**Key words:** visual analysis, web images, qualitative research, Human Resource Management (HRM)

## Introduction

Management researchers are increasingly attending to visual analysis. There are excellent resources available for visual researchers (Bell et al., 2014; Emmison et al., 2012; Margolis and Pauwels, 2011) while special issues (Acevedo and Warren, 2012; Davison et al., 2012) facilitate debate. Nevertheless, as Shortt and Warren (2019:539) highlight, robust 'analytical protocols' are lacking. Such protocols facilitate the sharing of research experience, support researchers in enhancing practice and prompt methodological development. However, space restrictions in typical empirical publications mean that methodological accounts are often too brief to serve as a guide. Outlets such as EMR's 'Methodology Matters' provide a much needed opportunity for publishing detailed methodological frameworks.

In setting out the Combined Visual Analysis (CVA) framework I draw on compositional, reflexive and semiotic analysis. Compositional analytic approaches facilitate an unpacking of image content while semiotic approaches relate image content to meaning (Rose, 2012). These are brought together in three stages (compositional categorisation, compositional themes and semiotic analysis) and collectively inform the steps within each stage (readiness, recognition, refinement, reflection). CVA developed from my need for a qualitative method suited for large numbers of pre-existing (Meyer et al., 2013) web images in a project exploring HRM. Specifically, this attends to what Rose (2012) refers to as the 'site of the image' and is informed by Van Leeuwen's (2005) notion of cataloguing. Together these highlight the importance of examining breadth of visual repertoire while also unpacking depth in terms of the relation of image to concept construction. This requires an approach that enables both analytic breadth and depth, while maintaining a qualitative focus on the image.

Below I explain how, in meeting these research needs, CVA contributes to the development of visual research since it both:

- Facilitates research examining pre-existing web images,
- Prioritises a qualitative focus on images using a structured approach that enables analytic breadth and depth.

*Facilitates research examining pre-existing web images:* Following Meyer et al. (2013), it is usual to distinguish between pre-existing images found by the researcher and image creation within a participatory research process (Shortt and Warren, 2012). Meyer et al. (2013) label the former archaeological, describing a focus on “pre-existing” visual artifacts and data that the researcher can collect and interpret in order to reconstruct underlying meaning structures’ (p.504). Recently researchers have embraced the potential of participatory visual research, particularly when combined with other qualitative methods (Shortt and Warren, 2019). Methodological development here has outpaced that concerned with pre-existing images (Shortt and Warren 2019; Drew and Guillemin, 2014). However, there is a strong practice of management research analysing pre-existing images, with images in corporate reports receiving particular attention (Davison, 2010). Yet there is further recognition that, as Bell et al. (2014: 2) observed, ‘the visual enters into almost every aspect of organisational strategy, operations, and communication, reconfiguring basic notions of management practice’. Relatedly, researchers are recognising that the internet offers an important context for visual research, providing opportunities to explore how images are used and associated with concepts across organisational boundaries and levels of analysis (Höllerer et al., 2013).

Despite extensive exploration in areas such as media studies, management research using web images remains sparse. Unsurprisingly, there is correspondingly less methodological discussion of web image analysis (Bell and Davison, 2013; Emmison et al., 2012).

Critically there is now recognition that, across various internet media, a visual repertoire develops alongside a lexical vocabulary (Elliott and Robinson, 2014; Pearce et al., 2018). In particular, Machin (2004) explained how pre-existing images available via the internet, especially from image banks, can be considered as an 'ideologically prestructured world' (p.334) that shapes and constrains understandings. My research also draws on Van Leeuwen's (2005) notion of cataloguing as a semiotic means of examining the visual repertoire and unpacking the relation of image to concept construction. This is critical because such images do not represent reality; they are not 'windows' (Meyer et al., 2013: 494) through which we can see that which already exists. Rather images are implicated within processes of social construction both through what is displayed and that which remains out of sight. A focus on web images is particularly significant since, as others have also observed (Margolis and Pauwels, 2011; Elliott and Robinson, 2014), management studies of the web have largely focused on textual rather than visual aspects. Given the ever increasing visualization of web media, textual approaches inevitably risk discarding or ignoring fundamental aspects of internet use (Kiesler, 2014). Bell and Taylor's (2016) analysis of mourning in the wake of Steve Job's death is a pertinent example of multimodal research which addresses this need but, as with other examples, the constraints of an empirical paper mean that there is limited methodological explication. Therefore, in a useful contrast to Shortt and Warren's (2019) work on Grounded Visual Pattern Analysis for participatory visual research, the aim of this

paper is to offer guidance for research examining pre-existing images, particularly those directly available via the web.

*Prioritises a qualitative focus on images using a structured approach that enables analytic breadth and depth.* When considering pre-existing images the researcher must first define the field from which such images will be drawn. As outlined above, a common approach has been to focus on corporate reporting, which also acted to narrow the empirical scope enabling in-depth analysis. Indeed Meyer et al. (2013) suggest that archaeological approaches focus on 'rather small amounts of data due to the strongly qualitative nature of most research' (p.507). In moving to examine web images there are both opportunities and risks. The researcher must negotiate tensions between advantages (range, accessibility and quantity) and disadvantages (overload) as highlighted by Emmison et al. (2012). In reviewing methodological accounts, I found that studies utilising larger datasets tended to enrol quantitative aspects of content (Delmestri et al., 2015) or network (Höllerer et al., 2013) analysis to narrow the focus before engaging with qualitative analysis. Moreover, to cope with quantity of data, lexical rather than visual coding is often adopted (Duffy and Hund, 2015; Höllerer et al., 2013). That is to say that when the number of images increases, analysis often quickly moves to focus on labels or codes rather than the images themselves remaining centre stage. In line with what Meyer et al (2013) refer to as a 'strongly qualitative' orientation, my aim was to retain a visual qualitative focus on the images themselves by adapting practices grounded in photo-montage (Smith, 2014; Shortt and Warren, 2019).

Many key influencers of visual research (Rose, 2012; Van Leeuwen, 2005) have long supported research that engages with multiple analytic viewpoints. In particular, Rose (2012) suggests

bringing together approaches to consider visual effect, composition and meaning. However, as already highlighted, details of how researchers actually combine methods is often highly summarised. Therefore this paper explicates a detailed framework for Combined Visual Analysis (CVA), summarised below.

**Table 1: CVA Stages and Steps**

<p>Compositional category</p> <p><b>What are these images of?</b></p>	<p><i>Readiness:</i> Reflective preparation from the process of gathering images</p> <p><i>Recognition:</i> Physical sorting to enable image familiarisation and category development</p> <p><i>Refinement:</i> Category refinement and sub-category identification</p> <p><i>Reflection:</i> Re-viewing the process of compositional categorisation</p>
<p>Compositional theme</p> <p><b>How are these images constructed?</b></p>	<p><i>Readiness:</i> Moving from categories to cross-cutting themes</p> <p><i>Recognition:</i> Re-viewing the montages to identify key themes</p> <p><i>Refinement:</i> Zooming in and out to make sense of key themes</p> <p><i>Reflection:</i> Moving from composition to meaning</p>
<p>Semiotic analysis</p> <p><b>What might these images mean?</b></p>	<p><i>Readiness:</i> Preparing to question what lies beneath these images</p> <p><i>Recognition:</i> Questioning the images to uncover potential meanings</p> <p><i>Refinement:</i> Using the images to further interrogate meaning</p> <p><i>Reflection:</i> Review of strengths and weaknesses across the analytic process</p>

Before detailing these stages, I first explain the background to my research project.

### Investigating web images of HRM

HRM involves activities that activate, support and terminate employment relationships between individuals and organisations (Jackson et al., 2014). While precise definitions are contentious, HRM continues to be regarded as essential for organisational success across a range of criteria and levels of analysis. Within this context, understanding the way in which we 'see' HRM is of increasing importance and recognised in calls for methodological innovation in the field (Jackson et al., 2014). Relatedly, research from a critical management perspective has unpacked, exposed even, a managerialist agenda driving contemporary HRM and highlighted power inequalities (Peltonen and Vaara, 2012). Research has examined HRM's sustainability, ethics, critically reviewed HRM practices and the technologies involved (Francis et al., 2014; O'Brien and Linehan, 2018). However, text and talk have remained the focus. Therefore it is pertinent to ask how HRM can be seen via the images used in its representation and what this means for the re-representation of people at work.

While this is a methodological paper, to illustrate the process I outline an investigation of images of HRM below. Critical studies have been particularly influential in examining the power relations embedded in the employment relationship. This suggests HRM is characterised by 'depersonalization and dehumanization [which] are fundamentally embedded in the nature of the capitalist employment relationship' (De Gama, et al., 2012: 97). HRM practices position the worker as an autonomous, neoliberal subject, responsible for their own employment destiny and self-reliant in relation to neutrally-positioned HRM practices (Greenwood and Van Buren, 2017). This highlights concerns around use of the term 'human' and its combination with 'resource management'. In sum, there is much criticism of

the way in which HRM re-presents what it means to be a subject that is engaged, motivated, developed, appraised and retired (Johnsen and Gudmand-Hoyer, 2010).

My prompt for this methodological foray was the opportunity to examine such debates from a visual perspective and unpack representations of HRM. I set out to explore how the 'human' of HRM might be represented but also how this might be embedded (or embodied) in visualising other aspects of HRM and indeed work itself. Images of HRM are significant since meanings of and knowledge are 'created, transformed, transferred, and put into practice' (Meyer et al., 2013: 493) via their use. Images are integral to HRM practice as visual elements are used by organisations to represent people, products and principles in communicating with stakeholders via multiple channels. Via examining pre-existing web images, my research aimed to generate insights into the processes of constructing people as the critical subjects of HRM and their place in the visual repertoire of work. As there is not yet an established body of visual research which has investigated HRM, I adopted an exploratory approach in order to open up the topic for debate and further enquiry. My research question was simple: What does HRM look like?

In the sections that follow I unpack the different stages and steps of the research process, but here provide an overview of the insights generated. Through this process I was able to consider how HRM is portrayed, including via the use of graphical representations, and review how visual compositions simplify workers, relationships and the nature of work itself. Visually, one individual is interchangeable for another (De Gama, et al., 2012), the worker appears featureless and becomes an absent-presence. The 'human' of HRM is present in form but

absent in any meaningful way. This could be essential to positioning HR practice as neutral and objective, since without distinguishing features such practice can be said to be equally relevant to all (Greenwood and Van Buren, 2017). One potential way of achieving more presence involves a move to realistic photographic representation but this is only partially achieved. Indeed, similar to Swan's (2010) observation, any meaningful diversity seems absorbed within a common business uniform and a smiling face. My analysis further highlights how positivity at work is reconstructed within these images' emotional tone and reinforced through the visual presentation of a fit and healthy body (Lindstrom, 2016). These images thus contribute to the normalisation of positive experience and, in their absence, the othering of alternative experiences. HRM is positioned as achieving positive work outcomes but, reflecting the black box argument, how these are achieved is left unclear (Jackson et al., 2014). Unpacking these images allows a richer analysis of the ways in which HRM might be both depersonalised and dehumanised (De Gama, et al., 2012) but is able to invoke the personal and the human as a means of representation. The human becomes a complex absent-presence within and across these images, while resource management is reinforced via the various relationships between the body and other representative symbols. Having given an overview of this research project, I next set out the methodological gap in more detail and so frame the contribution of CVA.

### **Examining pre-existing images: Exploring the methodological gap**

As previously highlighted, there is a significant body of research that has examined pre-existing images. Examples include the use of imagery in annual reporting (Davison, 2010), campaigning (Bell and Leonard, 2018), corporate social responsibility (Höllerer et al., 2013,

Breitbarth et al., 2010), diversity (Swan, 2010), and entrepreneurship (Smith, 2014; Swan, 2017). Rather than offering a broad review here I focus on research that particularly informed my thinking about CVA.

I begin with Swan's (2010) research on diversity as it offers a rich and detailed perspective. This involved examining a particular form (the diversity mosaic) and in-depth analysis of a single image (a jigsaw of smiling faces) to unpack representations of sameness and difference. Swan describes a process of 'systematic but not rigid or linear' (p.88) compositional analysis involving 'to- and fro-ing between looking and thinking' (p.88). This highlights an analytic focus on 'looking' at the image and keeping the visual centre stage. Swan's (2010) research particularly prompted my thinking about combining compositional and reflexive aspects within CVA. In contrast, Breitbarth et al. (2010) offer an account of analysing 571 images from 16 corporate sustainability reports. Quantitative content analysis was used to develop an overall typology which categorised reports by dominant image type. A semiotic approach was then used to unpack case examples in each category. This offers an interesting methodological process which reduces the scale of the final qualitative task. However, the initial quantitative analysis adopts an early lexical translation (here via content analysis) rather than retaining a qualitative focus on the images themselves. Therefore while the overall progression informed my ideas of moving from a compositional to semiotic analysis within CVA, I rejected the quantitative steps. It should be noted that a similar mixed approach is frequently used across visual studies (Pearce et al., 2018). Looking more specifically at studies of web images, I reviewed examples of thematic analysis (Duffy and Hund, 2015), content analysis with an emphasis on visual clustering (Delmestri et al., 2015) and montage (Smith,

2014). Each provided an overview of sorting images by themes, clustering or montage. However in contrast to Breitbarth et al.'s (2010) quantitative approach, all offered insights into qualitative approaches to categorisation. In particular, Smith (2014) describes a visual storyboarding process of 100 images, however the methodological description is brief and it would be difficult to replicate. The stage-by-stage and step-by-step description of CVA that follows provides a detailed process which others can adapt and apply to their own research projects.

### **CVA Development: Research journey and organising data**

Having shaped my research question and explored methodological examples, I set out an initial approach to CVA. I began with a Google image search as a form of empirical toe-dipping. At that time Google search processes utilised the surrounding text and labels to relate an image to the search term. Thus while an image may not be uniquely associated with a particular term, identification can be seen as indicative of image use in that context on the internet. The phrase 'human resource management' was the primary search term. While this section is not analytic in nature, its inclusion reflects that the process of organising data is a critical aspect of the research journey. I have avoided the term 'data collection' preferring 'data organisation' as this recognises that data 'becomes' through these actions. Indeed, the term 'collection' better fits the resulting dataset since this is curated through the researcher's actions and decisions.

Above I indicated I used Google image search, however this choice represents a significant methodological decision since platform use shapes the dataset. For example, discussions of

search terms might translate to identifying hashtags across various social media. Here I am not digging beneath platform algorithms but, as explored in depth by Pearce et al. (2018), note that researchers need to be aware of the implications of, and reflect fully on, platform choice. However, without significant funding and skilled resource unpacking the implications of platformisation is highly problematic. It is more important for qualitative researchers to acknowledge and reflect on such issues rather than seek an elusive measure of neutrality (Marres, 2017). In this section I offer my reflection using key decision boxes as commentary alongside a description of process.

#### Key Decision #1: How to search?

My answer: Use Google Image search as this is the most widely-used search engine and offers most similarity with a lay search process. Introduce a one-off variation as a sense check, use an alternate platform (Bing image search) for one round and test on a different computer (in a different location) for another.

In this project I relied on Google image search, with a sense check variation. Further steps to isolate the search process might have included setting up separate accounts on different platforms and ensuring all search preferences, cookies etc. were cleared prior to each search conducted. In reality, the variety I introduced had little impact as there was significant repetition across searches. If this had been a larger research undertaking, testing with different tools would have enabled an assessment of this variation more thoroughly.

My research was exploratory and I was interested in working through a methodological process. However a more focused research project may require a more targeted data

protocol. This might include options to look at image use in specific contexts, or targeting certain social media or other web image repository. In my searches a wide range of images were returned. However, there were a large number from image banks, which as highlighted earlier, are seen to have a particular effect on shaping understandings (Machin, 2004). Research ethics and related copyright issues are also significant here. Elsewhere (Whiting and Pritchard, 2017) I have written more extensively on the ethical issues associated with assumptions about public and private sharing of information (including images) on the internet. Ethical guidelines, accepted practice and the legal frameworks are continually evolving and it is essential to review these in detail at the start of a research project. One advantage of using Google search is the focus on public rather than private areas of the internet. Of course, as will become clear, many of the images I collected did not include pictures of 'real' people. However, within this paper I have also used examples from stock images which are widely visible online, which along with the extract approach explained below addresses ethical concerns regarding making private images public. UK copyright law is a complex area and has evolved rapidly in recent times to deal with the availability of online material. Boje and Smith (2010) suggest that researchers find themselves in a 'no man's land' (p.315) regarding the use of images in research. A further issue is that the origin and copyright details of many images displayed on the web are not clearly identifiable, therefore attribution is often difficult. My interpretation applied here is that for research, fair dealing allows for the partial reproduction of images (similar to using a quotation) and therefore I have provided extracts which convey something of the visualisation while, I believe, remaining within copyright regulation. Where information was available, I have included image acknowledgement with the relevant table or figure. It is strongly advised to review the legislation relevant to your own research as early as possible during your investigation (for the

UK <https://www.gov.uk/topic/intellectual-property/copyright> provides up-to-date information).

My data organisation took place over eight weeks in 2016 during which four separate searches were undertaken. I use the term 'primary results' to refer to the way in which Google image search results were presented at the time, although this has subsequently changed. At that time, an initial set of images, the primary results, were returned (usually across a number of pages). While there was an option to generate further images from the original search term and display secondary results; this was not pursued. Repeating the search today produces an ongoing stream of scrollable results and with access to a larger number of filter options. All platforms continually develop the ways in which we access, search and recognise data. Consequently flexible approaches to data organisation are required to ensure researchers reflect on the protocols in operation at the time. In my research, the first search provided 396 images via primary results. These images were downloaded via a screen capture tool, similar to the Windows 'snipping tool'. Again, a wide range of tools to facilitate image download are available, some are integrated within individual platforms while others are embedded in tools designed to support research (Pearce et al., 2018). Further decisions arise regarding search results, including whether to include 'related' or 'further' images which may vary only slightly from the result listed under the primary search.

Key Decision #2: How to process the search results?

My answer: Collect primary search results only as snowballing is endless and potentially moves away from the original search term outcomes. Collecting 'everything' is impossible

and in an exploratory study the primary research results provide sufficient range for data analysis.

As I collected each image, I also noted the source. After the first search, a set of usage codes was applied during data organisation however further context detail was not recorded due to the exploratory nature of this research.

**Key Decision #3: What contextual data about image use do I collect?**

My answer: Visit site (click from search results); copy link and take a note of overall purpose, using a list of codes after the initial search.

It is important to collect any contextual information at the time of the search. Firstly, recreating search processes is problematic due to the complex algorithms involved. Secondly, the internet is dynamic, images appear and disappear as do the underlying the web sources. Informed by Van Leeuwen's (2005) notion of cataloguing, and Shortt and Warren's (2019) discussion of field-level analysis, my aim was to relate image use to the overall context of the web rather than investigating particular and specific uses. The images I collected came from a range of sources including information/knowledge websites, blogs, academic or education related, news, HR services and consultancy, software providers, professional associations, and recruitment agencies. These images were in use by those within the HR profession and presenting HRM as a knowledge base, activity or service. As expanded below, various types of image were collected, including stock, creative commons licenced images and those commissioned for a particular use.

During each search, I recorded my initial responses to the images and to the process itself. These informed the early stages of the categorisation described below as I had already started to identify different styles and visual features. More importantly, this process shaped the way in which I incorporated a reflexive visual analysis within each stage via the repeated steps of *Readiness, Recognition, Refinement and Reflection*. This acknowledges that such research can itself be viewed as a reflexive, creative process (Rhodes, 2009).

During each of the subsequent three searches I aimed to download only new images, although a subsequent process eliminating duplicates was also required. However, this meant discounting opportunities to further explore context of use, which while not significant in relation to my research question would need to be considered in other research projects. During the fourth search, few new images appeared in the primary results and for this exploratory research the dataset was therefore considered sufficient. After a further duplicate elimination process, I had a set of 284 images. It is difficult to provide specific criteria on when to stop downloading images, rather this requires careful consideration in light of the research question posed. Practical issues will no doubt play a part for many research projects which are usually both time and resource constrained. Having outlined how I organised my data I now walkthrough each of the three stages of CVA in turn, starting with compositional category analysis below.

### **CVA Stage 1: Compositional Category Analysis**

**Table 2: CVA Stage 1**

<p>Compositional category</p> <p><b>What are these images of?</b></p>	<p><i>Readiness:</i> Reflective preparation from the process of gathering images</p> <p><i>Recognition:</i> Physical sorting to enable image familiarisation and category development</p> <p><i>Refinement:</i> Category refinement and sub category identification</p> <p><i>Reflection:</i> Re-viewing of the process of compositional categorisation.</p>
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*Readiness:* As this is the first stage of CVA, the readiness activity includes the transitional steps from data organisation to analysis. This included colour printing and labelling all images alongside organising my notes from the search and download process. Readiness also involves a process of reflecting forward, thinking about the way in which the subsequent steps might be performed.

*Recognition:* During this step images are confirmed and an initial sort is completed. This included the following activities:

- Confirming the final dataset.
- Developing initial image categorisations.
- Confirming the assignment of each image to a category.

To confirm the final dataset an initial visual sort grouped images by their dominant visual features using montage-like techniques (Smith, 2014; Shortt and Warren, 2019). This involved dealing the images like cards into different groups. Based on notes made during data organisation, the first pass was a simple division between word-based and figure/object based images. There were 50 word-based images which included word-clouds, checklists, and box-

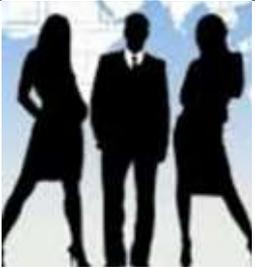
arrow diagrams. After careful consideration of my research question, these were removed from the dataset for this project. A second physical sort through the remaining 234 images then assigned each to an individual category, again using my notes as a starting point. The key guide was overall visual similarity, resulting in an initial categorisation with each image allocated to one high level category. This is similar to Rose's (2012) suggestion that a concern with visual effect is often the first stage of image analysis.

Managing space for physical sorting became problematic so I replicated the physical categories by organising these across different PowerPoint slides. As with the previous discussion of platforms, a variety of analytic tools could have been used, however PowerPoint provided a straightforward translation from the physical spread of images on the floor to a similar representation on a screen. Shortt and Warren (2019) provide a similar rationale for rejecting the use of analytic software packages as these risk reducing images to a number of composite codes.

After the initial organisation on PowerPoint, I worked through the categories again as a sense check. For example, an initial category of 'technology and objects' disappeared through an iterative process of comparing and contrasting. Some images were easier to categorise than others, so each category contained a core group and a less certain peripheral group. Inevitably I spent more time on the peripheral groups, moving them around until I felt comfortable with the 'home' in which they were placed. Here I relied on a visual judgement of similarity and difference so it was particularly important to reflect on the decisions made and how this process was in effect building a visual map of HRM. Reflective notes were made throughout this process, which I carried out over a period of several days. Once the sort became settled,

I printed each group in colour on A3 paper. A summary of this first categorisation is presented below (Table 3).

**Table 3: Image Categories**

Category Summary	Description	Example
Stick & pin figures (54 images)	Graphic representations using a basic body shape and solid block colour.  No image credit (example: <a href="http://www.tagish.co.uk/managingcases/hrmanagement/">http://www.tagish.co.uk/managingcases/hrmanagement/</a> )	 An illustration showing several stylized human figures in various colors (black, red, yellow, purple, orange, green, blue) standing on a background of interlocking puzzle pieces.
Real People (118 images)	Photographs of people in various scenarios, some incorporating graphic or photographic representations of work.  No image credit provided (example: <a href="http://www.ulmc.com.my/it-solution/human-resource-system/">http://www.ulmc.com.my/it-solution/human-resource-system/</a> )	 A close-up photograph of two people in business attire shaking hands, symbolizing a deal or agreement.
Silhouettes (33 images)	Graphic representations of figures (and sometimes accompanying objects) in silhouette.  No image credit provided (example: <a href="http://conceptone.net/">http://conceptone.net/</a> )	 A graphic illustration showing the black silhouettes of three business professionals (two women and one man) standing against a light blue background with a faint world map.

<p>Manipulation (29 images)</p>	<p>Large (photographic but usually headless) body whose hand reached out to manipulate stick/pin or silhouette figures.</p> <p>Image credit: Wix.com</p>	
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*Refinement:* During this step the category montages were refined and sub-categories identified. Many qualitative research approaches involve iteration whereby the researcher repeatedly interrogates and questions these data. In this vein the initial recognition step (above) was followed by an iterative process of refinement during which I tried to make sense of the more detailed compositions within each category. This process developed the overall sense of visual effect and involved more attention to Rose’s (2012) key areas of compositional analysis (feature, colour, spatial organisation, light and mood). I then produced more detailed montages in PowerPoint, grouping the images into different sub-categories. I continued to seek a single ‘home’ for each image but did not limit the number of sub-categories or worry unduly about the number of images in each. An example of the outcome of this refinement step for the category ‘Real People’ is provided in Table 4.

**Table 4: Real People**

Main Feature and subdivisions	Objects	Example
<p>Hands (14): In middle (7); Circle (2); Shakes (4); Working (1)</p>	<p>Tables, documents.</p>	
<p>Groups meeting/collaborating (18)</p>	<p>Table, computer, chairs, pens, Documents.</p>	

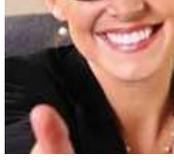
Groups, one individual highlighted (10): Male (3); Female (7)	None.	
Groups no/unclear interaction, unclear differentiation (5)	None.	
Interview scenario (5)	Table, computer, chairs, pens, documents.	
Large groups/crowds (11): Global map (2); Signs/formation (4); Crowd (5)	Briefcase, props (signs, map), buildings	
Odd groups (5)	Chairs, door.	
Person and jigsaw (3)	Jigsaw.	
Head shot (2)	Documents.	

Image credits for Table 4 from top to bottom: No image credit, example: <http://www.ulmc.com.my/it-solution/human-resource-system/>; No image credit, example: <http://tallexspartners.com/workforce-management-products/leadership-consulting/>; No image credit, example: <https://www.worktime.com>; No image credit, example: <https://hrmanwmo.shrm.org/>; Image credit: shutterstock; Image credit: Getty images; No image credit, example: <http://www.elfco.com>; No image credit, example: <https://www.humanresourcesmba.net/about/>.

As an example of my notetaking during this stage, in interrogating this category I noted the limits of realism:

*“There remains a sense of the artificial in the monotone work settings and dominance of smiling faces. A particular type of ‘real’ person dominates. They are formally attired white collar workers (wearing a dark trouser or skirt suit). Images portray a predominately white, able-bodied and young demographic. These employees seem healthy, fit and happy.*

Similar notes and review of the categories and sub-categories were produced alongside more specific compositional notes.

*Reflection:* At the end of this first stage of CVA I reviewed both the process and outcomes of categorisation. I extended the notes I had made alongside viewing the montages. The extended notes focused on how I was viewing the images, reflecting that the researcher becomes the audience (Rose, 2012) during this process. A further key aspect of this reflection was considering how to proceed with the next stage of the analytic process. Here, I had allocated each image to one category to allow a focus on the dominant features. CVA Stage 2 allows a more flexible interrogation of themes across these categories.

**CVA Stage 2: Compositional Theme Analysis**

**Table 5: CVA Stage 2**

Compositional theme	<p><i>Readiness:</i> Moving from categories to cross-cutting themes</p> <p><i>Recognition:</i> Re-viewing the montages to <i>identify key themes</i></p>
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<b>How are these images constructed?</b>	<i>Refinement:</i> Zooming in and out to make sense of key themes  <i>Reflection:</i> Moving from composition to meaning
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*Readiness:* I re-read my reflexive notes so far and highlighting aspects that cut across the main compositional categories, using my research question (What does HRM look like?) as a prompt. Perhaps inevitably, these notes highlighted visual aspects that I felt were inadequately represented in the categories themselves, for example the variety of props and symbols. My notes also drew attention to images that had been more difficult to categorise, as explained more fully below. During this step I mind mapped possible themes to review against the images.

*Recognition:* Using my mind maps as a prompt, I worked with the category montages to create new thematic montages identifying key themes by physically moving images around. This step requires the researcher to let go of the initial visual categorisation and literally re-view the images. As previously, I worked in PowerPoint grouping images together visually, and as a rough guide I spent approximately two days on each of the categories undertaking the initial review. At no stage did I apply lexical labels, other than in naming the montages I had created. As with any process of thematic analysis there is the potential to generate an almost infinite number of themes. I kept focused on my research question and through this process three cross-cutting themes were identified; the body, symbols and groups. It is important to note that while in the previous stage of compositional categorisation, each image was assigned to one category, in this stage images could be assigned to multiple themes. This reflects the

move from a focus on overall visual presentation to a more detailed thematic compositional analysis (Rose, 2012).

*Refinement:* This step can best be described as zooming in and out to make sense of themes. This reflects a broader analytic idea of cycling between foregrounding and then backgrounding a particular aspect of research for consideration (Nicolini, 2009). As with the ‘refine’ stage in step one, this acknowledges the iterative and somewhat messy processes of qualitative research. The process of zooming in involved selecting specific images and asking further questions about the composition, which I did in short blocks of time over a period of a few weeks. Again I used Rose’s (2012) key areas of compositional analysis (feature, colour, spatial organisation, light and mood) to identify the way in which these themes were visually portrayed. The process of zooming out involves looking over the theme montages, working across many images to make sense of the relationship between the specific theme and my research question. This process of zooming in and out was repeated across each theme multiple times until I felt that I had completed an initial process of meaning making from this stage of the analysis. Highlights of the analytic conclusions I began to draw in relation to each theme is set out in Table 6.

**Table 6: Visual Themes**

Theme	The body: Diversity and sameness
	<ul style="list-style-type: none"> <li>• Dehumanisation in some forms; people as target of HRM, but are themselves barely human.</li> <li>• Variable gendering from basic addition of a skirt use of the hand-on-hip ‘super model’ pose. Aside from the manipulation category, there appeared to be an equitable gender mix and no images were exclusively male (two were exclusively female).</li> <li>• Smart business dress dominates.</li> </ul>

- Within the real category, many images incorporated ethnic diversity. In general, the more individuals within an image the more diversity was conveyed.
- Most individuals were either young or middle-aged and there were no images of visible disability.
- Dominant facial expression was smiling and the overall emotional range was extremely narrow.
- The body of the employee is constructed as controlled and disciplined. There is more sameness than diversity; bodies behave appropriately and enjoy doing so.

<b>Theme</b>	<b>Symbols: Maps, cogs and jigsaws</b>
<ul style="list-style-type: none"> <li>• All maps were global and featured as a backdrop or floor to the image.</li> <li>• Unlike when an individual is shown on a jigsaw piece, in the case of the cogs they are always connected.</li> <li>• Generates an impression of order and predictability, of connections waiting to be made if only the individuals (employees) can work out how they fit together.</li> <li>• Work here is inherently ordered and well fitting, awaiting the 'correct' action or interpretation of the employee.</li> </ul>	
<b>Theme</b>	<b>Groups: Relationships and connections</b>
<ul style="list-style-type: none"> <li>• Often unclear relationships; aligned or in circles and occasionally lines on the floor or a backdrop act as connectors between the figures.</li> <li>• Particular interaction shown in the manipulation category</li> <li>• Meetings, handshakes and handstacks</li> <li>• Images tended to portray groups as egalitarian; it was not clear one individual was in control.</li> <li>• Happy smiling faces reinforce the notion that such interactions are entirely pleasant and without problem.</li> <li>• Connections at work are presented as both personal and personable, within a traditional work context of face-to-face meetings and handshakes.</li> </ul>	






*Reflection:* This involved a shift from composition to meaning, pertinent to this stage of the analytic process. This is key transition in CVA. Reflective notes made at the end of this stage involved looking back at CVA stages 1 and 2 to consider how my understanding of these images had changed. In particular it was important to consider that in the increasing focus on my research question, other possible lines of investigation were inevitably ignored.

**CVA Stage 3: Semiotic Analysis**

**Table 7: CVA Stage 3**

<p>Semiotic analysis</p> <p><b>What might these images mean?</b></p>	<p><i>Readiness:</i> Preparing to question what lies beneath these images</p> <p><i>Recognition:</i> Questioning the images to uncover potential meanings</p> <p><i>Refinement:</i> Using the images to further interrogate meaning</p> <p><i>Reflection:</i> Review of strengths and weaknesses across the analytic process</p>
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*Readiness:* This step involves preparing for an analytic move to question what lies beneath the surface of these images (Van Leeuwen, 2005). Readiness for this stage involved further consultation with methodological guides and working back over the previous two stages of CVA to determine an approach that was appropriate for my research question. A useful summary is provided by Machin and Van Leeuwen (2016) who describe three areas of semiotic focus as what is visible, how this can be interpreted and the significance for understandings of these interpretations. Detailed compositional analysis in earlier stages had already built a

foundation for a focus on meaning, interpretation and understanding in this final stage. To facilitate further interrogation, using the analysis completed so far I set out the following questions:

- What could this tell me about HRM? What aspects of HRM seem to be represented?
- What is brought together/separated? What is brought forward/emphasised and what is pushed back/neglected? What is stable/static and what is moving/changing? What is generalised/abstracted? How do these relate to HRM?
- What rules of ordering/linking/relationships seem to be inferred? What conventions are at work here? What are the implications for understanding HRM?
- What is persuasive? What do I believe about HRM from these images?
- What interests come to the fore, or are in the backgrounded? Who is involved in HRM?

For this stage of my research I produced full colour prints of all the montages (categories and themes) that I had produced to date. I worked with these alongside the PowerPoint files which allowed for me to zoom in and out, regroup and in essence play with the images during this stage. These steps are described below.

*Recognition:* This involved taking each question from the list above and working through the different montages produced in stage 1 and 2. Individual preference has a significant impact on how any qualitative research is performed. Some researchers prefer to work with analytic software packages whilst others use various forms of highlighting and annotation on physical data. My approach was to produce mind maps for each question, creating a separate branch for each montage and building connections and further analytic comments out from these. This involved working through relationships between the images (using the categories and

themes as prompts) and broader systems of understanding (here, HRM) to generate potential answers to these questions as a way of making sense of the image repertoire. This reflects Swan’s (2010) depiction of going to-and-fro between images and understanding. At the end of this step I had five A3 pages of mind mapping, one page each for the question areas. Each mind map started with a clear structure but become extensively annotated. These annotations included notes of new sub-questions and areas that I felt warranted further exploration, as described in the next step. Recognising this as an inherently subjective analytic approach is critical. There is no attempt here to lay claim to research objectivity, in fact the opposite; subjectivity is embraced and foregrounded.

In this methodological paper it is not possible to provide a full explication of the analytic findings. However, building on the earlier overview, Table 8 below provides an overall summary of key aspects.

**Table 8: Example of analytic insights**

People dominate but work is absent.
Work is a generic ‘white collar’ experience; non-managerial workers are invisible
The worker is generic reduced to a stick figure or dressed in a uniform of white shirt and dark business suit.
Connections matter, both materially facilitated and direct (a handshake)
Personal connections are uniformly happy, joyous even.
HRM results in a very enjoyable experience for all those involved; it is essential to produce these ‘successful’ outcomes.
People and connections are straightforward and uniform.
Diversity appears managed and made the same (e.g. through uniform clothing).

We are all the same and we are all happy.

HRM must both enable manipulation yet create the illusion of liberation so that employees remain content.

*Refinement:* In this step I used specific visual analytic techniques to further develop answers to questions considered above. This reflects Shortt and Warren's (2019: 247) advice of thinking of 'each individual photograph in the set...as a "note" in a musical composition that when "played" (viewed together) performs a collective meaning that cannot entirely be reduced to the sum of its parts'. This echoes Breitbarth et al.'s (2010) approach of attending to case examples to explore specific aspects of analysis. Here I describe three specific visual analytic techniques; storyboarding, focusing on particular feature and unpacking an exceptional image.

D: Manipulation



A: Stick & pin



C: Silhouette



B: Real



B: Real



Zooming in to focus on the individual

I examined the effect of inter-personal distance between the viewer and the image (see Figure 1 below) and used storyboarding as a supporting technique, a high level example is set out in Figure 1.

**Figure 1: Changing focus across the images**

Left to right image details: No image credit (example use: <https://sdinets.com/>); Image Credit: Megapixel, No image credit (example use: <http://businesscasestudies.co.uk/case-studies/by-topic/people.html>); Image Credit: Shutterstock; No image credit (example use: <http://www.gsshrolutions.com/about.php>)

In this high level example of storyboarding, reading from the left, HRM is first represented as holding employees, they are then organised (by lines) and placed correctly (as a well-fitting jigsaw) before moving to happily perform work and join hands. Managing and organising relationships is presented as a primary concern of HRM with both uniform and positive outcomes.

Secondly, I focused on a particular visual feature; hands. Gesture has been much explored as hands are seen as a means by which characters speak to each other and to the viewer (Kendon, 2004). In these images, hands are used to denote work activity and also connections between people at work. The display of connections is via handshakes and handstacks in particular. The former can signify a deal and trust between two parties while the latter can represent unity and commitment to the team. The use of gesture across the images reinforces the emotional displays which signify the positive outcomes of HRM (also discussed below). Hands were also used in the depiction of power, particularly in the manipulation category, as the headless figure points, moves or, as in Figure 1 above, holds employees.

Thirdly, I unpacked an exceptional image. I examined the dominance of smiling faces by explicitly singling out an exception, an image of a human pyramid where the individuals looked in pain and discomfort (sub-category of 'odd groups', Table 4). This prompted me to explore how it took an unusual and uncomfortable image to disrupt and challenge the dominance of smiling faces. I then returned to the montages to look at the expressive nature of the images, focusing on the 'real people' category. These are 'real' people and yet the sense of the artificial is heightened by a uniform positive engagement which suggests those featured are on their best behaviour and ready for inspection. Setting these images alongside the 'manipulation' sub-category, where in people appear as objects to be moved at will, suggested to me that HRM must both enable manipulation yet create the illusion of liberation so that employees remain content.

*Reflection:* This last step provides an opportunity to review the strengths and weaknesses that have shaped the research outcomes. Processes of reflection are subject to personal preference, but here involved revisiting the different stages and steps of CVA and reviewing what now made sense and what still remained unclear in relation to the research question. This process of reflection has continued through the process of writing this paper.

## **Discussion and Conclusions**

In this paper I have explicated the process of CVA for web images. In doing so I aim to support research examining pre-existing images, offering a structured approach aiding analytic

breadth and depth while ensuring a qualitative focus on the images themselves (Rose, 2012). I have offered a reflective account of my research journey exploring HRM, starting with a detailed account of data organisation. Here, I did not present an ideal or exemplar process but rather unpacked the critical decisions which impacted the route taken. I noted how there is much to do for qualitative researchers to understand how different platforms and protocols open (and constrain) access to various images (Pearce et al., 2018). Inevitably, the technological possibilities are ever evolving, with associated complexities regarding ethical and copyright concerns. Overall, this approach both recognises and situates the role of the researcher in curating data. Through this account, I hope to encourage further discussion of these aspects and their role in the qualitative visual research of web images.

In providing an account of CVA, I offer a structured process for combining compositional, reflexive and semiotic analysis, using a repeated structured of four steps across three stages to integrate these analytic approaches. Many visual researchers suggest bringing together different lenses in the analytic process (Rose, 2012; Van Leeuwen, 2005) but there are few detailed protocols to guide such an undertaking (Shortt and Warren, 2019). By setting out the detail of CVA, this paper provides a research protocol which others can use, and I hope develop, as the basis for their own research endeavours. I have provided a detailed account of how I worked with various forms of montage and storyboarding, keeping the images at the heart of analysis. However it is interesting that I did not move to a more visual form of reflexivity myself, for example taking images of my analysis or extensively visualising my results. This will be an area of exploration in my future endeavours. I am also mindful of Ardévol's (2012) commentary on the growing possibilities for online visual ethnography.

Whilst I do not believe that my research warranted an ethnographic label, I could have travelled further in that direction, particularly by extending the research by engaging in photo-elicitation or other participatory aspects to explore the consumption of images (Shortt and Warren, 2019) or by deeper exploration of the images in situ. Relatedly, CVA could be used as an initial exploration by those already committed to a more participatory approach or specific area of analysis. With a participatory perspective in mind, developing a protocol that would enable individuals to join the researcher in an analysis of relevant web images (for example in relation to their own profession) would be interesting to explore further. Moreover, this process made me more sensitive to my own use of images, particularly within my teaching practice. There has been some investigation of how images are used within academic disciplines (Wilson and Landon, 2016). Too often we add images to brighten or add interest to our presentations and reports with little regard to their potential interpretation either independently or alongside the accompanying text. As a researcher interested in visual analysis, this prompted me to undertake a more critical and reflexive view of my own use of imagery in teaching practice, and to see the potential for future research in this area that relates to the positioning of the business school agenda more broadly. CVA's potential for use in this and other areas remains to be further explored and through such exploration it will undoubtedly become a more refined and developed visual analytic framework.

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