



## Seen from above: The theoretical future of aerial photos in land use, environmental and planning study



Stephen N.G. Davies<sup>a</sup>, Lawrence W.C. Lai<sup>b,\*</sup>, Mark Hansley Chua<sup>c</sup>

<sup>a</sup> Department of Real Estate and Construction, University of Hong Kong, Hong Kong

<sup>b</sup> Department of Real Estate and Construction, Ronald Coase Centre for Property Rights Research, University of Hong Kong, Hong Kong

<sup>c</sup> Department of Real Estate and Construction, University of Hong Kong, Hong Kong

### ARTICLE INFO

#### Keywords:

Aerial photographs  
Big data  
Land use  
Heritage  
Maps

### ABSTRACT

Although there is growing interest in the subjectivity of ground photos, similar criticism of aerial photos as a media product widely used in land use, environmental planning and management is seemingly absent. Inspired by pioneering work of Dorrian and Pousin (2013) and informed by the idea of Farman (2010) that users of aerial images can re-contextualise and subvert “master representation”, this paper attempts to offer an explanation for this contrast and argues that it is harder to wage a subjectivist battle against aerial photography than against ground photos and discusses the possible better use of government possessed aerial photo data in a digital form. Four reasons for this based on disinterested observation, data neutrality, psychology and focus are offered. Two thought experiments and examples are used to help explanation.

“Maps and images have power; they are neither neutral nor unproblematic with respect to issues of representation. Representation is not reality; to conflate the two is to risk naturalizing the assumptions silently embedded within these images.” (Carolan, 2009: p.278)

### 1. Introduction

Aerial photographs are, for many environmental planners and land use managers, something to be turned to without question as a useful resource. Such photographs, scrupulously taken using carefully designed systems, give and are assumed to give a clear, exact, detailed depiction of terrain. With the use of such tools as orthophotography, infrared filters or today’s additional tools like LIDAR (Light Detection and Ranging), AVIRIS (Airborne Visible and Infrared Imaging Spectrometer) and SAR (Synthetic Aperture Radar), seemingly ‘invisible’ data can be ‘seen’, extending our understanding of the surface world being depicted. If such images cannot offer Thomas Nagel’s ‘view from nowhere’ (Nagel, 1986), they are, as ‘bird’s eye views’, by definition not a normal human’s eye view.

By contrast, ground photos are increasingly analysed as in some sense irretrievably subjective. They are photographs very definitely always taken from somewhere by somebody and, by implication, have been taken with all of an engaged viewer’s propensity to see ‘this’ and not see ‘that’; to foreground ‘this’ and background ‘that’. In that light

the absence of a similar criticism of aerial photos despite their wide use in environmental planning and management, and hence indirect effect on people’s lives, is significant. This paper accordingly takes up the contrast and, inspired by pioneering work by Dorrian and Pousin (2013) and informed by the idea of Farman (2010), seeks to question the thought that users of aerial images can – or do – re-contextualise and subvert “master representation”. To that end this paper attempts to offer an explanation for the contrast between the subjectivist perils of a view from somewhere and the empyrean detachment of the bird’s eye view. It will argue that aerial photographs are not easily construed in the kind of subjectivist terms that have been employed against ground photos. It will contend instead that where aerial photographs are concerned the glib and swiftly undermined assumption of early photography that ‘the camera cannot lie’ is precisely why aerial photography is used as it is. By way of illustrating why this is so, we consider the use of aerial photography in land use planning, mapping and management and how aerial photographic data held by governments in digital form may be better used.

In what follows we first set out our stall in terms of the theoretical context that frames the discussion. We move on to outline the aim of this research and to sketch its methodology. The bulk of the paper then follows, using primarily government aerial photographs to establish the clear differences which we have hypothesized to exist.

\* Corresponding author.

E-mail addresses: [Daiwaisi@hku.hk](mailto:Daiwaisi@hku.hk) (S.N.G. Davies), [wclai@hku.hk](mailto:wclai@hku.hk) (L.W.C. Lai), [mhansley.chua@gmail.com](mailto:mhansley.chua@gmail.com) (M.H. Chua).

## 2. Theoretical context: subjectivist attacks on maps and photos

Like many other social practices, the use of maps has not been immune to subjective critical analysis (Monmonier, 2018). The idea behind this is that maps are not free from the biases and preferences of their authors or commissioning authority.

Recently, photos, championed by artists for being heritage items (Arijs, 2014), have been subjected to similar criticism. It is a criticism that can be dated back to the ever-controversial Viollet-le-Duc, who preferred maps over photographs (O'Connell, 1998). Interestingly, no such accusation of bias or authorial preference has been made with respect to the use of aerial photos. Perhaps the reason is the same as that which we can infer animated Viollet-le-Duc. For what he actually hoped to obtain was “a series of photographs taken perpendicularly from the surface of the earth” to represent Mont Blanc because what he wanted – in anticipation of photogrammetry – was to make an accurate map. The bird's eye view, in short, promised accuracy, not bias or distortion.

Some theorists, like Phillips (1999), Daston and Galison (2007), Daston (2008) and Muehlenhaus (2013), taking a social perspective, probably under the undue influence of de-constructionism, have critiqued maps and/or photos as inevitably subjective things. Sometimes this stance reflects an *ideological presumption* that tends to rule out any *possibility* that maps and photos, as social products, can correspond to objective reality, supposing such a reality to exist. Such a stance is weakened by the same theorists' admission that maps and photos can be “useful”. Accepting that minimal ‘usefulness’ reduces the claim of radical subjectivity to little more than the hardly controversial – indeed commonplace – claim that a map or photograph in some way reflects the values of its producer. But it also stresses, *if sotto voce*, how much a map or photograph may also serve as an instrument that helps to give a realistic understanding of the place(s) it shows.

A sober attitude is that map and photo users, who very much want an objective understanding of reality however difficult that might in theory be, would not waste time playing with merely subjective things, especially when it is truly “a matter of life and death” rather than imaginary killing and saving. This will be the nub of our argument for why critical strictures aimed at ground level photography have not been extended to aerial photography. For it is not without strong relevance that aerial photography was born, as a critically useful tool, over the trenches of First World War battlefields as a natural ‘child’ of a long tradition of what we might style ‘overview reconnaissance’ that dates back millennia via the first military observation balloons in the 18th century (Gillispie, 2004: 372–373) to the commonplace of ‘seizing the high ground’ to command an overview of a battlefield (Corson and Palka (2004: 403). When the object is to kill or be killed, however repugnant such a misuse of human genius may be, of one thing we can be sure; everyone involved has a very lively interest in avoiding merely seeing what they want to see.

Put very simply, looking down above the heat and dust of battle allows a commander to see the relationship between his own and enemy forces and make his dispositions accordingly. The clearer the view the better. So a progression from real time but imperfect direct observation from an advantageous hilltop through time delayed ‘bird's eye’ verbal and sketch reports from a balloon and time delayed scaled photographs to today's real time satellite and battlefield drone ‘eyes’ makes clear sense. We want that view from the empyrean, detached as it is from the shortcomings of a merely earthbound perspective.

It follows that maps and photos produced and/or used by the military or police in their operations, whatever may be the ‘bias’ in choosing this area to photograph or map rather than that, can hardly be intentionally “made beliefs” that are in some sense displaced or disconnected from the real world they are intended to represent. Indeed critics who would argue for such an ineradicable shortcoming find it extremely difficult clearly to expound the displacement or disconnect their critique suggests.

## 3. Research aims and methodology

It is from this stance that this paper attempts to (a) canvass the possible reasons for the phenomenon that aerial photographs are not subject to as much, or any, of the criticism levelled at ground photographs by theorists on heritage studies; and (b) discuss the future use of government held aerial photo data for land use, environmental and planning study.

This work is not a technical exposition of some novel methods in air reconnaissance, remote sensing or use of drones. It is rather an analytical attempt to evaluate the objectivity of aerial photography. The method to tackle the first aim is by a careful textual and contextual analysis of the writings on the subject matter. Here Gombrich's (Gombrich (1980)) distinction between man-made and machine-made images offers our key to a better understanding to the claim that “all photography is propaganda”. For the second aim, our method is by way of probing the use of aerial photos in Crown prosecutions in relation to planning enforcement in Hong Kong.

Our method for meeting our second aim may seem somewhat parochial in focus. It is not, not simply because Hong Kong is a large, modern city closely integrated with and a significant part of the global trading and financial system, but more because no great imagination is needed to see how the particular use of aerial photographs in Hong Kong that we shall explore and explain can be generalized. For what is of significance here is the very nature of evidence in a court of law bound, as that is, by the laws or rules of evidence and their strict criteria as to admissibility with respect to proof of facts (Capowski, 2012). That aerial photographs are accepted in a system of courts in an international city at the pinnacle of which stands a Court of Final Appeal with its judges drawn, at the time of writing, from Hong Kong, the United Kingdom, Australia and Canada, suggests their value *per se* as evidence. But also as evidence not merely in any court of law,<sup>1</sup> but in any situation where there is a need for unimpeachable evidence. It is this acceptance of aerial photographs in such a demanding context that, we believe, stands as a stout and general buttress to their claims to objectivity.

Prior to these endeavours and to provide the setting, there is a need to explain the relationship between government aerial photos and maps.

## 4. Government aerial photos and maps

Aerial photos taken by the state/government form a carpet of images of a territory targeted for reconnaissance, whatever might be the need to which the visual information so gathered is intended to be put. Fig. 1 shows conceptually how earth features are recorded on an aerial photo by plane or satellite photo taking.

With the passage of time, these photos become relics representing a ‘frozen’ moment in the appearance of a given territory and, thus are *prima facie* heritage pieces, as well as indispensable primary sources for exploring, rediscovering, and ascertaining present propositions raised over ground features and even underground matters in the territory.

Prior to the rise of remote sensing devices that can be used as aerial surveying tools for the private collection of ground data in digital form that today constitute what has become part of “big data”, aerial photos were initially largely the monopoly of military and governmental agencies, which used these photos for mapping (Dawe, 1969) and surveillance purposes, whether routine or task specific. For at least the

<sup>1</sup> Here we would refer to <http://www.aerialarchives.com/legal.htm> (accessed on 25.5.2018) and its citation of the use of aerial photographs in legal cases in the USA and the International Court of Justice. Equally, the National Collection of Aerial Photography (NCAP) in the United Kingdom specifically notes the value of aerial photographs as evidence in boundary disputes (<https://ncap.org.uk/case-studies/boundary-disputes> accessed on 25.5.2018) and in the evaluation and assessment of land use change (<https://ncap.org.uk/case-studies/land-use-change> accessed on 25.5.2018).

Download English Version:

<https://daneshyari.com/en/article/6545997>

Download Persian Version:

<https://daneshyari.com/article/6545997>

[Daneshyari.com](https://daneshyari.com)