

MSc Dissertation:

Is Ecuador prepared to deploy Drone Journalism?

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Abstract

Since 2010, journalists started their path as pilots of small radio-controlled aircrafts. These drones are creating new perspectives for news reporting and allowing humans to reach places they never could. This technology has led to new opportunities and constraints for reporters, audiences, lawmakers, and scholars. In addition, each region provides different prospects for the deployment of drone journalism. This dissertation addresses the circumstances in Ecuador to adopt this activity and analyses the different limitations and expectations, regarding technicalities, legislations, ethical issues, and journalists' perceptions.

For this purpose, the classic Method of Inquiry in Journalism (addressing the What, Who, Where, When, How, and Why from a topic) was employed in order to foresee if Ecuador is prepared to deploy journalistic drones. First, the understanding of the term 'Journalistic' must be clarified. Then a profile of the journalists that will fly the crafts will be established, reflecting the willingness of Ecuadorian reporters towards these activities. However, the gap that exists between the technicalities and the field reporters is shown. In addition, the feasibility of drone journalism will be examined. For example, while technical and efficiency constraints display progressive arguments, the legal framework of Ecuador –compared to other regions– reveals a *hole* within aerial regulations. These limitations can also be seen as an opportunity to start practicing the activity without strict guidelines. As part of this research, an experiment with a basic aircraft was performed to face weather conditions, safety issues, and real-life problems of flying a small device while recording videos. Finally, a discussion on ethics will display how this new branch of journalism deals with openness, accuracy, transparency, and privacy; all of which are qualities that are common to any reporting endeavour.

This dissertation is intended to be the first academic research of this topic in Ecuadorian spheres. During the investigation no other related study was traced.

Further implications of this subject can open new prospects for journalistic work and research of the relationship between man and machines.

1. Introduction

Eyewitnessing as (Zelizer 2007) argues is perhaps journalism's most important feature; to be present at the scene of an incident generates credibility and legitimacy among audiences, two characteristics that define the significance of this activity for their viewers. Aware of this key role, journalists have entered the field, seeking -consciously or not- for authenticity, drama, and action to fulfil the expectations (Liebes and Kampf, 2009). This authenticity, thanks to the evolution of reportage technologies, has been reached more accurately through decades using: (1) newspapers with news from the day before, (2) radio and television programs that covered live events, and (3) Internet platforms -controlled by media companies and common people- that spread worldwide news in seconds.

These aforementioned technologies not also affect the reportages as final products, but the characteristics and requirements for the eyewitnessing. It is common to observe coverage of elections, wars, or sporting events performed by *special envoys*. Nowadays, where it is possible to have reporters anywhere around the world, some discussions started arguing about the possibility of recording news through little devices that do the work from a "robot-eyewitnessing" perspective (Gynnild 2014). From these new tools, a novel branch of reporting tools emerged; drone journalism is one of them. This new type of journalism is in its first years of development and although some research is being done (Brooks 2012; Culver 2014; Gibb 2013; Marron 2013; Waite 2013); media companies, universities, and entrepreneurs are, with a phenomenological approach, testing new scopes of this activity in order to learn the constraints regarding its ethical, physical, and legal implications.

This dissertation aims to explore the current stage of drone journalism, along with the implications and the limitations that may appear when reporters try to

embrace the new technology for news purposes. As some research has been carried out about drone journalism's history and dimensions, this paper, due to former personal and work experience of the researcher, narrows the research to a specific scope: Journalism in Ecuador.

Regarding drone activities, it is important to explain the rationale behind a study of Ecuadorian journalism. As Hassan (2008) argues, the sum of the technology evolution and neoliberal globalization generated a sense of "shrinking of space". In other words, any development can be known, spread, and achievable through information and communications technologies. Any journalist in the world can discover drone journalism, purchase a drone, and start making experiments. There are even non-profit organizations involved in this new space of knowledge. Exemplifying this, the Professional Society of Drone Journalists encourages reporters to join, offers some guidance, and generates a worldwide community around drones (PSDJ, N.D.). Regardless of the place of origin, experiments on drone journalism should not differ to the results on other regions in terms of ethical and social constraints.

In terms of legal and technological actualities, the results from drone journalism in Ecuador may differ from other cases, due to the late arrival of certain technologies. This, far from being a problem, could be an opportunity to understand how drone journalism's goals can be achieved in developing countries and through this study, trace some future research within Latin America. This research mainly tries to answer one primary question – Is Ecuador prepared to deploy drone journalism? This inquiry serves as the *core research question* and its procedure of analysis will be explained later on within the methodology section.

This dissertation comprises of seven chapters. The current section is an introductory appraisal on how effective and significant is the study of drone journalism in general and within the Ecuadorian context. The next chapter explains the approaches that will be used within the discussion sections to obtain

relevant responses for specific questions regarding drone journalism and will also clarify the rationale behind the division in the discussion sections.

Chapter 3 argues the importance of Aerial Viewing in the global imaginary, the roots of the term “drone” and its constraints within military applications, and provide background and the evolution of drone journalism. In the next chapter, a series of interviews to media professionals, such as journalists, photographers, businessmen, entrepreneurs, and scholars will be collected; their answers construct the social framework of Ecuadorian journalism. In Chapter 5, the research addresses the feasibility of drone journalism in terms of safety, efficiency, technical, and legal constraints. Throughout this section, the constraints that novice drone journalists may encounter will be discussed based on an experiment done by the researcher with a basic craft.

Chapter 6 is the last section of discussion; here the reader can find three case studies and comparisons regarding the usage of drones for journalistic purposes. The main objective in this section is to address the problematic of newsworthiness as opposed to journalistic ethics and the safety of reporters. The conclusion summarizes data and testimonies and tries to answer the core research question through the responses given in each discussion chapter. This part also notes the limitations of the current study and how new topics should emerge from this research and be addressed in the future.

Although some experiments have been made in Ecuadorian soil (Espinosa 2014a; Espinosa 2014b; El Universo 2014; Últimas Noticias 2014), this research intends to be a first academic attempt to acknowledge and register the possibilities of drone journalism in Ecuador, due to a lack of evidence regarding the topic as found in the current study. The experiments performed in Ecuadorian soil were held in specific conditions and, since they were conceived as trials, cannot fully demonstrate the factual conditions for the deployment of drone journalism in real contexts in Ecuador.

2. Methodology

As mentioned before, this research is conducted through an analysis of literature review, case studies, and experiments. Therefore, this dissertation follows a constructivist approach in order to present the findings. This style fits the study of drone journalism because it highlights how this social reality is constituted through interactions (Hart, 2012). Following the constructivist model, each discussion chapter argues complementary topics that, at the end of the dissertation, are combined to build final assertions.

2.1 Method of Inquiry

Scholars are studying drone journalism by its particular dimensions. For instance, Tremayne and Clark (2014) analyse the constraints as follows:

Practical Dimensions

- Practicality
- Safety
- Practical limitations

Ethical dimensions

- Ethics
- Privacy
- Law

The Professional Society of Drone Journalists (PSDJ) on the other hand, created a Hierarchy of Ethics (Figure1), where they suggest a “layer of additional ethical considerations” (PSDJ 2014a).



Source: Professional Society of Drone Journalists

It is noteworthy to highlight the similarities between these proposals. Both agree in the analysis of *Ethics, Safety, Privacy*, and *Law* of public spaces for the PSDJ as key elements of drone journalism, showing the implications that these devices may encounter in future regulations. However, the differences between models also provide important inputs; while Tremayne and Clark are concerned about the practicality of the usage of drones, as the usefulness and caution to operate them, PSDJ place newsworthiness as the prime element of its code, arguing that the importance of the coverage must be sufficient “to risk using a potentially harmful aerial vehicle” (PSDJ 2014a).

This dissertation addresses the dimensions aforementioned and additional aspects through an alternative division. They follow the classic method of inquiry of journalism: the five Ws and one H. In journalism, asking the questions: What?, Who?, Where?, When?, Why?, and How? is an attempt to typify everyday news, as a phenomenological approach where journalists can typecast the unexpected (Correira 2009). In the case of this research, the characteristics of drone journalism can be scrutinised in different sections. This classification has been useful in previous research papers and publications for journalism analysis as well (Hauglid and Gauslaa 1997; Singer 2008).

The discussion section is divided in four parts, contrasted with one or more journalistic questions to typify the possibilities of drone journalism in Ecuador. The following table shows the order of the chapters, the sub research question that aims and the method employed:

Table 1: Discussion chapters and questions

Chapter	Question	Method
3. Definitions of Drone Journalism	WHAT is a drone?	Literature Review
4. Journalists	WHO will be flying the	Literature Review

perspective	drones?	and interviews
5. Feasibility on Drone Journalism	HOW these drone activities will be performed?	Literature Review, interviews and experiment
6. Newsworthiness of Drone Journalism	WHERE, WHEN and WHY Drone Journalism should be applied?	Interview and case studies

Each chapter has an introduction to the topic, discussion and final observations, which further will build conclusions on the possibilities of drone journalism in Ecuador.

2.2 Literature review

The bibliography around this topic is still scarce, particularly due to the novelty of the activity: the first identified case of drone journalism was registered in 2010, when a *paparazzo* used a flying device to get exclusive footage of Paris Hilton in the French Riviera (Gibb 2013; Gynnild 2014; Tremayne and Clark 2014). Currently, academic circles, such as the University Nebraska-Lincoln and the University of Missouri, are developing laboratories and clubs to define ground rules for this type of journalism and theorize its practice (Waite, 2013; Wolfgang, 2013). Since theories and concepts are still in progress, the literature review follows the collection of the aforementioned sources and online reportages and news about the subject. This was specially applied for explaining the definition and the newsworthiness of drone journalism.

Furthermore, in order to explore topics around journalist's perspective, feasibility, or newsworthiness of drone journalism, literature around diverse and specific topics was reviewed. Research on performance journalism, war reporting and journalism in general were employed to assess chapter 4. For the section on practicality, a publication about aerial photography, aerial viewing, advances in unmanned aerial vehicles, and Ecuadorian aviation laws were considered. In

addition, some documents concerning Digital Media were considered to obtain concepts about topics related to Information Society, Social Media, or Citizen Journalism. Since literature about Ecuadorian cases were not found, this analysis draws a general framework that can be related to the activity in any geographical context and will be useful for deeper or related future research.

2.3 Interviews

To narrow the general concepts obtained in the literature review, a series of interviews were held with Ecuadorian experts related with the journalistic sphere. Due to this, the real expectative and possible constraints among professional performers can be traced. The list of interviewees, their positions, and their importance for research is as follows (see table 2):

Table 2: List of Interviewees

Interviewee	Position	Focus for research
Christian Espinosa	Digital Media Entrepreneur	Author of the first experiments of drone journalism in Ecuador
Sandra Ortiz	Digital Development and Technology Manager – El Comercio Group ²	Responsible for the implementations and business decisions in her department
Alfredo Lagla	President of the Society of Graphic Chroniclers in Pichincha ³	Interested that photographers obtain a professional certification
Diego Pallero	Journalist and Photographer – El Comercio Group	Author of Aerial Photographs
Susana Morán	Performer Journalist and well-	Reporter in 30S (case study)

² El Comercio Group is the second largest print media company in Ecuador, founded in 1906. The group has bigger relevance in the Highland region, with a morning newspaper, weekly magazines, a tabloid and various news and commercial websites.

³ In the Ecuadorian context, professionals are used to form unions within provinces or cities. Pichincha is the second largest province in Ecuador. The Society of Graphic Chroniclers of Pichincha is the prime organization of its kind in the country.

	know Twitter user	in this research)
Patricio Cevallos	Communications Professor - Catholic University of Ecuador	Lecturer for the New Technologies for Communication courses
Pablo Escandón	Communication and Journalism Researcher - International Center for Advanced Studies in Communication for Latin America.	Production and MediaLab Manager

The interviews were held via questionnaires that were sent and responded by email platforms. The nature of the questions depended on the skills and experience of each interviewee. The questionnaires are displayed in the Appendix of this research.

2.4 Experiment

In order to understand the physical and factual constraints that journalists may encounter when they deploy amateur drones, some tests with a basic aircraft were held. For this, the researcher purchased a Mini Helicopter U13A Camera, which provides the possibility to control the craft and the camera from a remote control. The videos from the tests were uploaded to YouTube™ as an evidence of this attempt.⁴ The experiment also generated some observations in terms of safety, weather conditions, and technicalities of the drones. Although it is not possible to generalize the feasibility of these aircrafts from this single experiment, the results display an interesting sketch of the learning curve needed by inexperienced drone journalists.

⁴ To review these videos please refer to the following link:
https://www.youtube.com/channel/UC9V_xUQkLXnovs9e3CcC-UQ

3. Definitions of Drone Journalism

3.1 Introduction

To determine how drones can benefit journalism, it is compulsory to first identify what can be associated to the term *drone*. In this section, the historical and institutional definitions will be presented. The chronological review displays how the meaning of the word has been transformed and how this technology evolved from secret projects to devices that can be acquired in electronics retail stores. In addition, the institutional appraisal will demonstrate how purposes may vary depending on the organization that currently regulates drone activities.

First, in order to specify the terminologies for this dissertation is important to establish that the word drone will be used to specifically address these pilotless crafts. Tremayne and Clark (2014) found during their research that these devices were called through a variety of names and acronyms: uninhabited aircraft, unmanned aerial vehicles (UAVs), unmanned aerial systems (another UAS), unmanned aircraft (UA), unmanned aircraft systems (UAS), remotely piloted aircraft (RPA), and remotely piloted vehicles (RPVs).

Even though the term drone could be associated to a military usage, the simplicity of a single word is more appropriate for this analysis. This suitability can be evidenced when taking into consideration that the social framework of this research will be Ecuador, a Spanish-speaking country, where there is a customary habit to use Anglicisms for technological devices when there is no common way to translate their names. As an example of this, the words laptop, flash drive, scanner, among others can be referred. There is no current translation for the word drone and therefore in Ecuador and Latin America, drone journalism is currently and commonly known as *Periodismo Drone* (Espinosa 2014; Gonzalo 2014; La Prensa 2013). Since the aim of this chapter is primarily focused on the origins of drones, the main questions to be answered will be: What can be called a drone? And, what are its scopes?

3.2 Drone: It's a bee... it's a bird... it's a plane?

To start addressing the development of drones, the source and evolution of the term drone has to be examined. This analysis will lead to a broader understanding of how this *disruptive technology* (Gynnild 2014) has suffered variations in terms of purposes, applications, and scope. To understand this, it is necessary to use the basis of linguistics (Saussure 2013), where *Signifier* and *Signified* are the two inseparable parts that compose any sign. In the word drone, the signifier will be the permanent sequence of graphemes D-R-O-N-E; while the signified (or the ideal component) has suffered a variation through time as will be shown.

According to the tool NGram View (Google Books N.D.), the word drone can be traced in books, journals, or magazines from the end of the sixteenth century; the term could be found in scientific publications through several centuries (Desborough 1853; Heresbach and Googe 1578) as a reference to a male bee. The change of meaning seems to have occurred during the 1930s and 1940s. Brooks (2012) notes that in 1935 the United Kingdom's Royal Air Force built the first reusable radio controlled plane, which was called *The Queen Bee*, a possible reference to the entomological source. On the other hand, some publications like *Popular Science* started to call drones, "radio-controlled crafts" (Grumman Hatches a Mallard 1946) that were mainly focused on military purposes.

The connotation "a remote-controlled pilotless aircraft or missile" as displayed in current dictionary definitions (Oxford N.D.) has been used for more than 60 years to define this aircraft industry. Modern meanings of drones even suggest more advanced characteristics of devices that can "sense, think and act" (Culver 2014). This change of significance can even be traced in the way on how drones are being modelled nowadays, where its technicalities resemble a merge of aircrafts and bugs. The analysis of the terminology of the word drone is important because it serves as the best way to acknowledge how the world could refer to this activity. Audiences, in terms of journalistic aims, can easily link the word drone to flying-

unmanned devices and that will facilitate the reception and adoption of the content that will be generated through these crafts.

3.3 Before modern Drones

At this point, the question remains the same: What is a drone? Pike (2013) notes that the answer could be “almost anything in the air without a pilot”. She provides examples such as: a balloon with a thermometer, any *copter* with a camera, or a weaponized military drone. Maybe her definition can be seen as broad and almost cartoonish, but from an historical point of view she has a valid standpoint. People have been developing “drones” for each era to accomplish the same task: reaching a bird’s-eye viewpoint.

Humans have been attracted for centuries to aerial views of their surroundings and how to register them. It has been argued that between 428 and 347 B.C., Archytas of Tarentum, a Greek mathematician, invented a mechanical bird that could reach 600 feet before crashing. In addition, Chinese vertically flew balloons and kites for the same purpose (Dalamagkidis et al. 2012 and Yinke 2011 in Gibb 2013). Dorrian and Pousin (2013) collected seminars and conferences of colleagues about how this bird’s-eye reality has been mediated historically through drawings, models, photographs, and motion pictures. They refer to Danish artist Melchior Lorck, from the sixteenth century, as proof that even without any device, people tried to capture these sights. Lorck recorded panoramic drawings of Constantinople and the Mecca, while seeing from his window or sitting on some nearby hills (Warner in Dorrian and Pousin 2013).

Aerial views were also more than an aesthetical satisfaction. They helped to acknowledge the dimension of cities and settlements. In the same collection, several sixteenth century cartographic representations of Rome are analysed. In that research, the work of Antonio Tempesta is noteworthy because of the technique as his drawings displayed a different viewpoint from classical mapping. He managed to produce “synthetic images packed with factual information” (Bury

in Dorrian and Pousin 2013: 41), while presenting buildings and landmarks from a side view, where a third dimension can be sensed, generating a close look of what a person could see if s/he could fly.

The next step for the improvement of aerial viewing was balloons, due to its capacity to have occupants to be part of the vertical flight. In addition, through the evolution of modern photography, individuals were enabled to record real images from a bird's-eye perspective. However, inflatables became a real and popular asset only from 1867 with the foundation of Universal Exhibitions (Thébaud-Sorger in Dorrian and Pousin 2013). The French balloonist and photographer Gaspar Felix Tournachon or "Nadar" (Figure 2), is known as the first aerial photographer (Professional Aerial Photographers Association N.D.). His work also coincided with other efforts, such as cameras mounted on pigeons, kites, or rockets as first efforts to reduce the human factor in the shooting.

Figure 2: Aerial view of Paris from Nadar's experiments



Source: Professional Aerial Photographers Association

Finally, the beginning of the twentieth century was the scenario for the deployment of professional aerial photography. From the beginning these images gained importance. In 1908, while the Wright Brothers were displaying their invention of the modern airplane, photographs of the tests in Paris were being published worldwide (Lodder in Dorrian and Pousin 2013). The evolution of aerial photography continued through the twentieth and twenty-first centuries in terms of aesthetical, technical, and specialised advances. In Ecuador, the work of Jorge Anhalzer is worth mentioning. He is the most known aerial photographer in the country, who has been developing the activity from 1980 and, in his own words, allowed him to appreciate the “dramatic contrasts of the country”, regarding the mixture of landscapes from snowy mountains, rainforests, and beaches (Betancourt 2006).

While the development of in-flight shooting was a breakthrough for future applications to record aerial views and increased the aspiration for new techniques to accomplish it, the manufacturing of unmanned crafts was the key component to generate the current applications for drone activities and its expansion is worthy to be analysed separately.

3.4 Unmanned crafts

Aerial activities regarding military reconnaissance can be traced from 1912 (Warner et al. 1996), and first attempts to turn crafts into radio controlled machines can be encountered in 1917 when the U.S. navy installed a gyroscopic stabiliser in a biplane (Brooks 2012). These activities were even sponsored by known scientists of their age; Nikola Tesla published a dissertation where he discussed the importance of wireless control machines in the evolution of war and their significance in the security of a nation (Brooks 2012; Gibb 2013).

World War II meant a considerable advance for unmanned aircrafts. The United States Army and Navy launched programs to guide, through remote control

devices, explosive bombers to crash and destroy German bunkers (Sifton 2012). Until this point, the aircrafts still needed a human crew to lift off, prepare the explosives, and escape, which still caused deaths. During the first half of the twentieth century, the government of the United States of America was the leader in projects regarding drone activities. However, due to an accident in 1944 that involved a member of the Kennedy family (Singer 2009 in Gibb 2013) the programs were cancelled. In the following decades, this technology was further developed and focused mainly on surveillance. For example, during the 1960s or 1970s drones could allegedly be associated to espionage objectives in Congo, the Dominican Republic, or Cuba (Roberts 2013). In addition, due to the advances of the *Personal Computer Era* (Hassan 2008; Weiser and Brown 1997) in the 1980s and 1990s the controlling systems improved significantly and the US Air Force started developing unmanned aircraft armed with missiles (Sifton 2012). It is noteworthy that from the 1940s, drones were unlinked from lethal purposes. However, the 9/11 attacks deployed a rebirth of weaponized drones, a trend that is still evolving (Gibb 2013; Roberts 2013; Tremayne and Clark 2014).

In recent years, military advances in drone technology were implemented to patrol people inside US soil, such as Predator Drones flying along the Mexico / US border in 2005. Also, the police in Los Angeles tested a surveillance drone over the city in 2006 (Brooks 2012). All these purposes and applications constantly aroused debates about safety, humanity, ethics, and warfare. The literature on the subject is extensive, its implications are not part of this study, but it is compulsory to acknowledge them (Boyle 2013; Miller 2012; Plaw and Fricker 2012; Taj 2010; Yu et al. 2013; Zenko 2013).

According to a report from The Guardian, apart from the US, ten other nations (India, Turkey, Israel, France, Germany, Italy, United Kingdom, China, Iran and Russia) possess unmanned aircraft technology for a total of 807 drones in active service (Rogers 2012). Correspondingly, this number is increasing year by year and other countries are building their own crafts. For instance, Ecuador presented

its first domestic drone in January 2014; the *UAV-2 Gavilán* will patrol borders and areas such as the Amazon rainforest (Russia Today 2014). The Ecuadorian government spent \$500,000 in the development of the craft, seven times less than an Israeli equivalent and is planning to assemble more models and export them within South America.

At this point, it is important to acknowledge the research of Gibb (2013), as she collected the current definitions that five government regulators⁵ give to drones. Her analysis illustrates that although the designations were wide, they share common features: Flight autonomy, the capability to be weaponized or not, and the possibility that it can be retrieved or discarded. However, none of the five definitions specify a purpose for the crafts. Canada Transport notes that drones can be crafts “that perform a useful mission” (Gibb 2013: 3), but neither deepens in which scope the drones will perform. It is important to put in evidence that the Ecuadorian aviation laws have not yet defined drones or unmanned aerial vehicles within their regulations. The Civil Aviation Administration (DAC for its acronym in Spanish) only addresses, in a succinct approach, radio controlled aircrafts as part of their general rules for flying.

3.5 Civil Drones

Predictions say that the next decade the industry of unmanned aircrafts will reach a \$90 billion profit in the next decade (Tremayne and Clark 2014; Culver 2014). An important part of this market growth will be the civil usage of drones. New technologies, especially smartphones (Brooks 2012), introduced possibilities for GPS receivers, small parts and low-cost memory discs that enhanced the development of shorter devices and more diverse alternatives to control them. One key moment was the arrival of the Parrot AR Drone in 2010, a small craft that could be managed through an iPhone®. This device was an eye-opener to

⁵ These institutions were: the U.S. Department of Defense, the U.S. Federal Aviation Administration, the European Aviation Safety Agency, Canada Transport and the North Atlantic Treaty Organization.

opportunities for other purposes rather than military operations. Soon after, retail stores and online retailers were selling countless models on a large variety of prices and features. This introduction created new types of crafts: civil drones, which demand for a nearby pilot rather than allowing autonomous flying tasks as the UAVs, used for military purposes.

The development of small and less expensive crafts allowed different activities, very distant in some cases from the warfare perspective. Matternet, for example, is a Silicon Valley start-up that has been testing drones to deliver vaccines and other medicines to inaccessible parts of the world (Brooks 2012; Taylor 2013). Another illustration can be traced in agriculture such as weed seedling discrimination accomplished through photographs from Unmanned Aerial Vehicles (Gómez-Candón et al. 2013). Both cases are evidences of how diverse drone usage can be. Clarke (2014b) identified some current and potential civil applications for these aircrafts, such as:

- Load-Delivery
- Passenger Transport
- Hobby and Entertainment Uses
- Journalism
- Voyeurnalism
- Law Enforcement
- Community Policing, Voyeurism
- Hostile Load-Delivery

3.6 What is a drone?

Is important to end this section with a proper response for the sub research questions: What is drone? What is the scope for drones? After all the data exposed, a close definition to civil modern drones could be: *an unmanned aircraft, radio-controlled, retrievable with a clear mission for its deploy*. This last feature could be useful to separated drones from aeromodelism crafts. Drones activities are a response to ulterior needs, to accomplish some objectives that may affect people's lives rather than just flying them for leisure or pleasure.

With this definition in mind, the discussion can be now allocated within the people behind the controlls: their objectives, skills, and willingness to adopt this techonology. Journalism is just one of the dimensions that drone activities can reach. However, this dissertation will illustrate the importance of the intrinsic skills and characteristics of the journalists for an acceptable deployment of unmanned aircrafts for reporting purposes. The next section will revise the expectatives that reporters and photographers have towards drone journalism, its impact and the possible responses from their audiences.

4. Journalists Perspective

4.1 Introduction

As previously described, a drone is a remote controlled aircraft with specific objectives. Thus a Journalistic Drone will be a device that records videos and images from above, during an event with social impact and whose images can be broadcasted via news channels. While the technicalities of these crafts will be discussed further, this section aims to address the importance of journalists or photographers that will be controlling the machines.

In military fields, drones can be autonomous or remote controlled; nevertheless in journalistic spheres the crafts must be operated within a short distance due to the specific requirements of news coverage. Because of the existent technical and

ethical actualities in the industry, drones cannot be considered, as self-sufficient robots that deploy and land at will. Instead, they create a “cyborgisation” (Clarke 2014c) between humans and machines: pilots and crafts. This partnership requires the constant presence of the human mind to interact with any variables that may present problems to the devices, even with the most advanced software. On the other hand, the complexity of getting proper footage will also depend in the human condition to determine where, when and why to start recording.

This section tries to define the profile of this *pilot* and why the eyewitness condition of journalists places them in a central role to exploit all the possibilities offered by drones. Some professional opinions also construct an explanation on what are the expectations towards this new technology.

4.2 Eyewitnessing

Journalism has been considered a link between the powers to be and the citizens (Phillips 2012), providing elements to construct a public opinion and help citizens with their decision-making process towards politics, economy, social issues, among others matters (McChesney 2012). Despite some historical variations, this feature remains the cornerstone of the profession. For decades, journalists occupied a privileged place in society, where their mere presence and eyewitness gave them credibility and authenticity, according to Zelizer (2007) legitimising the activity within the popular imagination. Reporters have been considered important elements because they observed events from a fortunate perspective.

Markham (2011) also notes that journalism embraces positions of power from its space of cultural production, which occurs in the field. Under this perspective, reporters reproduce social, cultural, and political structures while they face the events in person, what ultimately gives reporters a *nose for news*. Again, eyewitness a story represents the first step to succeed in reporting endeavours. The presence of the reporter at the scene became more important when radio and television arose, generating a possibility of *liveness* (Liebes and Kampf 2009),

where image and sound magnified the prominence of the reporter. For ages this importance remained undamaged, but with the emergence of new technologies the possibility for eyewitness-broadcast events became available for the audience, the so called *prosumers* (Coyne 2011; Mythen 2010; Srinivasan 2012).

Zelizer (2007) acknowledges this “eruption of amateur content” and its impact. However, he notes that this content is biased with inaccuracy, lack of structure, lack of verifiability, and disproportionate graphicness. In other words, the role of eyewitness-broadcaster spread, but journalists are still needed in order to legitimise information due to reporters’ experience, ethics and direct access to mass broadcast channels. The usage of drones for reporting purposes is also a case of regular people having the same tools as journalists. However, reporters have to take advantage of the scope of the media companies, the access their profession provides and the ultimate goal of any reporter: find a different and interesting point of view in every coverage. Drone journalism may become a key opportunity to obtain renewed techniques to make reportages.

4.3 New eyewitnessing

Tremayne and Clark (2014) studied the first cases of reportages through the use of drones. They identified the first event in 2010, where a paparazzo flew an unmanned aircraft with a camera to obtain images of Paris Hilton in the French Riviera; the video then became part of a documentary. These scholars also mentioned reports from the Daily (a former iPad-only news app) and CNN in 2011 about the damage caused by a tornado, as the first serious attempt to record the magnitude of an event from above. Finally, they also referred to events caught by aficionados: the coverage of protests in Poland, Russia, and New York, as proof to the shift to a prosumer stage, as shown above.

From these examples, one common characteristic can be found: new accessibility, due to drones. The opportunity of measuring the scale of natural disasters or social clashes from a bird’s-eyes perspective in high definition displays some

characteristics of the drone-reporter relationship: the cyborgism link, the extended cognition possibilities and the synthetic situations that may occur during drone coverage. This cyborgism link refers to a close relation between operator and machinery. Drones may become in a prosthetic part of their users, where according to Haraway (1991:152) machines may appear “disturbingly lively” and the operators “frighteningly inert”. This merge between humans and machines is a current trend, people are trying to measure their body and enhancing their capabilities through the technology of the time, seeking an augmented body (Lupton 2013).

However, the usage of drones exceeds the field of robotics, because the craft may have some autonomous capabilities. Since its application deals with social impacts, a human mind has to be present to determine some aspects that software cannot conceive, like ethics, privacy, moral safety, etc. Clarke (2014c) notes that the relationship is not absolutely based on the physical interactions between the two parts, but with a high relevance for the psychological dimension of the pilot. In terms of military drones, the technology of the crafts delivers large volumes of data that have to be processed by the pilots, that aside of receiving information are commanded to manipulate buttons, knobs, joysticks, among others. For drone journalists the relationship may not seem that complicated. Nevertheless, the crafts will display other kinds of data that have to be recognised in order to obtain acceptable footage. Reporters will have to coordinate elevation, speed, light source, and lens accuracy. These actions are possible due to the efficiency of modern drones to fly in stable and straightforward trajectories.

Operating the mounted camera as an addition of the human eye is not exclusively a physical process. This possibility enhances human capabilities to understand and interact with any environment and generate new knowledge as a result of this relationship. This can be explained by the thesis of Extended Cognition. According to Clark et al. (2012: 87), cognitive processes can occur outside the skin of the cognizing agent. In addition, Clark and Chalmers (2010) argues that one of the cognitive processes that may be enhanced are recognition and search. This relates

to the objective of aerial viewing: revealing the formal chaos of the observed objects (Pousin in Dorrian and Pousin 2013). Thus, drones can be considered as extensions of the investigative job of reporters; the two-way interaction not only generates footage, but ideas and concepts within the mind of the pilot that, at the same time, affect the conditions for the flight and may transform coverage.

This *Active Externalism* (Clark and Chalmers 2010) pervades any human action that deals with technology, from a pencil that helps a kid drawing his ideas, to software that can interact with people through voice commands. As shown, from a positive point of view, drones are devices that can renovate reports and some aspects of journalists and photographers approach of events. On the other hand, the usage of drones may generate a disembodied experience for the pilots, where the lost of some environmental conditions may affect negatively the coverage. Clarke (2014c) states that pilots of military drones may feel detached from the context and culture where it is flying and the human responses ultimately could be compared to computer games realities.

Cetina (2009) studied interactions of technological realities and coined the term *Synthetic Situations* to explain how they are performed. In the synthetic situations, as the one established between a drone and a reporter, the interactant needs to develop new skills to obtain a fluent contact. Within any electronic environment, the senses of taste and smell are dismissed. Then, senses of touch, sight, and hearing become the only recipients of reality (Garza 2002). Nevertheless, through technology features, such as real time screen and battery status monitors in journalistic drones, pilots can obtain enough data to understand the actuality of the flight and its interaction. Drone journalists will also have to complement the usage of drones with deeper research on the topic. The footage will serve as part of the whole coverage since images by themselves cannot display the entire picture of a news event.

As has been demonstrated, the drone-reporter relation goes beyond remotely control of the craft. Journalists will need to create a close connection with all the technicalities that the machine offers. Likewise, the drone has to be conceived as an important tool to enhance the journalistic job, but its footage has to be complemented with other elements.

4.4 Drone Journalists in Ecuador

To understand the willingness of Ecuadorian journalists towards the use of drones in news reporting, this part covers two different aspects. Firstly, a review of five events covered with drones in the country describing the experiment and context. Secondly, a SWOT analysis will be done, based on the questionnaires from six interviewees.

4.4.1 Ecuadorian Drone Journalism

As mentioned above, drone activities for news coverage purposes are still scarce. Nevertheless, some experiments have been performed to test the possibilities of these crafts. The four cases presented in this research were performed during the first seven months of 2014, displaying the novelty of this activity in Ecuador.

The first two experiments were performed by Christian Espinosa, which is often referred as the leading technological journalist in the country. Espinosa commented that he made a partnership with a fellow TV producer, making a deal to use his drone and apply it to journalism (Personal Interview, 12 June 2014). Both experiments were held in the Ecuadorian capital, Quito. The first upload was made on 18 March 2014 and covered rock fans queuing, while waiting for the doors to be opened in the Metallica concert in Quito (Espinosa 2014a). A three-minute video was recorded and achieved, as of 29 July 2014, 13,220 views on YouTube™. In Figure 3, Espinosa recorded the experiment and his partner while flying the drone.

**Figure 3: Christian Espinosa's partner flying the drone
outside the rock concert**



Source: CoberturaDigital.com

The second experiment (Espinosa 2014b) was held in the *Ciudad Mitad del Mundo* Monument. Espinosa again partnered and obtain videos and images from the test. This time the coverage was not involved in any news event, but was performed in a touristic area of the country. Another interesting aspect was the attempt to live broadcast the video, but due to technical constraints, its resolution was poor and achieved, as of 29 July 2014, only 94 views on YouTube™ since its introduction on 24 March 2014. On the other hand, the photography obtained from the experiment (Figure 4) was a high quality image.

**Figure 4: Aerial View from the Mitad del Mundo
Monument in Ecuador**



Source: CoberturaDigital.com

El Universo, the largest newspaper company in the Ecuadorian coastal region, carried out the third experiment. On the 18th of April 2014, they used a quadcopter, owned by a fellow TV production company, to record the 2014 *Cristo del Consuelo* religious procession (Figure 5) in Guayaquil, the largest city in Ecuador. Within the article (El Universo 2014) they explained they used it to measure the magnitude of the event. The video in YouTube™ reached 25,323 views as of 29 July 2014. This coverage generated some insights as an outsider, rather than a journalist performed the flight. Due to the novelty, the flight was carried out above thousands of people, without constraints regarding their safety.

Figure 5: Aerial View from the “2014 Cristo del Consuelo” religious procession



Source: El Universo

The fourth coverage using drones occurred on 8 June 2014 during the most traditional foot race of Ecuador, the Últimas Noticias 15K. Since the competition is organised by an evening newspaper, which is part of the El Comercio Group, they aimed to have a different perspective through the use of a drone. For this experiment, the drone was only used to take a sole picture of the starting point (Figure 6). The race usually has aerial coverage, produced by a photographer mounted in a helicopter. For this image, Últimas Noticias used the device from a retail store that sells drones. Sandra Ortiz, Digital Development and Technology Manager from El Comercio Group, made a self-criticism on the coverage with the

drone: “We didn’t plan to tell a story, and I think it was an underused opportunity not very well used”. (Personal Interview, 10 July 2014)

Figure 6: Aerial View from the starting point of the Últimas Noticias 15K race



Source: El Comercio Group

After the review of these four experiments on drone journalism in Ecuador some aspects are noteworthy. First, journalists and media companies are creating partnerships with people, which besides owning the drones know how to operate them professionally. This can be considered an existing weakness for drone journalism, but it can also be seen as an opportunity for journalists and photographers who want to become drone pilots. Secondly, journalists are starting to identify places and events prone to drone coverage. This may be translated further in media planning that involves a constant use of these crafts. Third, Audiences are responding positively to these reports when the images are clear and the magnitude of events is well presented. Even though the second experiment of Espinosa had an intriguing element in the live coverage attempt, the low quality had a direct impact in its feedback. In summary, the first experiments of drone journalism in Ecuador are starting to shape this new branch of reporting, with some notable impacts and a clear learning curve for the future.

4.4.2 SWOT Analysis

To draw a profile of the current status on drone journalism in Ecuador, six professionals related with the field were asked about the current constraints of the activity; with their answers a SWOT analysis was developed. To obtain a balanced view, the questionnaires were sent to: To two photographers from different eras, an entrepreneur-journalist, a businesswoman in manager level, and two academics, a university professor and a researcher of digital media. With this mixture, perspectives about practicality, research, business and management constraints were covered from different points of view. *(For the complete set of questions and answers, please refer to the appendices 1-6).*

Table 3: SWOT Analysis chart

STRENGTHS	WEAKNESSES
Different perspectives for coverage Easiness and safety of deployment - compared to helicopters Cheaper alternative Enhances spectacular footage Enhances safety of photographers	Is perceived as a trend Previous (flying) skills needed Dangerous during the learning stage Nonexistent academic research Media companies subcontract services Implies same deadlines for editing Just a tool, not a new branch Constrains on focusing camera lenses
OPPORTUNITIES	THREATS
Journalists can design new forms of coverage Advertisers may be interested in these coverage Previous experience of photographers Ecuador has an ideal geography - few skyscrapers A curious audience	Safety and Privacy constraints Possible requirement of credentials Audiences are experimenting with the same tools A new type of journalist is required It is not financially viable - Advertisers Media owners are reluctant to support new technologies Journalists could take advantage of this tool for unethical purposes

For respondents, the strengths are related first to the efficiency that drone journalism will bring to aerial photography. The two photographers emphasised

on how the safety of reporters can be enhanced by using these crafts since drones will be the ones dealing with the risk. In addition, the variety and spectacularity of the images that a drone offers was also referred. Is important to note that all the strengths were related to how drone journalism could ease and improve the job for journalists, without referring to the impact in the audience, thus confirming that the perceptions related to the activity are still in a first stage.

The weaknesses, on the other hand, were focused on the lack of preparation of journalists and media to take this initiative. They acknowledged the existence of a learning curve to start using drones and how this is translated in media companies: subcontracting the services, as discussed previously. In addition, four respondents (two academics, businesswoman and entrepreneur) agreed that the drone journalism is now seen as a trend among journalists, prove of this is the untraceable academic research about it in Ecuador.

Within the opportunities, respondents firstly mentioned how the current experience of photographers can lead them to discover new alternatives to use drones in coverage. Secondly, the businesswoman and the university professor foresaw that advertisers might become interested in this type of reporting. This argument contradicts the opinion of the Digital Media researcher, who noted that currently drone journalism is not financially viable. In addition, the results inferred that this use produces a curious and expectant effect on audiences. Finally, a key opportunity to mention in terms of feasibility is the geography and architecture of Ecuador. Quito, for instance, is located in a valley, where mountains would not be a problem for coverage; furthermore, the country has few tall buildings and would enhance the safety of drones' flights.

Lastly, the threats can be divided in ethical and professional constraints. The scholars were particularly worried about the implications of drone journalism in privacy issues. They also notice the importance of having ethical procedures for reporting to avoid difficulties. Within the professional limitations, the answers

highlighted a reluctance of media owners to support new tools and how audiences might become a rival, as happens with citizen journalism products.

4.5 Who is a Drone Journalist?

At this point, to define the profile about this new kind of reporter may seem inaccurate due to the novelty of the activity. Nevertheless, some features have been exposed and are interesting to analyse. Firstly, as any kind of newsperson, the drone journalist is an eyewitness that bases his/her validity through the presence in the news scene. Drones could enhance new ways to approach a news event, creating a strong relation between journalist and craft, transforming this pilot into a cyborg with a technological bird's-eye. Another appraisal to validate the profile might be the support of media companies that would use their channels to massively expose these journalistic products.

In Ecuador, this funding seems to be -nowadays- a limitation. The drone journalism cases in Ecuador were performed by entrepreneurs or media companies, but always with the assistance of experienced drone pilots that also owned the crafts. Therefore, a key current weakness is the outsourcing of these services. No media company has decided to purchase one of these devices, putting a barrier between their journalists and this new form of reporting. The gap will be filled with more experiences and events that may impose the necessity of telling a story through aerial perspectives. At this point, however, reporters might use the time to counteract the technical limitations of flying a drone and start discussing the ethical and professional implications that may arise later. The next two chapters engage in discussions regarding these two approaches.

5. Feasibility on Drone Journalism

5.1 Introduction

Drones are an extension of the human capabilities; through them, people can mobilise parcels, patrol areas, and witness events from an extreme perspective. As displayed above some scholars argue that this condition creates a symbiotic relationship between the aircraft and its controller that may redefine some aspects of modern computing and robotics (Clarke 2014c). However, this opportunity also carries constraints regarding the legal responsibilities and the learning requirements that flying a machine demand. In this chapter, this research offers an analysis of the feasibility on drones operations for journalistic purposes.

Flying a journalistic drone should generate two main objectives: fly the craft safely and get a reportage that tells a story through this bird's-eye perspective. The first condition demands technical capabilities for both the machine and its controller, and a permanent respect for the laws and regulations regarding this activity. This second aim, although has to deal with subjective perceptions, which also faces technicalities and aesthetical conditions that lay in how the craft is built and operated. It is important to emphasise that this chapter, in addition to answer the sub research question, has the main objective to reflect the safeness of the activity. If drone journalists do not carefully handle these crafts, all the future possibilities will be exposed due to the risks that this mishandle can cause. Likewise, it is noteworthy to state that this civil usage of drones is clearly separated from militarized practices.

The sub research question corresponding to this chapter is to determine how these drone activities will be performed. This inquiry demands a compound answer. Therefore, its analysis will be complemented with the insertion of other questions related to the same topic: (1) what are the technical specifications of a drone? (2) Will drones enhance the efficiency of the cost and time of journalistic reportages?

(3) What is the regulation on this activity? And (5) what are the constraints while testing an aircraft?

To address each of these questions adequately, this chapter is divided in five parts that relate to each topic, focused on the Ecuadorian scenario and comparing it with the current literature and experiences in other regions. Due to the space and time constraints of this dissertation, this chapter summarizes the observations with succinct conclusions. This whole analysis is intended to provide a proposal of different frameworks that drone journalists may face in the future. In addition, this discussion will lead to future research on drone journalism in Ecuador. The ultimate goal is not to become an expert on the technicalities or legal limitations of drone journalism, but to deploy the activity within a safe and harmonic environment, which allows its growth and development.

5.2 Technical constraints

In 2005, the launch of the Google Maps website introduced a possibility to review and interact with aerial photographs from around the globe (Google Blog 2005). The easiness of its usage was based in the necessity of owning a computer and an Internet access point. However, regardless of how popular and useful this application has become, it is based on a third party project, with commercial and private objectives. In addition, its improvement demands high costs, regarding satellite and technological requirements. Murray and Neal (2013) argue that the importance of drone lays precisely in their practicality. In other words, how their usage provides a cheaper alternative for photographing specific areas in high resolution. Thus, the technicalities for an effective deployment of drones are based on their flying capabilities and the resolution of their cameras.

In order to understand how drones mechanically work, a key element to have in mind is the *Gyroscope*: This is a device that “can spin rapidly about an axis which is it free to alter in direction, that can be used to provide stability or maintain a reference direction in navigation systems, automatic pilots, and stabilizers”

(Oxford N.D.). This part, used for stabilization technology for maritime containers since 1896 was the cornerstone for unmanned aerial industry, allowing scientists and pilots to fly crafts and stabilise them from distance (Gibb 2013). Modern drones are based on the same principle of steadiness, in addition to radio transmitters and receivers to control the devices remotely. How complicated or advanced a drone can be will depend on its design and purpose and the money that the pilot is willing to invest. For instance, amateur guides for building drones suggest that a person will need around \$330 to construct his/her own craft, some even present an essential list of components, which is helpful to understand the parts of small drones (Build a Drone N.D) (My First Drone N.D):

- Radio Controller Transmitter and Receiver
- Multi Rotor Frame
- Motors/ Speed Controller
- Flight Controller
- Power Distribution Board
- Battery and Charger

In the case of new drone journalists, these kinds of crafts can be convenient in order to learn how to fly and control more advanced devices. However, Murray and Neal (2013) point out that one of the disadvantages the short flight time these devices can have. Batteries will last around half an hour, which can be a problem if reporters want to fly them through long distances or in events that last many hours (as riots, parades, etc.). On the other hand, the components should be light enough to allow a correct deploy. However, some cheap or hand-made aircrafts may face problems regarding weather conditions due to the fragility of their parts, as it will be explained in later sections.

Another necessity for drone journalists will be a mounted camera in order to obtain good quality images; some parts can be purchased to adapt small cameras, such as controllers to shoot the videos or photographs and memory chips to store

them. Although there are technical alternatives for achieving this, high quality images for professional results demand more sophisticated equipment, such as the GoPro® cameras, a model that is considered appropriate for media reportages (News Lab 2011) Any of these systems have broadcasting or storing alternatives to capture the images or movies that the camera produces. This is not distant to the possibility of taking photographs with a traditional digital camera.

The difficulty of building a drone due to lack of technical knowledge has lead to a growth of companies engaged in the manufacture of professional drones that offer efficient possibilities for flying and recording purposes. The French company Parrot® can be cited as one of the well known businesses in the field, especially due to the introduction of the Parrot AR Drone and its promise of fly and broadcast its images to a tablet or phone at the same time (Needleman 2010). Some scholars consider this presentation a prime moment for the development of the drone industry and the beginning of the drone journalism branch (Brooks 2012; Culver 2014; Gibb 2013; Tremayne and Clark 2014), especially due to the easiness to control it, and its quick response in broadcasting. Another case, worth mentioning is DJI Innovations®, a Chinese developer that reached worldwide recognition with its DJI Phantom model, extensively used for journalistic endeavours (Cassimally 2013). Nowadays, drone journalists can access modern crafts with specific features that will enhance their coverage, tailored to their needs and their economies.

These advances may seem distant to the Ecuadorian reality, however journalists and media companies can now purchase models such as the DJI Phantom from around \$600 (Traetelo N.D.). In addition, Ecuadorian engineers are building quadcopters for photography purposes: Jimmy Vargas, a Media Production student manufactured a drone in 2 years, spending about \$3,200 and is planning to build more crafts and commercialise them (El Telégrafo 2014). The software and hardware advances, due to globalised markets, are close to any user with the available money to obtain them.

The current diversity of journalistic drones is vast and is not necessary to deepen into the subject. However, it is important to highlight the future advances that are being developed to improve the usage of drone in the journalistic field. As the first example, researchers from Massachusetts Institute of Technology (MIT) are working in a number of progresses for these crafts, such as algorithms that enhance the autonomous flight of drones (Streams 2012) and systems to specially improve photography, by professionally illuminating the observed objects (Etherington 2014). MIT is, as shown, one of the academic centres with advanced research on the subject (MIT News N.D.). However, commercial and entrepreneurial researchers are also developing other interesting applications. For instance, Parrot® will launch in late 2014 its BeBop model, which will use virtual reality headset (Price 2014), allowing the pilot to control the craft with a realistic bird's-eye viewpoint. With this improvement, drone journalists could create a true cyborg connection with the crafts, taking decisions based on what they can sense from above. Another interesting progress was made by the start-ups The Hexo+ and the Airdog (Taylor 2014). They developed wearable devices, phones or bracers, which send signals that are tracked by the drone, which follows the user everywhere for 15 minutes without the necessity of a controller. Journalists could be part of a parade, a riot or an extreme sport and obtain aerial shootings out of it.

From all of these advances, discussions on the convenience of giving drones the faculty to control themselves will arise. Even though military or surveillance-unmanned crafts display more self-government than civil devices, they are not able to trigger and fire their guns without a human mind to command them. One thing to have in mind as Clarke (2014c) notes is to create guidelines to cope with the future evolution of drones. Particularly in topics related to their exclusive use for structured decisions that follows human rationales, clarify the legal implications of flying a drone and design contingency plans for malfunctioning or poor manoeuvring. As a final analysis, regardless the technical specifications of a drone,

its design and usage have to be aimed to secure the safety of every person involved in these activities.

5.3 Efficiency constraints

It is also important to consider the efficiency of drones in terms of cost and time. Although aerial perspectives are not very common in daily coverage, when breaking news occurs, even a single reportage will cost hundreds of dollars/pounds to the media company. In addition, renting a helicopter and embarking the photographer will affect the immediacy of the coverage. Nowadays medium and small media companies that do not possess aircrafts need to rent private or public helicopters. Ortiz comments that in Quito, there are only two helicopters, which are owned by the state and are used almost exclusively for patrol and surveillance purposes (Personal Interview, 10 July 2014). With the introduction of journalistic drones, the costs involving the renting of crafts would be reduced and there would be no “economic reason to say no” (Waite 2013).

For media corporations that own crafts, although non-existent in the Ecuadorian scenario, deploying drones will also create financial benefits. Warner et al. (1996) note that people involved in the aerial photography industry deal with Fixed Annual Costs, such as amortisations, insurance, hangarage (sic), among others; and direct operating costs, such as fuel, oil, parts replacement, etc. When compared, the purchase of a drone, that costs around \$700, in addition to its maintenance and the replacement of parts will have a lower annual fee than any other alternative.

Another aspect to consider, in terms of savings, is the little technical knowledge needed to fly drones. In helicopters, whether rented or owned, the presence of a trained and expensive pilot is required. With drones, journalists will be commanded to learn its usage and deploy the crafts as part of their reporting skills. This may generate more efficient results for media companies and greater status, and salaries for reporters with *drone-flying-recording* skills.

In terms of publication times, Tremayne and Clark (2014) notice that thanks to the portability of drones, the recording and broadcasting times will be improved. Nonetheless, Ortiz considers that even though drones will improve this aspect, the generated material will face the same constraints regarding editorial guidelines that any other photography or video: "I think that (drones) more than generating savings are a new journalistic opportunity. However, I must say I am convinced, and the facts confirm it, that the tools do not replace the journalistic content" (Personal Interview, 10 July 2014).

As shown, drones generate immediate financial results for any news organization and their low cost, in comparison with current alternatives, make them an ideal option in journalism, especially in countries, such as Ecuador, where inventiveness often fills the lack of funds. Ultimately, any activity regarding drones should consider financial aspects to obtain efficient results. Warner et al. (1996) propose a four-step decision making plan that fits with drone journalism: (1) Decide how the images will be used, to take efficient shots; (2) Estimate the size of the overflowed area, in order to save power and human energy; (3) Determine the cost that the organization is willing to invest not only in economic terms, but also in the amount of time available for a coverage; and (4) Evaluate the assets, to determine the status of equipment, preparation of journalists, and technical requirements for the reportage.

5.4 Legal constraints

As mentioned before, governmental and legal institutions are commanded to define what is a drone and what is the regulation for its usage. Journalistic drones are devices for monitoring civilians in special situations, for commercial and public opinion purposes. Therefore, discussions around privacy and surveillance will appear. Volovelsky (2014) comments that there is a stretched connection between the preservation of privacy and flying drones safely, also encouraging debates on aviation guidelines.

Clarke (2014a) proposes 6 types of control regarding drone activities: (1) Natural controls, (2) Soft regulatory forms for both organisational and industrial regulations, (3) Pre-existing generic laws, (4) aviation laws, (5) privacy laws and (6) surveillance laws. However, this scholar notes in his conclusions that formal regulations appear to be more suitable to normalise these aircrafts, over natural controls, generic laws, and soft regulatory forms. This dissertation broadly addresses some current discussions around aviation, privacy and surveillance rulings. Nevertheless, is important to acknowledge that deeper research about Ecuadorian legislature on Unmanned Aerial Vehicles will be needed in the future.

Definitions, conventions, and applications may vary from one region to another. Nowadays, Ecuador has no regulation regarding civil drones, and the usage of these crafts in terms of legal constraints. This will “inevitably make the gap even more apparent than it already is” (Clarke 2014a: 301). Eventually, Ecuadorian lawmakers must create guidelines for this endeavour and, as happens with new laws, they will observe the realities in another regions to adapt those regulations to their context. For this, it is important to analyse the Ecuadorian legal framework and compare it to other legislation.

First, to address the aviation rulings, one key institution to examine is the US Federal Aviation Administration (FAA). In 2012, this office was asked by President Barack Obama, through a Modernization and Reform Act, to integrate civil unmanned aircrafts to its regulation system (Gibb 2013). This is the first attempt around the world to create a legislature for civil drones, an initiative that is likely to be followed by other nations, and explain its importance. The final objective of the FAA is delivering in 2015 a final regulation for commercial drones, with improvements such as a change of weight control, that will allow the bigger ones, up to 25 kilograms, to fly (Brooks 2014; Wolfgang 2013). However, its key purpose is to legalize the performance of civil drones within common aerial space.

Currently, the FAA has defined Unmanned Aerial Vehicles as devices intended to fly without an on-board pilot (Federal Aviation Administration 2010). This classification does not currently include a differentiation between drones, regarding their source or size. For instance, in the Unmanned Aircraft System Operations in UK Airspace Guidance from 2010 a distinction can be found for small-unmanned crafts less than 20 kg. Although the purpose of the devices is not regulated either within the document (Civil Aviation Authority 2012). What the FAA does define is the purpose of the crafts. Under the current regulation, any activity associated with civil drones must be for leisure purposes, a gap that created some present controversies, especially around journalistic experiments.

Waite (2013) notes that drone journalists, even for research purposes, are encountering difficulties because of the FAA policies: Nowadays it is illegal to use a drone for reporting if those recordings are used in commercial platforms. "The FAA will stop you if you're at a non-profit, even if you don't have ads on the page. If there's a subscribe link or a donate button, that's enough" (Waite 2013: 10). This scholar is the head of the Drone Journalism Lab for the Nebraska-Lincoln University. In addition, Culver (2014) mentions, that people will need an Authorization or Certificate of Waiver to run experiments and be part of the test site programs of the FAA that for drones tests under an extended privacy regulatory system (Wolfgang 2013). Another example of the FAA control on research projects is the University of Missouri's Drone Journalism Program. This college received a cease letter in 2013 (Stelter 2014) restricting them from any activity that would involve field reporting, only allowing them to fly drones in a "predetermined, relatively small, contiguous space" (Pham 2013). In addition to the academic projects and their constraints, the FAA is holding some investigations and even litigations against entrepreneurs for using drones on corporate videos (Bowman 2014), weddings (CBS 2014) or filming fireworks (Hall 2014). As aforementioned, any commercial activity will be investigated and confronted until the new regulation takes effect in 2015. The current problem around this topic in

the USA can serve as a basis to draw future scenarios in other regions, where an extended use of drones will urge new laws.

Regarding the Ecuadorian case, where the Civil Aviation Administration is the institution responsible, there are scarce mentions to drones or unmanned aircrafts. Within the Civil Aviation Act (Congreso Nacional del Ecuador 2007b) and the Aeronautical Code (Congreso Nacional del Ecuador 2007a) any reference can be traced. In the Civil Aviation Regulation 101 (Dirección de Aviación Civil 2008) there is an allusion about Radio Controlled Unmanned Aircrafts, which relates also to Unmanned Rockets, with the description of some details about applicability, notification requirements and limitations of operation⁶. From these guidelines, the first two groups deal with bureaucracy procedures while the limitations of operation offer some standards that can be useful in the future of drone industry. The regulation warns users not fly their crafts:

- If this means rising the danger of colliding with another aircraft
- In controlled airspace
- Within the 9,260 m the boundaries of any airport
- At any altitude where clouds or obscuring phenomena have more than 5/10 coverage
- At any altitude where the horizontal visibility is less than 9,260 m
- Within clouds
- Within a radius of 457.20 m (1500 ft.) of any person or property that is not associated with the operation
- Between sunset and sunrise (overnight)

⁶ In September 17 2015, a year before the development of this research, the Ecuadorian Civil Aviation Administration issued the regulations for the operation of Distance-piloted Aircraft Systems. This document defines issues of distance, responsibilities, weather and physical conditions for the operation. The resolution can be found in this link: bit.ly/ReglamentoDronesEc

Another key legal document that future drone journalists in Ecuador may have to take into consideration is the Organic Law of Communication. This is a set of rulings that were issued in 2013 to control and oversee the work of journalists. The document addresses areas such as the organization of private and public media, content regulations, and the Duties and Rights of Journalists. Within the first chapter of this law, on ethical standards, it requires communicators to “Respect the personal and family privacy” (Congreso Nacional del Ecuador 2013). Although the statement is brief its repercussions pervades the document, with paragraphs focused on the right of people to replicate the media content and the possibility to accuse journalists for “media lynching” of a person. This guideline will regulate on privacy rights and their relationship with the media, regarding any technology or device that may be used to obtain footage.

Clarke (2014a) explains that drones will especially raise the threats to data privacy, where the collection, storage, and interception of data may become future constraints. He also notes that the capacity of patrol people will be enhanced through these crafts. The extensiveness, intensity, errors, or paranoia that their usage may cause are just some future problems that not only the media, but also the state will have to deal with. Currently, Ecuador may seem far from having discussions on personal privacy matters as some other regions like USA, with the NSA scandal, or the UK, with systems such as the CCTV. However, drone journalists have to recognise the importance of the legal knowledge about any future problem that can be attached to their activities. The legislature on drone journalism is still novel and this gives journalists a temporary advantage.

5.5 Experiment with a basic aircraft

To obtain a closer perspective of the possible limitations and opportunities that future drone journalists may face, an experiment was held to test a basic aircraft around populated and unpopulated areas. Due to the fragility and the simplicity of the craft the test focused more on the surrounding conditions than in the flying-recording objectives.

5.5.1 Durability

For the experiment, a Mini Helicopter U13A Camera was purchased in £60. The Mini Helicopter endured crashes from small and large heights without damaging any mechanical or technological parts. This durability was the key feature to acquire this type of craft instead of a quadcopter model. The solid body of the helicopter suffered scarce damages caused by the flying learning curve.

5.5.2 Characteristics

The craft has a 2.4Ghz transmitter that creates a stable link to the controller to operate it from tens of meters. Another key aspect is its rechargeable on-board Li-Po battery, which allows the user to recharge the craft, instead of replacing the batteries as it occurs with other models.

Figure 7: Side view of the Mini Helicopter U13A Camera



For recording purposes, the controller has two buttons. One is for shooting videos and the other one for taking pictures. In addition, the model comes with a built-in 3 Megapixels camera, which stores the data in a Micro SD card slot, also included in the device. Although the quality of the images does not meet the standard for journalistic material, for early experiments this works properly.

Figure 8: Radio Controller of the Mini Helicopter U13A Camera



5.5.3 Constraints Encountered

The experiment was carried out on 6, 12 and 18 June in Edinburgh, UK. The first two trials were performed in The Meadows Park, while the third test was held in Arthur's Seat western foothill.

Figure 9: Video still from the first test in The Meadows Park



Figure 10: Video still from the second test in The Meadows playground



Figure 11: Video still from the third test in Arthur's seat foothills



Power Limitation

The first constraint that appeared was the power limitation of the craft. While the transmitter displays the status of its batteries, the helicopter has no indicator screening its power supply. During various take-offs and flights, especially after twenty-minute periods, the drone lost power to start the airlift or suddenly felt, without offering any response to attempt a landing. More advanced drones, like the DJI Phantom, have systems to alert the user about a lack of power and in

emergency cases the drone can land itself (Da-Jiang N.D.). The limitation of power supply is an issue that drone journalists have to contemplate; recording an entire race; parade, or riot may not be the appropriate scenario for these crafts. Instead, until the development of better battery life, the coverage may be focused on short-term events or specific parts of major news events.

Safety

The second constraint displayed was the importance of safety. The presence of an aircraft, in a populated area, caught the attention of some people and disturbed them. The first trial was held in The Meadows Park at 11:00 AM, with dozens playing and resting on the grass; even though the take-offs were performed within a safe area, approximately 200 meters of any person, the sound of the helixes alerted them about the experiment. During the flights, wind moved the craft countless times and made it difficult to keep the helicopter within the safe zone. After some landings and crashes, some of the people in the park decided to move away from the *take-off zone*, showing their annoyance about the test. It is fair to remember that in Ecuador, a safe flight for aero modelling activities has to respect a radius of 457.20 m away from any other person.

The second test was performed around 6:00 AM on 12 June and in the same area, due to the hour, there were no people walking or playing in the park. On the other hand, the third test held on the 18th of June at 12:00 PM was performed hundreds of meters from urban routes. These two tests went by without any complications regarding the safety of people, objects, or the craft itself. Although the simplicity of the device was a key reason for its unmanageability and the potential risk that would have caused, *professional* drones also need to be tested in isolated areas for first tests, as noted above the FAA designed six test sites, in Alaska, Nevada, New York, North Dakota, Texas and Virginia, for the development of controlled drone experiments (Bowman 2014). New drone journalists must take this into account when they learn how to fly their crafts.

Weather conditions

During all three tests, weather conditions were the prime feature that affected the flights. Rain and wind caused malfunctioning and several crashes to the mini helicopter, even though the forecast for those days reported wind speeds around 7, 9 and 12 km/h (Weather Underground N.D.). Wind modified the planned trajectories during flights and challenged the circumstances for a safe landing. The craft could not endure the weather, especially due to its lightweight. *Professional* drones possess harder and heavier bodies that can stand opposite weather conditions: However is noteworthy that drone journalists may face difficult settings during a reportage, during heavy rain or extreme conditions the usage of drones may become more problematic than useful.

Quality

The final constraint lays in the characteristics of the camera. Although a 3 Megapixels device cannot be considered deficient, for journalistic purposes, and considering the current possibilities for video and image recording, the obtained resolution can be labelled as amateur and unsuitable for the standards of a media company or product. While the storage was a plain and easy-to-follow procedure and the edition of images can be performed in any video or photo editor software, in order to obtain more professional images, better equipment should be used. Future drone reporters may test not only the crafts that will be used, but also the cameras that will be mounted in the aircrafts to measure the quality of images and the easiness to store and edit them.

After three tests the conclusion was evident. The Mini Helicopter is indeed an unmanned aircraft that can be remote controlled and gives the possibility to record images and videos, but cannot be considered a drone for journalistic activities. This type of aircraft may be used to learn the basic aspects of flying radio controlled devices, but when journalists will need a bird's-eye perspective they will need to purchase an advanced model that give them less constraints in terms

of battery life, durability, camera quality, and, above all, safety for the journalist and for the subjects that are being watched.

5.6 Is feasible to fly a drone in Ecuador?

To summarize about the different constraints that journalists may face while attempting to use drones for reportages and to respond the sub research question: How will these drone activities be performed? Is important to stress the importance of safety. The main concern, above technicalities, legislation, or efficiency will be creating a reliable activity, which then deals with another limitations that may rise. Any guideline has to be aimed to avoid any type of physical or moral harm.

To start answering the question within the Ecuadorian context, it is fair to say that technology devices are ubiquitous commodities and due to international retail companies, any device can be purchased worldwide. The drawback may be financial since media managers are likely to be the ones to face it first instead of journalists. Although it was shown that drones could be considered a tool to reduce costs and time, turning drone reportages into efficient responses to actual aerial coverage is a type of reporting difficult to be performed in Ecuador nowadays.

On the other hand, the current legislation in Ecuador is insufficient to regulate drone activities. Possibly in the future, lawmakers will have to create guidelines, adapting foreign rulings to establish a legal scenario for these crafts. In the meantime, journalists can take advantage of this legal gap, running experiments and covering some news. However, these tests have to meet technical and technological standards in order to complete safe flights. Besides legal limitations, journalists have to consider constraints regarding ethical procedures, such as the respect for people's privacy. This deontological debate will be addressed in the next chapter, the last in this discussion.

6. The Newsworthiness and Ethics of Drone Journalism

6.1 Introduction

As discussed previously, drone journalism will open possibilities for more vivid coverage through perspectives never seen before. On the other hand, it will generate ethical constraints for reporters. These dilemmas are not new for journalists; reporters are often seen as watchdogs of governments, institutions, and organizations, serving the public interest (Culver 2014). However, they can also be scrutinised in terms on ethical implications. Eyewitnessing provides a significant power and legitimacy, but as Liebes and Kampf (2009: 247) note, reporters are tempted to take “the most dramatic picture, showing the most authentic gesture, airing the hardest-to-get voices, and performing the most elusive live actions” to attract more audiences, sometimes at all costs. The statement of Liebes and Kampf was related to the internal struggle of war reporters, but can be used for any type of journalism. Privacy, balance, and honesty are expected attributes no matter what branch or tool newsmen use. In fact, David Wolfgang cites Kelly McBride, a Media Ethicist from the Poynter Institute, who says that “technology never raises new questions; it always raises old questions in new frameworks” (Wolfgang, 2013: 24).

To study the ethical implications of drone journalism implies studying the repercussions of journalism itself under new paradigms. This section aims to generate a possible answer for When, Where, and Why journalists should use drones. Given that the results have to do with moral conditions, the observations cannot be contemplated as final views, but as ridges for further discussions and research. In addition, an Ecuadorian news event will serve as an example to understand, in a local context, the conditions to deploy journalistic drones.

6.2 Ethics of drone journalism

Gynnild (2014) labels the use of aircrafts for news coverage as *Robot eyewitnessing*. He uses this designation to support the idea of obtaining unbiased

reportages through authentic and automated recordings, thanks to the absence of human subjectivity. For him, the robot perspective will produce footage that can be neutral and fair. However, as stated above, the relation between journalist and drone seems to have symbiotic characteristics and depends on the human mind to control the contingencies. Clarke (2014a) also supports this importance when noting how the pilot must be held responsible of any consequence, whether legal or ethical caused by the drone. In addition, Culver (2014) also emphasises that the moral responsibility should not be focused only in humans or machines separately, but on the mixture of both.

Holmes et al. (2013: 270) suggests that even though countless codes have been written on journalistic spheres, some common ethical issues can be related to commitment to readers, accuracy, verification of information, honesty, and the right of people to be informed. Meanwhile, Phillips et al., (2012) with a neo-Aristotelian approach mention three attributes as the ethical foundation of journalism: accuracy, sincerity and hospitality. Finally, and with emphasis on drones, Culver also suggests a typology of ethical considerations in journalism through four aspects: safety, accuracy and context, privacy, and conflict of interest.

From these three appraisals, their similarities and differences, the four ethical issues can be proposed as the aspects that drone journalists should consider during the whole process of the deployment of the crafts within coverage endeavours: openness, accuracy, transparency and privacy. The first two issues deal with the way in which news is presented. Transparency is based on how journalists portray themselves. And privacy is related with the relationship between reporters and audiences during the coverage.

a. Openness

This quality is related to the commitment that media has to guarantee to any audience regardless of their differences about history, religion, or values. Phillips et al., (2012) notes that journalism is a sphere where people

gather to find a common identity. Under this statement, drone journalists are commanded to communicate their findings during the flights and fulfil their role as social watchdogs.

b. Accuracy

Holmes et al. (2013: 271) point out that telling the truth and keeping a discipline for verification are intrinsic obligations for reporters. Culver (2014) uses the example of a protest to illustrate this quality as the images taken during a riot may help measuring the amount of participants. However, to understand their objectives and background, the event should be contextualized with more information and sources. Drone journalists must describe the whole situation where the images were recorded to obtain a reliable story.

c. Transparency

This is a virtue that is constantly demanded by audiences and authorities and it has changed during the last decades due the emergence of technology. Phillips et al., (2012) refer to transparency in the digital age. Drone journalism has to be able to develop their coverage with high standards in order to enhance the levels of accountancy. In other words, journalists have an innate responsibility to back up, both legally and ethically, the issues related to their performance.

d. Privacy

Perhaps privacy, related to surveillance issues, is the ethical constraint that faces deeper discussions and has been addressed with specific research on the subject (Macnish 2014; Smith 2014; Soderlund 2013; Volovelsky 2014). An interesting approach is given from Tremayne and Clark (2014), as they make a distinction that privacy depends on the observer. The authors mention that surveillance has to be related to authorities watching regular people while sousveillance is the action to record events without being part

of any establishment organisation. In the end, both practices face privacy issues, with *intrusion* as the key element. This element refers to the way information is assembled and the respect for personal and private space that reporters may or not have. Culver (2014) notes that being aware of “a person’s desire to be left alone, even in shared spaces” is an ethical constraint that reporters have to calculate in the field.

After all these considerations, this calculation referred above is the key to an ethical discussion of any journalistic performance. In the field, reporters will face important events that must be covered even if that action breaks some legal or ethical guidelines. Some journalists will deploy drones to have the exclusive and beat the competition (Tremayne and Clark 2014). Others will state that not covering them would be against their promise to approach their reportages with impartiality (Culver 2014). As shown, the quandary of newsworthy versus ethics does not have a permanent solution and will differ from case to case. In the next part, an Ecuadorian event is used as a case to face ethical constraints and understand how drones might transform the way news can be covered in extreme scenarios.

6.3 Police Insurgency Case

On 30 September 2010, Ecuadorians witnessed a police rebellion that involved demonstrations, clashes, shootings, and retention of the President of the Republic within a Police Hospital in Quito. As Rory Carroll described in his chronicle for The Guardian, this uprising transformed the surrounding areas from a health centre into a battlefield, where military and police exchanged fire and caused several deaths (Carroll 2010; The Guardian 2010).

During these events, that lasted all day, social media became the scenario for report and discussion to observe, given that all the information was centralized on the national public broadcaster ECTV (Rivera and Salgado 2014). At night, while the President was rescued from the hospital where he was kept, private TV

stations recovered their broadcasting privileges and were able to display the crossfire and showed the death of a soldier within the rescue unit while some of the reporters stood a few meters from the shooting, risking their safety in order to get the exclusive footage.

All of these disruptions caused many consequences, such as persecutions on the policemen involved in the rebellion (Vega 2013), consolidation of the presidential image and analysis about the institutional strength (Corcoran 2010), and articles about the media crisis of that episode (De la Torre 2011). Within the country, the actions from that day, referred to as 30S by the media and the government, are usually evoked as one of the most dramatic event of the last decades. For example, Susana Morán was one of the journalists that arrived to the Police Hospital and got caught in the crossfire. When men in uniform were shooting at each other she hid in one of the restrooms to avoid the bullets. At that time, Susana was a newspaper reporter and with no more equipment than her smartphone she managed to tweet her impressions and images, which gave her massive notoriety among Ecuadorian users. At the end, she was unharmed and the experience generated her professional recognition (Fundamedios N.D.).

As shown, the 30S is a useful example to discuss the suitability of drones during events where reporters would still cover news without risking their safety. Morán notes that the crafts would not have made a difference during the crossfire due to the danger of the event, but on the other hand they could have been used to record complementary perspectives:

"There were snipers and many incidents happened with journalistic equipment such as cameras, cell phones or recorders. A drone would surely cause distrust. It may have been necessary to build map with points of interest and record the city from the sky... I wonder: How Quito looked without transportation, immobilised, empty?" (Personal Interview, 8 July 2014).

Events like 30S raised the discussion amongst journalists on how newsworthy events might exceed ethical limitations. If drones had filmed the incidents, reporters would have encountered the four ethical constraints aforementioned. (1) The ulterior goal of journalist would have been to record and broadcast every take to inform citizens. The tone would have depended on how each media had covered the news. In Ecuador, private media and public media have a different and contrary discourse, each one with followers and detractors. (2) From an accuracy matter, as Moran mentions, the footage could be part of the whole narrative, adding more perspectives. (*For the complete set of questions and answers, please refer to the appendix 7*).

However, for (3) transparency and (4) privacy consequences in this case, drones may seem more difficult to adopt. The protesters and the general public also would have felt the distrust that Moran notices from policemen in the presence of crafts. People's confidence had been compromised; flying cameras could have been interpreted as an act of surveillance and repression. Drone journalists have to be prepared to socialise their goals with the public, educate about the purposes of these devices as this transparency might lead to an understanding and trust among audiences.

Journalists have to foresee scenarios like the one described above in order to create guidelines and manuals on when, where and why to use drones. Editors and reporters should start thinking about the possibility of owning a craft and create possible uses for it. The ethical appraisal, as in any journalistic activity, will always present constraints, but if reporters manage to plan the usage of drones, these tools can enhance and improve different types of coverage, and technology will serve as a dependable ally.

7. Limitations and Future research

7.1 Limitations

It is important to acknowledge some research constraints that have affected the development of this dissertation. The most important was the lack of previous research in the field in the Ecuadorian context. As shown, some experiments are being done, but behind some reports there is not a sustainable logic. Media companies and journalists are testing crafts without a sense of creating a new branch or scope within their products. Ecuadorian academic spheres are commanded to recognise this gap and start investigating the implications in various fields.

Another interesting limitation has to do with the amount of new data of the topic in a global scale. Drones are currently a trend and people, not just journalists, are gathered around the idea of capturing events. For instance, Dronestagram collects hundreds of uploaded images from users who do not have any other goal that share with others their hobby (Dronestagram N.D). For this research, the scope had to be narrowed, leaving behind valuable data under other context.

7.2 Future research

From the limitations some hints can be traced for proposals of future research. Since people are using drones as a hobby, a study on the reasons for this embracing could lead to some interesting insights on feasibility, surveillance, sousveillance, and privacy.

Another aspect that presents a further path is the legislation for the use of drones in Ecuador and in other regions. Some criticise the FAA for adapting pre-existing laws to try to regulate the use of drones (Levin 2014). This technology is creating new opportunities and ideas, the same originality is expected from the lawmakers that will try to normalise a reliable activity. Finally, future research has to be aimed into the technical possibilities of drones. Sensors, GPS, or augmented reality are only few of the current alternatives to enhance this activity. Robotics, Artificial

Intelligence, and other modern fields can be linked to projects that will keep transforming drones.

8. Final observations

The people interviewed for this dissertation received a final and common question: If you had a drone right now, what would you cover? The answers were wide-ranged, from the flight of an eagle or the park where the family used to play to riots or areas with oil leaking issues. Drone coverage can be as diverse as the human mind can imagine it to be.

Even though the willingness of trying new things is ever present, through this dissertation a question was intended to be answered: Is Ecuador prepared to deploy drone journalism? A reliable response goes beyond a plain *Yes* or *No*, various attributes have to be apparent to acknowledge an acceptable standard for the use of journalistic drones.

First, it is key to understand the importance of having drones for specific objectives. The difference of crafts used for leisure or recording news might seem obvious, but in order to analyse the whole activity this aspect needed to be clarified and comprehend what is a drone and what is not. From that, the profile of the drone journalist generates some important insights; reporters need every tool available to remain as the witnesses of history. For them, a proper use of drones will provide new perspectives and alternatives to validate their business. Regarding the Ecuadorian context, it is noteworthy the gap that exist for reporters that have to rent or borrow aircrafts to start experimenting. It was displayed how Ecuadorian drone journalists are still far from having these devices within their newsrooms.

How a drone can be used, was also a question that generated various observations. The prime focus was stressed on the importance of safety, before any other constraint. After showing how the technical and efficiency aspects were

determined by a globalised society, another crucial aspect was the legal future of drones, with emphasis in the Ecuadorian legislation. Through a review and comparison of other legal frameworks it was clear that nowadays Ecuador has a legal hole for this matter, and that will serve as an opportunity for journalists to practice and develop the activity with less limitations than in some other regions. Finally, the section regarding ethical constraints raised more questions than answers. Nevertheless, it clearly displayed that drone journalism is not distant from other kinds of reporting in terms of accountability. The four ethical aspects proposed in this dissertation: openness, accuracy, transparency, and privacy were also useful findings that can be valuable in further research.

Is Ecuador prepared to deploy drone journalism? It seems the answer is the empowerment that Ecuadorian reporters and academics might develop the next few years. The tools are quite close to their hands, but learning how to fly them cannot be the beginning. Before that, discussions and actions have to be well explored. The final goal cannot be just watching people through a bird's-eye perspective, but doing it in a trustworthy and innovative way.

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