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Vertical and panoramic views: a new vocabulary of drone shots in cinematography

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ABSTRACT

This study aims to reveal how drones have entered the language of film, which essentially means how drones can contribute to new vocabulary in cinematography, especially regarding the type of shot in camera angles, and framing. This study uses a qualitative approach with a post-phenomenological descriptive analysis method developed by Don Ihde. The data presented are moving image documentation produced by drone technology in twelve documentary films from the *Ekspedisi Indonesia Biru* series, each lasting approximately 50 minutes. The observation results of the number of drone shots analyzed in this study totaled 193 (one hundred ninety-three). The analysis process was then compared using Bordwell, Thompson, and Mascelli's theory to conceptualize film vocabulary as formal and stylistic techniques used in drone cinematography in the twelve documentary films of *Ekspedisi Biru Indonesia*. Two important findings were identified based on indicators not found in the basic rules, vocabulary, and cinematographic language practices that have become industry standards. First, two new words were found in the drone camera angle variable: Vertical and Panoramic. Second, in the framing variable based on size and distance, drone cinematography language still refers to cinematographic grammar practices established in a global consensus. The striking difference lies in the height of the camera position, which has become a distinctive visual style of drone cinematography. Further research is needed to develop drone technology to realize new linguistic efforts, particularly from the perspective of camera movement, which challenges the dominance of existing film language. In the future, drone technology will incorporate more advanced artificial intelligence algorithms to enhance real-time camera movement maneuvers and add non-human factors such as energy efficiency, collision avoidance, flight restrictions, and bandwidth improvement.

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1. Introduction

The widespread use of images taken by drones, or remotely controlled unmanned aircraft, in film has become inevitable in film production. The basic argument in this study is that drones are considered capable of capturing moving images that are unreachable by humans using conventional methods, and enable the creation of cinematographic language as an important element in the medium of film. A report by Goldman Sachs indicates that the drone market attained a total value of $100 billion in 2020 and is demonstrating annual growth that exceeds 15% [1], In addition, a report from Grand View Research shows that this segment accounted for approximately 29% of the total commercial drone market in 2023, highlighting drones' important role in the film industry [2], [3]**.** In May 2022, the Federal Aviation Administration (FAA) reported that approximately 37% of drones registered in the United States, amounting to

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316,075 out of a total of 855,860, were used for commercial operations, including film [4]. In Indonesia, there has been a notable increase in the utilization of drones for documentary film production. Subagyo found that 42% of documentary films were produced using drones, according to data obtained from Airnav Indonesia, the country's primary provider of flight navigation services [5]. Gibb notes that Aaron Brodie, a freelance journalist and CNN producer, produced one of the earliest documentaries to utilise camera-equipped drones to record the destruction caused by an EF4 tornado in Tuscaloosa, Alabama, in April 2011 [6].

This cinematic phenomenon illustrates that the drone era has commenced, with contemporary cinema now entering an age characterized by the use of drones [7] [8]. Viewing and showcasing space or objects from an elevated perspective is gaining prominence as unmanned aerial vehicles (UAVs) are perceived as a means of introducing a novel dimension to the portrayal of reality [9] [6]. Conversely, the process of image capture has become more streamlined and portable. High-resolution images have become a tangible and cost-effective possibility for most filmmakers. Documentarians have also leveraged the accessibility, affordability, and ease of use of these devices to their advantage. The emergence of drone technology has transformed visual perception and aesthetic appreciation in cinematography. Drones offer unprecedented visual perspectives and prompt a reconsideration of the symbolic implications of modern imagery. For example, the work of Grayson and Mawdsley shows how drones symbolize the reconfiguration of contemporary warfare, significantly influencing visual culture by altering perceptions of space and conflict [10]. These changes have also extended to the realm of art, as emphasized by Malone and Braeunert, who highlight how drone imagery in contemporary art challenges and expands traditional visual narratives, forming a new vocabulary in cinematic expression [11]. In addition, films like *Eye in the Sky* and *Good Kill* prompt critical reflections on military masculinities and ethical implications of drone warfare [12] [13]. Furthermore, the integration of drone technology in journalism has introduced a new point of view and operational efficiencies in aerial filming, transforming how stories are told [14] [15]. Thus, drones are not merely tools; their use in specific contexts prompts a reevaluation of traditional cinematic techniques and represents a transformative power that sparks a new visual language in how we perceive the world.

Emerging studies on the cinematographic vocabulary of drone technologies can be classified into three significant areas. Firstly, some research focuses on the aesthetic integration of drones in film, highlighting how they create visible patterns in cinematography that blend machine technology with human artistry [16], [17]. This shift not only reshapes the visual narrative but also introduces new dimensions of storytelling. Secondly, drone-generated imagery is viewed as a structured representation of realities that standard human perspectives cannot easily access, thus expanding the viewers' understanding of space and perspective [18] [19]. These visual techniques represent a new medium and a new mode of perception in storytelling. Lastly, the ethical implications of drone usage in film are increasingly examined. This involves fostering critical awareness of life patterns concerning privacy and surveillance [20]. Across disciplines such as film studies, photography, and journalism, it is crucial to develop frameworks that address these ethical challenges while enhancing the artistic potential of drone cinematography. Regrettably, there is a paucity of information regarding the academic advantages of drone images in film. Indeed, this information can serve as a foundation for filmmakers in determining perspectives, methods, and techniques to enhance the aesthetic quality of their film works. In light of the shortcomings above, several main issues were identified and became the focus of the research. These were operationalized with the following question: How can the practice of drones construct cinematographic vocabulary in the documentary film *Ekspedisi Indonesia Biru*? This research establishes an area where the issue of drone views in cinematography science meets each other by interpreting each type of shot in drone language, examining its function and meaning variables, and naming drone languages as aesthetic findings. The visual data analyzed in this study are twelve documentary films from the *Ekspedisi Indonesia Biru* produced by Watchdoc. The analysis method was carried out through a selection process of drone images, then interpreting their meanings and categorizing them based on vocabulary, basic rules, and cinematographic grammar practices established in standard cinema industry practices. The types of shots were selected based on framing size, camera angle, and camera movement, then

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interpreted for their denotative and connotative meanings about the possibility of finding new vocabulary in drone cinematography language. Camera angle and camera movement, then interpreted their denotative and connotative meanings about the potential discovery of new vocabulary in drone cinematography.

The material object of this research is the utilization of moving images captured by drones in twelve documentary films produced as part of Expedisi Indonesia Biru by Dhandy Laksono and Suparta Arz. The films are *'Baduy'*, *'Kasepuhan Cipta Gelar'*, *'Samin vs. Sem'*, and so forth. The films include "*Baduy*," "*Huhate*," "*Lewa in Lembata*," "*Kala Benoa*," "*Asymmetrical*," "Boti," "*Sexy Killers*," "*Made in Siberut*," "*Gorontalo Baik*," and the concluding film, "*The Mahuzes.*" The selection criteria for the twelve documentaries produced as part of "Expedisi Indonesia Biru" were based on the unique cinematography created by drones in the films. Almost all of the Expedisi Indonesia Biru documentaries use images captured by drones to open the film. The rationale behind the decision to examine *Ekspedisi Indonesia Biru* as a case study in the cinematic phenomenon of drones is based on the premise that the documentary film, created by the duo Dandy Dwi Laksono and Suparta Artz, exhibits a distinctive cinematic quality shaped by the use of drones in its production. Joseph M. Boggs defines the term 'cinematic' as a 'living picture'– a fusion of images, sounds, and moving images possessed of a compelling urge to eschew all that is silent, still, and static [21]. Secondly, the utilization of drone cinematography in the production of documentary films is regarded as a means of enhancing the lexicon of film imagery, which constitutes an essential component of the filmmaking process. In *Ekspedisi Indonesia Biru*, drone cinematography as the opening scene in many segments immediately highlights the film's cinematic quality, which aligns with Boggs' definition. The transition from an intimate to a wide angle reflects Boggs' concept of "living images," as it combines movement and visual richness to avoid boredom.

Cinematography may be considered a language in its own right, with a vocabulary and visual elements structured analogously to a language. Roy Thompson posits that film grammar is a structural framework comprising fundamental rules and conventions, including diverse types of shots, angles, camera movements, and all visual elements present in a film [22]. In this documentary work, the meaning is manifested in the shots, designed to give meaning, thus creating a 'living imaging'. Living Imaging is an analogy researchers draw between cinematographic facts in the form of shots in a film. This means that each shot is designed as a process of giving meaning, thus becoming a "living imaging." A shot is defined as a unit of image recording, commencing from the moment the camera button is pressed until it is released. The use of shot drones that become markers will form an expression of the continuity of film ideas, and they possess unique markers or particular forms whose combinations can produce meaningful visual speech and reconfigure the grammar of cinematography. Roy Thompson's framework suggests that film grammar, which includes types of shots, points of view, and camera movements, operates according to consistent principles that facilitate the formation of meaning in film [19]. For example, in drone cinematography, certain types of shots, such as aerial views or tracking shots, can function as metonymic representations, conveying broader concepts through visual elements explored by Feng in his research on visual grammar and metonymy [23]. Applying Kress and van Leeuwen's visual grammar in evaluating cinematic visuals emphasizes how camera movement and placement influence audience interpretation. However, its primary focus is visual texts in contexts other than strictly cinematography [24].

In practice, drone cinematography demonstrates how directors can manipulate camera paths to mimic stylized visual narratives, which requires adherence to rules of composition and movement [25]. This art form leverages advanced algorithms and machine learning techniques to optimize shot selection and camera movement, highlighting the structural rules in the director's decision-making process [26]. Integrating drone technology in filmmaking opens up new opportunities and challenges that enrich the vocabulary of cinematography. In linguistic terms, the elements that make up a film are represented by the cinematographic style of drones, which refers to the basic rules of formal grammar. Bordwell notes that style is what creates "look and feel," how a film can organize its chosen techniques in a consistent manner. These patterns of technical choices are called style [27]. Additionally, Roy Thompson states that film grammar is the structure containing the basic rules and conventions of various types of shots,

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camera angles, camera movements, and all visual elements within a film [22]. In this study, stylistic elements focus on analyzing drone shot types in framing and camera angles in 12 (twelve) documentary films from the *Ekspedisi Indonesia Biru*. Although various interpretations and conclusions regarding film language exist, language standardization is never rigid [28]. This is because advances in cinematographic technology, particularly in drone technology, can produce new techniques read as approaches to capturing and translating reality [29]. Thus, there is always a drive to present new linguistic efforts that challenge the dominance of existing film language. Therefore, this study contributes to uncovering how drones enter as a film language, which means that drone cinematography can become a new vocabulary in cinematographic language.

2. Method

This study uses a qualitative approach with a post-phenomenological method developed by Don Ihde. Referring to Santosa Soewarlan, qualitative research that investigates art can be obtained from two sides, namely the art itself and the context that surrounds and brings it to life [30]. Text is defined as an expression of language that has content and form, conveyed by a sender to a receiver to communicate a specific message [31]. In other words, film is considered equivalent to language, so the approach used to analyze it in this study is the same as that used to analyze language, namely, the textual approach. Phenomenology is a term used by Ihde to provide reasoning about the role of instruments central to seeing and understanding the world [32]. In this study, *drones* are considered objects that construct sensory reality, which is interpreted perceptually-hermeneutically. Reality is reduced to drone cinematography through which it manifests itself. Thus, drone cinematography in the *Ekspedisi Indonesia Biru* documentary is treated as a text interpreted through changes in perceptual experience caused by drones, ultimately revealing new characteristics and techniques of documentary reality. The data used in this study is qualitative data, presented in moving image documentation produced by drone technology into twelve *Ekspedisi Indonesia Biru* documentary films, each lasting approximately 50 minutes. The observation results of the number of drone shots examined in this study were around 193 (one hundred and ninety-three). The data collection techniques used in this study were carried out in several stages, namely: *First*, through observation, in this case by watching the twelve *Ekspedisi Indonesia Biru* documentary films at least four times: the classification and segmentation stage, the drone shot selection stage, the meaning description stage, and the illustration stage*. The second stage* involved analyzing the drone visual data in this dissertation, which consisted of twelve documentary films from the *Ekspedisi Indonesia Biru* series produced by Watchdoc. After the data was collected, the images captured by the drones were selected, interpreted, and categorized based on vocabulary, basic rules, and cinematographic grammar practices established in standard cinema industry practices. The *shot* types are then selected based on the framing size and camera angle, and their meanings are interpreted in terms of the possibility of finding new vocabulary in the language of *drone* cinematography.

Data classification is carried out through a pre-analysis of film sequences, which inherently involves a cinematographic approach by grouping images into shots according to their order of appearance in the film. The same is done for other elements accompanying the images produced by the drone. Each scene is analyzed from a cinematographic perspective by tracing the shot as the smallest unit supporting meaning. The data analysis method used in this research employs descriptive post-phenomenological analysis through variations of hermeneutic relationships. This means that the drone camera, which manifests itself as a shot, is read as a text that needs to be interpreted in the twelve *Ekspedisi Indonesia Biru* documentary films. The practice of the analysis method in this study can be arranged as follows: The practice of using drones in the documentary film *Ekspedisi Indonesia Biru* is mapped into more segmented elements through sequence analysis, Selecting drone images in the entire *Ekspedisi Indonesia Biru* documentary, Categorizing drone shot techniques in the EIB documentary based on the variables of shot type, namely framing and camera angle, Interpreting drone shots through two levels of meaning, standard meaning through denotation and changing meaning according to context through connotation. The analysis process is then compared using theory (elements of the shot), concepts (cinematographic, film language), methods (posphenomenology), and basic rules

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(element of the shot, framing, camera angle) relevant to the issues discussed to validate the data against the emergence of new vocabulary based on indicators that are not present in the basic rules, vocabulary, and cinematographic language practices that have become standard industry practices. Thus, the chosen method becomes a model for practical thinking in drone technology for producing film language, generating a new vocabulary of signs in drone cinematography as an aesthetic discovery.

3. Results and Discussion

3.1. Drone shot in Documentary Film *Ekspedisi Indonesia Biru*

This section will explain how drones are integrated into cinematographic language, which involves configuring drone cinematography into a vocabulary in cinematographic language. In linguistic terms, the elements that make up a film are represented by *drone* cinematographic styles that refer to the basic rules of a formal grammar system. Roy Thompson states that film grammar is a structure containing the basic rules and conventions of various types of shots, camera angles, and all visual elements in a film. This means that the "vocabulary" of film includes the standard types of shots and camera angle techniques that form a common language among filmmakers [22]. Thus, the pattern of technical choices called style [27] is relevant in viewing interrelated and interdependent variables based on Roy Thompson's elements of the shot [22]. Starting from the type of shot, which considers how images are captured by a drone camera, taking into account the basic rules, vocabulary, and practices of cinematography that have become standard industry practices for comparing existing vocabulary. Then, the frame of reference and comparison instrument for existing vocabulary is based on the concept [33], namely: First, Camera Angle, which refers to the position and orientation of the drone camera when recording. Second, Framing refers to how the elements in the shot produced by the drone are arranged and framed in the visual composition. Thus, Bordwell and Thompson's theory will be used to conceptualize film vocabulary as formal and stylistic techniques used in drone cinematography in twelve Indonesian Blue expedition documentary films. Cinematographic elements have been specifically categorized based on the moving images produced by drones at the smallest unit in a film, namely shots in twelve documentary films of the Blue Indonesia Expedition. A shot is defined as an event recorded by film without interruption, starting when the record button on the camera is released and the film stops running in the camera [34]. The resulting material was analyzed through several variables that facilitate the formation of meaning. Cinematographic elements have been specifically categorized based on the moving images produced by drones in the smallest unit of film, namely shots, in twelve Indonesian Blue expedition documentaries. This analysis was conducted to ascertain whether the vocabulary employed in drone cinematography exhibits new signifying characteristics. Table 1 illustrates the number of drone shots that have been examined, the total duration of the film, the number of segments, and the film's title in the two Ekpedisi Indonesia Biru documentary films.

Tabel 1. Drone shots in the documentary film *Ekspedisi Indonesia Biru*

Film Title	Production Year	Film Duration	Segmentation	Number of Drone Shots
Lewa di Lembata	2015	00:42:37:24	9	9
Kala Benoa	2015	00:50:21:20	10	15
Baduy	2015	00:26:31:10	11	5
Samin VS Semen	2015	00:39:25:03	8	10
Cipta Gelar	2015	00:44:36:03	6	12
Gorontalo Baik	2017	00:42:08:13	8	2
Huhate	2017	00:38:19:16	5	7
The Mahuzes	2017	01:24:59:21	18	2
Made in Siberut	2018	00:44:49:13	5	9
Asimetris	2018	01:08:19:23	23	47
Boti	2018	00:43:33:20	7	4
Sexy Killers	2019	01:28:55:08	27	71
Total Drone Shot				**193**

A detailed examination of the *Ekspedisi Indonesia Biru* documentary films has revealed that drones recorded 193 shots. Each film contains a variable number of drone shots, with the Baduy

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film featuring five drone shots, resulting in 11 segments. The Samin VS Semen film has ten drone shots distributed across eight segments. The Kala Benoa film has 15 drone shots divided into ten segments. The *Kasepuhan Cipta Gelar* film comprises 11 drone shots distributed across six segments. The *Sexy Killer* film features 71 drone shots organized into 27 segments. The Boti film incorporates four drone shots distributed across seven segments. The Asymmetric film incorporates 47 drone shots distributed across 23 segments. The Made in Siberut film incorporates nine drone shots distributed across five segments. The Huhate film incorporates seven drone shots distributed across five segments. The Mahuzes film incorporates 24 drone shots distributed across 18 segments. The Gorontalo Baik film incorporates two drone shots distributed across eight segments. The Lewa in the Lembata film incorporates nine drone shots distributed across nine segments. A review of the categorized data reveals that the film *Sexy Killer* employs the most drone shots, with 71 instances. Conversely, the film Gorontalo Baik utilizes only two drone shots.

3.2. Vocabulary for Cinematography Drone

The results are analyzed according to the categories of drone shots based on the existing vocabulary, basic rules, and practices of cinematographic grammar that have been confirmed by global consensus about the concept of Type of Shot in the form of *Framing* and *Camera Angle.*

3.2.1 Types of Shot: Framing

The cinematic language of filmmaking begins with the most fundamental element of an image: the shot type. The size of the recorded image primarily determines shot types compared to the camera's framing of the human head, encompassing the area from the lips to the forehead. This technique is employed to accentuate the subject's emotions. It has been primarily adapted from those found in cinematographic grammar according to the established conventions of the traditional film language [33], which asserts that the subject's size and the overall size of the frame determine the type of shot made. The dimensions of the recorded image are contingent upon the distance between the camera and the subject and the focal length of the lens utilized in capturing the shot. The resulting image will be more significant when the camera is positioned near the subject. Conversely, the image will be more significant when the lens has a longer focal length. The inverse is also true: when the camera is situated at a distance from the subject, the image will be smaller, and when the lens is of a shorter focal length, the image will be smaller. The emergence of drone technology has brought significant innovation to contemporary cinematography, particularly in the selection and execution of shot types. Traditional shot types, which are determined by camera distance and lens focal length, can be redefined through drones, which offer greater maneuverability and unique perspectives. Drones enable filmmakers to capture previously difficult shots, such as wide aerial views or dynamic tracking shots that closely follow a subject. This capability enriches creative framing beyond established cinematic conventions and expands the possibilities for incorporating traditional cinematographic language into filmmaking. A visual inspection of a sample of 193 drone shots revealed the existence of six distinct types of drone shot framing. This was achieved by applying a threshold measure on the width-to-height ratio of the subject, as observed in twelve Expedition Indonesia Biru documentaries. The results of this analysis are presented in Fig. 1.

The following section provides a detailed explanation of the verbal descriptions for the seven types of shot framing.

- *Extreme Long Shot* (ELS): An ELS shot is captured from a considerable distance with a specific height from the drone camera, rendering the subject indistinct. The objective is to showcase a location, its natural features, or the broader context of the surrounding environment. This is frequently called an 'establishing shot' in other contexts. The types of ELS shots recorded by drones in each of the Indonesia Biru Expedition Documentary films were identified as 21 shots. In general, an extremely long shot of a drone shot in the Expedition Indonesia Biru documentary depicts a large area from a great distance. It serves as a map presentation of the location. Fig. 1a depicts this example, presenting the 'big picture' of a location on the island of Timor, NTT, in the Boti Documentary. In its denotative meaning, a bridge can be seen crossing the Noel Mina River, with visible white

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sand and green hills in the background. In its connotative meaning, the Long Bridge spanning the Noelmina River is a vital access point for the community in their daily lives.

- *Very Long Shot (VLS)*: Abbreviated to VLS, the subject appears to be of a diminutive scale within the frame. The subject is barely discernible and situated far from the camera. The surrounding environment is depicted with greater prominence. A total of 113 distinct VLS shots recorded by drones were identified. An illustrative example is depicted in Figure 1b, which depicts a house encircled by forestland that will be transformed into a one-million-ha rice field clearing project in Kalimantan. The view in this drone shot contributes to the story's development by setting expectations about what has happened. Tension builds in a pattern and drives curiosity about how it will be resolved. Consecutive VLS drone shots are shown in segment 5, depicting the rice field clearing project.
- *Long Shot* (L.S.): The long shot encompasses the entirety of the scene. It describes situations considered necessary in the narrative, depicts the setting with greater detail, and is often called a "wide shot." The recorded image generally encompasses 20-40% of the frame width and height. Figure 1c provides an illustrative example of this phenomenon. It depicts a street scene in Palangkarya, Kalimantan, on October 20, 2015. The scene is enveloped in smoke due to forest fires, with poor air quality, which has a yellowish hue and impairs visibility. The documentary film *Ekspedisi Indonesia Biru*, utilizing the L.S. type, comprises 71 recorded shots. Aerial footage captured by a drone camera in shot 10 of the documentary "*Asimetris*" shows wide roads that were once considered a potential capital city. The changing colors indicate the level of smoke density, transitioning from white to murky and eventually yellowish, with limited visibility due to the polluted air. The changes in the drone's view are not due to a dirty lens or the pilot or documentary filmmaker's blurry vision from fatigue or lack of focus, but because Kalimantan is currently being hit by haze caused by forest and land fires. The fires not only bring smoke but also a clean water crisis. As one moves further west, the haze becomes thicker.
- *Medium Shot* (M.S.): M.S., which stands for 'medium shot' or 'waist shot', is used to describe a type of shot taken from a medium distance, resulting in a closer image than what would be achieved with a long shot. When the subject of the shot is a human, the M.S. will depict the subject from the waist up. The target generally occupies a maximum of 40-60% of the width or height of the video frame or frame. An illustrative example is provided in Fig. 1d, which depicts a foreground of luxuriant green palm trees. However, a coal-carrying barge in the background introduces an element of concern and threat.
- *Progressive Framing*: The term "progressive framing" is used with a specific type of drone shot. A shot in which the camera continuously records from the initial to the final position while in motion. In essence, two distinct shot sizes are evident within a single frame of a drone shot, contingent upon the distance between the drone camera and the target. A progressive drone shot employs a sequence of images that vary in size from one shot to the next. This can be observed in the combination of a long shot and a medium shot in *Sexy Killer* (Shot 17, Shot 19, and Shot 20), a medium shot and a very long shot in *Sexy Killer* (Drone Shot 27), and a very long shot and a long shot in the second drone shot in Boti.
- *Overhead*: The overhead shot type positions the drone camera perpendicularly downwards, directly above the subject. The camera remains steady and focused straight down, at an angle of approximately 90 degrees above the scene, aligning with the target's position directly below the drone. This angle is also commonly referred to as the bird s-eye view. The overhead shot is employed in two instances in the documentary film The Mahuzes. An illustrative example can be observed in Fig. 2 (e).

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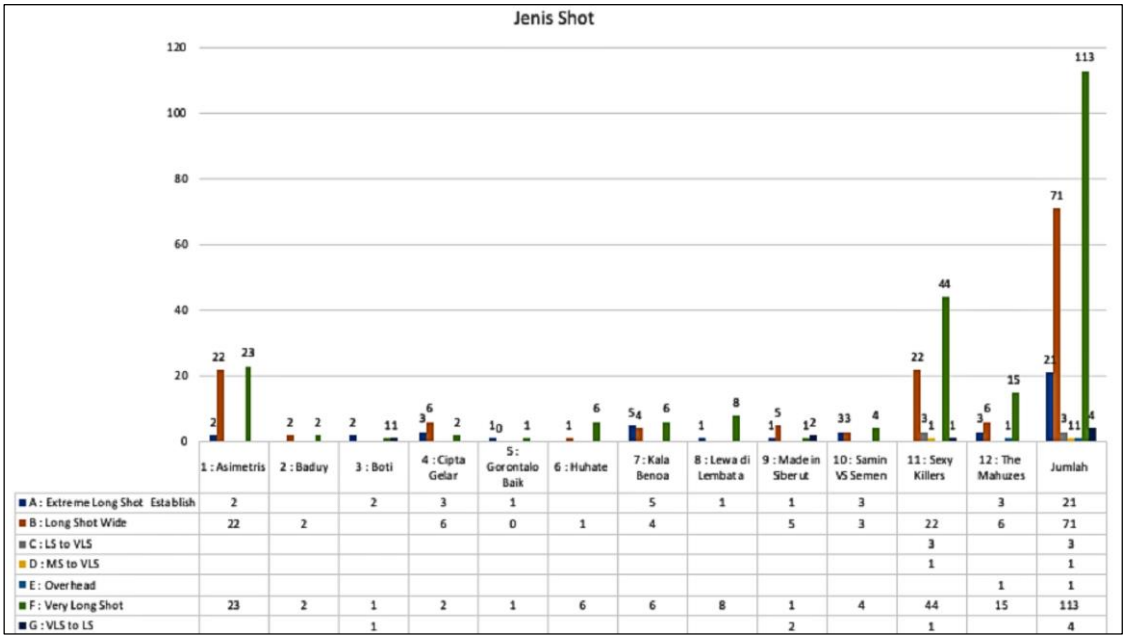

Fig 1. Total types of drone shots based on *framing* in the *Expedisi Indonesia Biru* Documentary

Accordingly, the drone shot types in the 12 documentary films of *Ekspedisi Indonesia Biru* are based on the framing variables that are most widely used. These variables include the very long shot vocabulary used in 113 shots, and the least used vocabulary type is the overhead shot, which is used in only one shot. The examination revealed that the vocabulary used in drone framing shots is consistent with the established conventions of traditional cinematography. The most notable distinction is how movement is captured from a height, a technique particularly prevalent in drone cinematography. Fig. 2 illustrates an example of a drone shot type employed in the documentary film *Ekspedisi Indonesia Biru*.

Fig 2. Types of drone shots are based on framing in the *Ekspedisi Indonesia Biru* Documentary Film. 1A shows an extremely long shot, 1B a very long shot, 1C a long shot, 1D a medium shot, and 1E an overhead (Source: YouTube Watchdoc Image)

3.2.2 Types of Shot: Camera Angle

'Camera angle' is defined as 'the area and point of view' [33]. The placement of the drone camera determines the extent of the area captured on screen, with the total area covered also dependent on the lens's focal length. This is summarised from the vantage point from which the audience witnesses the event. The term 'camera angle' is often used to describe the viewpoint from which a drone camera records a particular image. The two factors that determine the angle of view of a drone camera are based on the resulting area and the point of view of the drone camera towards the subject. In addition to these factors, options for determining the drone camera's point of view were selected according to conventional cinematography guidelines.

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This resulted in the identification of a vocabulary of drone camera viewpoints. *Expedisi Indonesia Biru* documentary films comprise two camera angles that may be classified as new cinematographic vocabulary, as illustrated in Table 2. Table 2 shows two camera angles of drones found in 193 drone shots from the Blue Indonesia Expedition documentary, classified based on camera position as findings of new vocabulary in drone cinematography. In the documentary *Ekspedisi Indonesia Biru*, Vertical and Panoramic views represent an innovative approach to drone cinematography. The drone angle with a "Vertical" camera position was used in 12 shots in the twelve documentary films of the *Ekspedisi Indonesia Biru* to reduce our understanding of the environment from a height and open up space to unravel the relationship between the view from above and the view from below.

The presentation of vertical drone shots has the relationship between the earth and the sky in response to environmental issues more critically and reflectively, which can lead to action or symbols of resistance against the problems faced. On the other hand, the drone view called "Panoramic" dominates the shots in the twelve documentary films of *Ekspedisi Indonesia Biru*. In Panoramic, the technique of shooting from above highlights the impact of human activities on nature. By using an aerial perspective, the *Ekspedisi Indonesia Biru* documentary films clearly and comprehensively illustrate how the interaction between humans and the environment often has a destructive influence. Using a panoramic perspective in drone cinematography not only provides an aesthetic visual representation but also creates critical awareness of environmental conditions. By capturing images from above, the scale of changes caused by human activities, such as deforestation, becomes apparent. A total of 181 drone shots from a panoramic perspective were used to highlight the colors and textures of an event, accompanying the big picture of a location. In essence, the potential of panoramic views represented by drone shots in the documentary *Ekspedisi Indonesia Biru* encourages viewers to get to know nature.

Tabel 2. Types of drone shots are based on the *camera angle* in *Ekspedisi Indonesia Biru.*

Film Title	Panoramic	Vertical
Asimetris	44	3
Baduy	5	1
Boti	4	
Cipta Gelar	11	
Gorontalo Baik	2	
Huhate	7	
Kala Benoa	15	1
Lewa di Lembata	9	
Made in Siberut	9	
Samin VS Semen	9	2
Sexy Killers	43	4
The Mahuzes	23	1

- *Vertical*: The analysis of camera angles led to the identification of twelve distinct viewpoints, collectively termed the 'Subjective Vertical', which represent a novel vocabulary of drone shots observed in the twelve documentary films of *Ekspedisi Indonesia Biru*.' verticality' describes a drone's capacity to capture images from a perpendicular angle (90°), with the camera positioned at the top and oriented towards the Earth's surface. Vertical viewpoints derive from the *'God's Eye View*', an omniscient and omnipotent perspective based on Judeo-Christian discourse. This concept has historically been associated with the panoptic surveillance of power dynamics [35]. In contrast, the subjective perspective treats the camera as the eyes of the audience, thereby placing them inside the scene. In other words, the audience actively participates in the events they witness, experiencing them as if they were personally involved. The vertical view is employed in drone cinematography to reduce the understanding of the everyday environment. This creates an opportunity to examine the relationship between the view from above and the surveillance system from below. This implies that the vertical viewpoint enhances the visual field by establishing abstractions and visual patterns regarding the types of elements to be presented. It has the potential to reframe the relationship between the ground and the sky, construct illusions that transcend the

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hierarchy of familiar visual vocabulary, and establish alliances between previously unobserved forces to provide opportunities for reactions to symbols of resistance. Fig. 3, taken from screenshots of drone shots in the documentary *Ekspedisi Indonesia Biru*, exemplifies those above vertical drone shots: *Samin VS Semen*, *Sexy Killers*, and *Asimetris*.

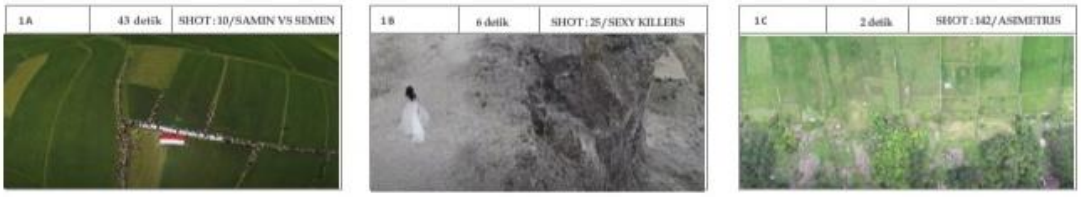

Fig 3. *Vertical Views from* a drone shot in documentary film *Ekspedisi Indonesia Biru (Source: Youtube Watchdoc Image)*

The image taken using a drone in Fig. 3 (a) (far left) reflects the relationship between agricultural land and demonstrations by the Kendeng community expressing their opposition to the construction of a cement factory. From this angle, the green and winding rice fields are crowded with farmers, who symbolically carry red and white flags while unfurling a large banner reading "*Tolak Pabrik Semen di Jawa*." Shifting attention to such visual elements creates an unusual and confrontational perception of the otherwise peaceful agrarian backdrop. The vertical angle, with the camera pointing downward, creates a powerful visual effect that emphasizes the fragility of the human position amid the larger landscape. From this perspective, the physical size of the demonstrators appears extremely small and fragile, not only reflecting their physical condition but also highlighting their vulnerability to environmental factors and the threats of development that may not be immediately apparent from a human eye level. This cinematic phenomenon carries implications for discourse on local resilience and the struggle of communities to preserve their livelihoods in the face of large-scale development projects. Furthermore, this image demonstrates how drone technology can enrich narratives, offer insights into the interaction between humans and the environment, and raise awareness of the potential ecological and social impacts of development policies. Thus, this vertical image is not merely a visual representation, but also serves as a medium for revealing the complexity of social and environmental issues the community faces. Taking vertical *drone* shots creates a new way of seeing things that have never been seen before. It only takes a few seconds to realize what can be seen from the *drone* footage as a form of resistance by the Samin community against the cement corporation. Another example illustrates how using a drone camera angle can create a strong contrast between different elements in a scene. The 25th drone shot from the film "*Sexy Killers*" (center image) shows a tourist wearing a white dress in Karimun Jawa, contrasting with the damage to the surrounding coral reefs. This contrast not only creates a dramatic visual but also highlights a serious environmental issue: the destruction of the marine ecosystem. By showcasing the human element in a beautiful setting amidst destruction, this shot invites reflection on the impact of human activities on the environment around Tanjung. Furthermore, in the 42nd drone shot of the documentary *Asimetris* (right), the presentation of irregular shapes, colors, and contours creates a juxtaposition between intimacy and chaos caused by the transformation of agricultural land into palm oil plantations. This shows how land use change can alter a landscape's sensory perception, while highlighting the social impact of environmental issues. The vertical aerial perspective of drones highlights the contrast between human vulnerability and the intimidating landscape, effectively depicting the suffering of marginalized communities, such as the Kendeng community fighting against industrial expansion. The distinctive composition of the images and camera movements can trigger strong emotional reactions by revealing striking contrasts, such as green rice fields contrasting with the threat of industry in the background. Additionally, the camera position influences viewers' perceptions, shifting focus from individual human experiences to broader ecological issues. Techniques like a downward angle emphasize the threats agricultural landscapes face, drawing attention to the environmental impact

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of projects such as cement factories. This approach captures a narrative linking human existence to ecological stability, fostering a deeper understanding of the dynamics at play. Consequently, the drone's vertical view, a perpendicular view from top to bottom as the viewer's eye, presents an opportunity to challenge the conventional relationship between verticality and power control systems. This enables the formation of an alliance between power and visibility characterized by constant reaction, redistribution, and resistance [36]. This contradicts Hollman's [37] assertion that drone users tend to favour a top-down cinematographic vocabulary when recording drone images. This is because it reveals an order of shapes, patterns, and relationships from the surface that is difficult or impossible to achieve. However, as Seno notes, standardization in the film has yet to be fully officialized. This is partly due to the continual emergence of new linguistic approaches that challenge the prevailing norms of film language [29]. The subjective knowledge generated by drone-generated shots has the potential to reveal new functions, roles, meanings, and relationships between objects, individuals, and communities. This offers new insights into geographical landscapes and generates narratives about everyday environments. Vertical views are also perceived as more aesthetically pleasing than other drone visuals, drawing attention to the recorded landscape's rich colours, patterns, and textures. Pink [38] posits that visual images attain meaning through the subjective gaze of the viewer, shaped by personal experience, knowledge, and broader cultural discourses. However, vertical views deliberately challenge these meanings, reducing landscapes to identically flat two-dimensional projections with beautiful resolution capabilities [39]. Therefore, the vertical viewpoint can be the starting point for comparing geographical spaces for documentary film production and contribute new vocabulary, especially for drone cinematography.

- *Panoramic*: The drone views, designated Panoramics, were predominantly captured by drones in the 12 documentaries of *Ekspedisi Indonesia Biru*. These provided a cinematic experience and concentrated attention on the impact of human activities on nature from an aerial perspective. The 181 drone shots from this perspective were primarily employed to emphasize the colours and textures of an event while simultaneously contextualizing it within the broader landscape of the location in question. In essence, the potential of a panoramic view in the drone-generated documentary expedition of Indonesia Biru is to encourage familiarity with the natural environment. *Panoramic* can be defined as mastery over the scenery, which implies a direct connection with the natural world [40]. The term 'objective' suggests that the audience observes the events taking place from the perspective of a hidden observer, akin to the eyes of a thief taking a glance. The ability demonstrated by a panoramic view from the air reflects the dynamic between humans and nature. Fig. 4 presents three examples of panoramic shots captured by drone cameras in Boti, Huhate, and Kala Benoa films. These shots are designed to enhance the visual experience of the audience. Fig. 4 (a) (far left) depicts the initial drone shot in the opening sequence, structured similarly to the subsequent shots in the documentary series. This view depicts the bridge with a diagonal composition that emphasizes the depth perspective of the location.

Fig 4. Panoramic View from a drone shot in a documentary film, *Ekspedisi Indonesia Biru* (Source: YouTube Watchdoc Image)

The composition is uncluttered and straightforward, facilitating the comprehension of the image's meaning. The diagonal structure of the line of sight directs attention towards the bridge, which serves as a conduit to the traditional Boti kingdom. The right side of the

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bridge is situated within the village of Boti Luar, a settlement of 1,200 inhabitants that remains culturally and politically aligned with the kingdom. Fig. 4 (b) (centre) depicts the picturesque village of Tomalou on Tidore Island in North Maluku, characterized by the fertility of the surrounding area, which is intersected by mountains and the ocean. In this exotic location, the drone shot progresses, exploring the area with a sharp focus. Fig. 4 (c) (far right) represents two contrasting narratives: on the one hand, the reclamation of land and, on the other, the promotion of tourism. These two events are presented as triggers for the resistance to development that is perceived to marginalize residents. From the depicted example, the panoramic view is a route that guides the audience's gaze. It is evident how the audience is expected to perceive, traverse, and comprehend the scene. In this manner, the Panoramic becomes a scene and a mise en scène that incorporates all the scene's elements into one unit, revitalizing geography and emphasizing the power of nature. This creates an alternative interpretation of the landscape on display, even transforming a seemingly ordinary scene into a spectacular one.

3.3. New Vocabulary for Cinematography Drone

The results of the review of new vocabulary in drone cinematography in the twelve documentary films of *Ekspedisi Indonesia Biru*, obtained from an analysis of the framing and camera angles, demonstrate the existence of diverse approaches to perceiving reality. Consequently, rather than viewing drone shots as a medium of control, it is possible to perceive them as a means of facilitating the generation of novel visual perspectives through aesthetic alterations and experiences or the observation and experience of what has been seen and experienced. This implies that vertical images can be subjective and Panoramics objective, thereby creating a synesthetic space that may facilitate comprehension of unfamiliar environments through abstraction and striking visual patterns, which in turn expand the visual senses even beyond the hierarchy of visual orientation in general. Negative perceptions of contemporary drone culture are perpetuated in film production as a result of the pervasive portrayal of military drone strikes and reconnaissance activities in the media, which associate a vertical view of drones with notions of air supremacy, air defence, and human annihilation [41].

The new vocabulary in drone cinematography, which comprises "vertical" and "Panoramics", presents a dense material encounter between technology, imagery, and the environment. This encounter directly reveals the environment's geographical secrets while generating unexpected new perspectives. This interaction reveals the geographical secrets of the environment and generates unexpected new perspectives. Mikkola asserts that drones can transform from panoptic instruments into visual material creators [42]. This perspective generates a new perception that foregrounds the drone as a collector of complex material from the sky and emphasizes the successful realization of objectivity and subjectivity about the environment. Consequently, the conjunction of disparate visual elements, captured from an aerial perspective and incorporated into the cinematic lexicon, constitutes a lexicon that can be accounted for under the pretext of how to see, given that vision is contingent upon the knowledge possessed, thus providing control over what Haraway terms 'God's tricks' [43].

4. Conclusion

Drone technology has created a cinematographic language that emerges from the productive and creative interaction between humans and machines. The demand for drone technology in documentary film production has developed the shooting techniques necessary for a new vocabulary of cinematography. This study pays special attention to several variables that shape the meaning of shot types, namely framing and camera angle, while comparing existing cinematographic vocabulary, basic principles, and practices, and exploring the discovery of new vocabulary. Analyzing 193 drone shots in the twelve *Ekspedisi Indonesia Biru* documentary films reveals several important findings. First, two new vocabulary words were found in the drone camera angle variable: Vertical and Panoramic. Vertical means producing a view straight down from above, which can be an extension of the human eye in perceiving space under the control of power, thus allying with power and visibility that continuously react, redistribute, and resist.

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Meanwhile, Panoramic in drone cinematography provides an aesthetic visual image and creates critical awareness of environmental conditions. By capturing images from above, the scale of changes caused by human activity can be recognized. Second, in the variable of framing based on size and distance, the language of drone cinematography still refers to existing cinematographic grammar practices that have been established in a global consensus. The striking difference lies in the height of the camera position, which has become a distinctive visual style of drone cinematography. At this point, aerial cinematography has transformed the functionality offered by drone technology in recording events. An ideal scenario has emerged, and documentary filmmakers must have a clear and systematic understanding of the vocabulary in drone cinematography before beginning the recording process. Further research is needed to develop drone technology to bring about new linguistic endeavors, especially from the perspective of camera movement, which challenges the dominance of existing film language. In the future, drone technology will involve more artificial intelligence algorithms to improve real-time camera movement maneuvers and add non-human factors such as energy efficiency, collision avoidance, flight restrictions, and increased bandwidth.

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