

## Prelude to Visual Markers and User Experience on Extremist Youtube Videos

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**Abstract:** Social media has been said to provide new ways for extremist to communicate and reach audiences across the world. There are many videos related to extremist available via YouTube which can be referred as 'extremist YouTube video's. The production of the videos are said to be carefully crafted with visual markers that make them easily being identified and capable to psychologically move the viewers. However, little investigation has been done to investigate how the visual markers affect psychological feeling or emotion of the viewers. This study will report on synthesis of past literature on extremist videos and a survey using some set of common visual markers to 151 respondents aged 15-45 years to assess how it affects their emotional responses. Findings show most respondents agree that they would be able to identify the videos through certain visual markers. It is also agreeable that upon viewing they might get emotional and those videos should be removed considering the repercussion from having exposed to it. Nonetheless, there are handful of them who still want to revisit the video which sends an alarming call to action for the widespread of the videos to be curbed. The finding is far from giving definite solution, however, provides insights to policy makers and other stakeholders to the rising concern of the need to have control mechanism for prevention and risk management.

**Key words:** Videos, extremist, user experience, visual markers, YouTube, audiences

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### INTRODUCTION

The extremists, especially, those in groups are becoming tech-savvy, having their own media arm to invade social media. YouTube, Twitter and Facebook are among popular ones been swarmed by them as medium to spread propaganda, recruitment and do other illicit online activities (Chen *et al.*, 2011). The traction is not a surprise since publishing content through social media relatively inexpensive, provides anonymity and able to reach huge audiences compared to conventional approaches (Sabbah and Selamat, 2015). Furthermore, it affords for multimedia-rich content potentially reaching audiences across the world with little to no regulation.

Videos related to extremist groups being broadcasted on YouTube for example are usually dense with information. Previous research on extremist videos found those video clips were capable to convey very impressive messages. The production of impressive messages is usually embedded with visual markers that make those videos identifiable. For example, all-black colour uniform, banner with Arabic script and explosion at mosque are few visual markers often associated with militant Islam. Additionally, those videos found to be action oriented where the actions potentially were very violent (Rieger *et al.*, 2013).

YouTube community guideline does not permitted post that contains violent or gory content which intended to be shocking, sensational disturbing or disrespectful. Despite the guideline and administrative efforts, there are huge archives of malicious and offensive videos (Agarwal and Sureka, 2014). The openness nature of YouTube where users are allowed to recast and share without pre-publishing censorship exacerbates policing activities. Furthermore, YouTube relies on feedbacks from users prior to removing videos that violate the rule. As the result, many of such videos remain online if there is no 'flag request' by users requesting for further action.

The extremist groups who produce videos compact with impressive messages intend to provoke the interest of potential new members, supporters and sympathizers particularly the young adults (Cheong and Halverson, 2010). These are the people who heavily utilizing the Internet including social media such as YouTube to learn and obtain information (Kerdvibulvech, 2015). They could easily fall prey to the message by the extremist. In the London bombing incident in 2005, one of the bombers who were in between age 18-30 years old claimed to have been influenced by the extremist agenda after watching video footage and reading some materials on the Internet. There are something in the content of the video seems able to impress the viewers psychologically.

In Malaysia, Malaysian Communications and Multimedia Commission (MCMC) described in its website (<http://www.skmm.gov.my>), content provision in the Internet, bounds by relevant laws. In addition, depending on the content, enforcement agencies such as MCMC and Royal Malaysian Police (RMP) are among those who are responsible to take further action against reports on offensive content. Policing activities by the enforcement agencies alone are rather difficult for larger scale, since, there is no active monitoring or filtering in general for such content. Besides, not all contents uploaded can simply be blocked because this can adversely affect other contents for other users. Therefore, if it is not a public priority, community policing can be a good practice to help the situation. In fact MCMC do encourage the public to lodge report for accounts which flouted the terms and conditions of their use.

This study will report on synthesis of past literature and subsequent preliminary study conducted as part of the efforts to demonstrate the rationale of undertaking further research.

#### **Literature review**

**Extremist YouTube videos:** A prominent dictionary, Oxford Dictionaries (2015) have the term ‘extremist’ defined as a person who holds extreme political or religious views, especially, one who advocates illegal, violent or other extreme action. Studies on online activities of the extremists found different canonical term such as Jihadi or radical Islamist, hate group and right-wing extremists. There are also studies that particularly named the extremists for group such as Patani Militant and Uyghur Nationalist Movement. Others do not explicitly describe any individuals or groups in their research. However, these studies often associating extremists directly with Islam since most activities of that nature nowadays carrying Islamic symbol. Nevertheless, there are also researchers who view extremism as psychological problem rather than religion centred (Sauffiyan and Lokman, 2013).

At closing of the summit on Counter Violent Extremism 2015, President Obama gave a lengthy defence to not link extremism with Islam and that no specific religion should be responsible to it. Trying to define extremists or its similar counterpart can be controversial, since different people and countries see it differently (Sauffiyan and Lokman, 2013; Ahmad and Yunus, 2012). The term extremist used in this study is inspired by the definition from Department of Homeland Security, United States (DHS., 2015). However the context is adjusted to suit this research as not to bias just on Islamic centric. In this study, the extremist refers to groups or individuals

who are motivated by either religious or political ideology and they do show support or commit violence. YouTube description on violent content and MCMC content code being referred to derive the essence of violence demonstrated in the YouTube videos. The violence can occurs through outrages acts of terrorism, war or human conflict. Furthermore, the act of violence refers to any act that deems dangerous to human life or potentially destructive of infrastructure or resources. This includes imageries of excessive torture, injury, aggression and of blood.

For the purpose of this study, the operational definition of ‘extremist YouTube video’ is YouTube video related to groups or individuals who manifest political or religious ideologies which advocate extreme and violent acts in the context of terrorism, war or human conflict and/or exhibit danger to human life or destruction of infrastructure or resource. The extremist YouTube videos vary in language, size, format and purpose.

Figure 1 shows one example of extremist YouTube video. Winkler and Dauber (2014) commented on the videos produced by the groups often can be characterized with use of symbol or visual identity to prove authenticity of the product. The videos are typically embedded with powerful messages impelling upon persuasive action, vivid images and sound to reach viewer’s emotions. Reid (2009) analysed 60 videos and found violent acts category contributed to the largest number of videos. The plots may range from brutal beating, violent protest, killing and other extreme action based.

**Visual markers:** Seeing through visual environment contains much more information than an individual is able to perceive at once. One way to optimize treatment of the visual environment is the visual attention which attracted to part with the most informative, surprising or maximizing reward pertaining a task (Borji and Itti, 2013). Violent attack such as terrorising, bombing and killing are among



Fig. 1: Action-based extremist YouTube video

interesting part of video clip often can be found in extremist YouTube videos (Winkler and Dauber, 2014; Vergani and Zuev, 2011). The use of violent by the extremists in video formats to captivate viewers worldwide are increasing disturbing phenomenon (Chen, 2011). Interesting part of the video clip that calls for visual attention can be referred as visual marker. A visual marker can also be a common visual motif in the visual content of the video that makes it identifiable (Andre, 2012).

Different extremist ideologies resulted in different video genres. This can be seen from the manifestation of symbols, geography and politics to people, weapons and warfare. In any way, there is a real danger an after-effect upon viewing those visual markers in which cannot be underestimated (Andre, 2012; Chen *et al.*, 2011).

**Emotionally provocative user experience:** Without the users who view the videos, neither genre, nor message can unfold any persuasive power. It is known that the sponsors for such videos are targeting to immerse the “Hearts and minds” of the viewers with ever-improving effort in favour to their benefit. It concerns the experience of the viewers upon viewing those videos. Since, the existence of visual markers as attention grabber and identity for the videos, therefore, it becomes an aspect of user experience. User experience is every aspect of user’s interaction with a product, service, or company that makes up the user’s perceptions of the whole. According to Partala and Kallinen (2012), user’s emotion is an important component of user experience.

However, user experience is subjective in nature. It is reliant on individual opinion with respect to the artefact. In the case of two users who view extremist YouTube video that shows an attack to a group of civilians, it could trigger a specific user experience per se for both of the viewers. One person may think the video is too violent while person B has totally opposite opinion. It is challenging to precisely understand individual opinion and thought due to the complexity of physiological and psychological processes (Shang, 2014). Interestingly from the viewpoint of social sciences, opinion is acquired through various learning experiences where much of it from “Social learning” including news from media sources and propaganda (Acemoglu and Ozdaglar, 2011). In that sense, peers from social network or those within same locality may have certain influence in formation of opinion for an individual.

## **MATERIALS AND METHODS**

### **Preliminary study**

**Rationale of conducting the study:** The main aim of conducting preliminary study was to confirm the existence

of phenomenon among YouTube users, thereby potentially leading to scope of the research. It was expected that opinion by users would indicate the abundance of extremist YouTube videos accessible through simple keyword search. Also, indication on agreement that these videos have visual markers embedded in it. Hence, it was concluded that first-hand input needed to be obtained from them with proper consideration. Based on the assumption that a web-based survey could be effective and efficient means of collecting anonymous responses while reaching wide distribution of respondents, the researchers developed one. The web-based survey had items derived from synthesized literature and observation of current happenings related to extremists YouTube videos. The quantitative outcomes of the survey are not intended to provide some representative and definitive picture about the phenomenon but they rather enable the authors to sketch a rough picture that provides input to future research.

**Organisation of the questionnaire:** The questionnaire used in the survey consisted of a brief introduction explaining its purposes followed by 12 questions including demographic.

The first four questions attempted to know users’ background. Respondents were first asked to provide age information and then gender. They were also asked to indicate their level of agreement with two statements, using a 5-point Likert scale (‘strongly disagree’, ‘disagree’, ‘neutral’, ‘agree’ and ‘strongly agree’). The statements were assessing if users like to browse videos on YouTube and that there are abundance of extremist YouTube videos available through a simple keyword search.

Question five and the next three questions formulated to assess anticipated users experience upon viewing the extremist YouTube videos. The statements were inspired by existence of visual markers in the visual content as well as the fact that the videos are produced to touch the ‘hearts and minds’ of the viewers. Two questions were presented in statements in which they had to choose multiple answers that apply from a given list. At the end of the list, respondents were given option to provide additional answers. The other two statements using a 5-point Likert scale.

The final four questions of the questionnaire were formulated in an attempt to gauge the need for solution to curb the widespread of extremist YouTube videos. All questions were presented in statements using a 5-point Likert scale.

**Survey administration and response:** The survey was implemented using Google Forms. It was administered in

**Table 1: Response patterns of both rounds**

Round	Invited	Fully responded	Partially responded
1	30	26	3
2	N/a	116	7
Total		151	10

two subsequent rounds but remained unchanged. The first was opened to anybody in personal networks who were invited to take part in the survey. The second round targeted to university students through faculty network which served as a promising venue to disseminate the survey to more appropriate group of younger respondents.

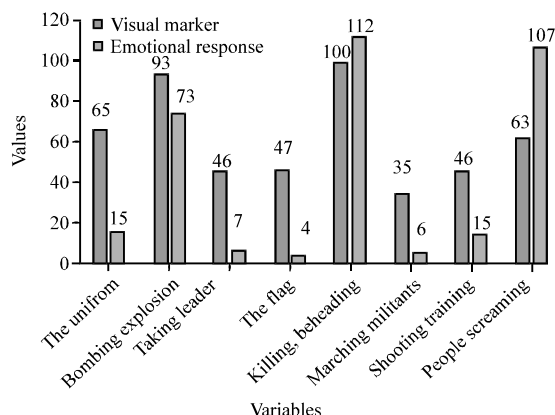
Table 1 shows the number of respondents in both rounds. The category ‘fully responded’ implies that the respondent answered all twelve questions whereas ‘partially responded’ denotes that the respondent answered some of the questions (e.g., skipped one or more statements, omitted background questions). As the survey opened to people who were interested, it is irrelevant to compute a response rate. From the total of 151 responses, 141 were usable while the other 10 were incomplete. The response rate was 93%.

**RESULTS AND DISCUSSION**

**Respondent’s background:** Altogether, 151 respondents filled in the survey completely or partially. Ninety-seven of them were female and 54 male. The median age was 26 years (range: 15-45). Total of 103 respondents (73%) at least agree to strongly agree with the statement that they like to browse YouTube videos. Similarly, 103 respondents (73%) agree and strongly agree to the statement that if they performed a simple keyword search for extremist YouTube videos, possibly many of the videos are available online.

In summary, the respondent’s age fall under the accepted range for young generation. These are the typical YouTube users who frequent the platform and may fall into the target of extremists with their illicit agenda through dissemination of extremist YouTube videos.

**Statements on user experience:** The two statements on user experience were about visual markers and emotional responses respectively. Similar sets of items were used for both statements. ‘Killing, beheading’, ‘Bombing, explosion’ and ‘the uniform’ were identified by the respondents as the top three items that made them knew it was an extremist YouTube videos (visual markers). ‘Killing, beheading’, ‘People screaming, chaotic situation’ and ‘bombing, explosion’ were the top three items that might cause them to feel emotional if they watched the extremist YouTube videos (emotional responses). From



**Fig. 2: Responses on user experience**

the additional answers provided by 4 respondents, besides visual markers they would know the video was related to extremist through the comments by other users, tagging and title of the videos. One respondent said “I read about extremist before I find the video. I don’t rely on their uniform”. Figure 2 shows the responses for the two statements on user experience.

In the past research, tagging, comments and title were among common textual features being used to identify the extremist videos (Chen *et al.*, 2011; Agarwal and Sureka, 2014). Advancing research area, non-textual features such as visual markers is a potential for research worthy. About 86 respondents (61%) agreed and strongly agreed to the statement that they might have different emotional feeling upon seeing different scene of the extremist YouTube videos. Depending on content and feeling developed as many as 60 respondents (43%) would still consider repeating watching the video or search for other similar videos, perhaps to find more information about related topics.

In summary, the extremist YouTube videos can be very potential in attracting the viewers’ attention so much that they will consider repeating watching. Generally, it is something worrying to the public at large considering the repercussion from exposure to the extremist materials.

**Statements on opinion for solution:** The 75 respondents (53%) either agreed or strongly agreed to the statement that extremist YouTube videos are hateful not suitable for public viewing and should be removed by the service provider or authorities. If they knew the video content not suitable or may have offensive content, 78 respondents (55%) would want to ‘flag the content’ and request for removal of the video. More than half of the respondents or 89 of them (63%) agreed and strongly agreed that a guideline on identifying those videos would be useful to

Table 2: Age, gender and video removal opinion

Videos removal	Age group						Grand total
	15-24		25-34		35-45		
	M	F	M	F	M	F	
Strongly disagree	3	1	1	4	3	2	14
Disagree	3	5	3	4	1	0	16
Neutral	8	16	4	7	0	1	36
Agree	2	5	6	12	1	4	30
Strongly Agree	4	9	9	17	2	4	45
Grand Total	20	36	23	44	7	11	141

M: Male, F: Female

Table 3: Cross tabulation of the statements

Count	Filtering solution					Grand total
	1	2	3	4	5	
Videos removal						
1	4	0	0	0	3	7
2	1	1	1	0	0	3
3	2	8	14	5	3	32
4	4	6	14	17	9	50
5	3	1	7	8	30	49
Grand total	14	16	36	30	45	141

1) Strongly disagree; 2) Disagree; 3) Neutral; 4) Agree; 5) Strongly agree

help them in deciding whether or not to flag the video and request for removal. The final statement had 99 respondents (70%) agreed and strongly agreed that a filtering solution could help to filter and reduce the widespread of the videos. Table 2 shows joint frequency distribution of age group with gender and statement on removal of the videos.

Majority of the respondents were from the age group 25-34 years. More than half of the respondents (75, 53%) were at least agreed and strongly agreed to the statement. However, the response pattern shows that younger age group of 15-24 years has high count (24) for being 'neutral'. As neutral means neither agree nor disagree, that may indicate their being care less in dealing with the situation. The researchers are also interested to know whether the statements are inter-related with regards to potential solution to this situation. From 4 statements formulated to gauge opinion for the solution, two statements were chosen to be analysed for this purpose.

Table 3 shows cross tabulation of the two statements on removal of the videos and the need for filtering solution to filter and reduce the chances of such videos being widespread. From 75 respondents who think that the extremist YouTube videos are not suitable for public viewing and should be removed, as many as 64 of them also agreed that a filtering solution may help to reduce the chances of such videos being widespread.

### CONCLUSION

With this survey, the authors have been able to systematically gather views on the nature of extremist

YouTube videos. The results show that respondents tend to agree on existence of visual markers. This corresponds with observation on past research about presence of common visual motifs or specific representation in extremist video content that makes it identifiable. Majority have similar opinion on which visual markers constitute extremist YouTube videos. This has positive inclination towards opinion dynamic and social learning where peers in social network may have influence in opinion formation.

The same set of visual markers was purposely used in the survey to determine emotional responses. Interestingly, respondents agree that upon viewing the visual markers, they might be emotional. This is consistent with the claim that extremist videos are produced to be impressive and capable to psychologically move the viewers. It is the novelty of this preliminary study attempted to relate between visual markers and potential emotional responses of the respondents.

Generally, it is agreeable that the extremist YouTube videos should be removed, especially, when considering the repercussion from having exposed to it. Even when admitting to agree with earlier statement, there are handfuls of which who still want to repeat watching the video. That is a call to action for the widespread of the videos needs to be curbed. The finding is far from giving definite solution, however, it is meant to shed some light for future research direction.

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### REFERENCES

- Acemoglu, D. and A. Ozdaglar, 2011. Opinion dynamics and learning in social networks. *Dyn. Games Appl.*, 1: 3-49.
- Agarwal, S. and A. Sureka, 2014. A focused crawler for mining hate and extremism promoting videos on YouTube. *Proceedings of the 25th ACM Conference on Hypertext and Social Media*, September 01-04, 2014, ACM, New York, USA., ISBN:978-1-4503-2954-5, pp: 294-296.
- Ahmad, R. and Z. Yunos, 2012. A dynamic cyber terrorism framework. *Intl. J. Comput. Sci. Inf. Secur.*, 10: 149-158.
- Andre, V., 2012. Neojihadism'1 and YouTube: Patani militant propaganda dissemination and radicalization. *Asian Secur.*, 8: 27-53.

- Borji, A. and L. Itti, 2013. State-of-the-art in visual attention modeling. *IEEE. Trans. Pattern Anal. Mach. Intell.*, 35: 185-207.
- Chen, H., 2011. *Dark Web: Exploring and Data Mining the Dark Side of the Web*. Vol. 30, Springer, Berlin, Germany, Pages: 450.
- Chen, H., D. Deming, N. Roberts, C.A. Larson and X. Yu *et al.*, 2011. The dark web forum portal: From multi-lingual to video. *Proceedings of 2011 IEE International Conference on Intelligence and Security Informatics*, July 10-12, 2011, IEEE, Tucson, USA., ISBN: 978-1-4577-0085-9, pp: 7-14.
- Cheong, P.H. and J.R. Halverson, 2010. Youths in violent extremist discourse: Mediated identifications and interventions. *Stud. Conflict Terrorism*, 33: 1104-1123.
- DHS., 2015. *Countering violent extremism*. The Department of Homeland Security., Southwest, Washington. <http://www.dhs.gov/topic/countering-violent-extremism>.
- Kerdvibulvech, C., 2015. An Innovative use of Multidisciplinary Applications between Information Technology and Socially Digital Media for Connecting People. *Proceedings of the 2nd International Conference on Multidisciplinary Social Networks Research*, September 1-3, 2015, Springer, Berlin, Germany, pp: 60-69.
- Partala, T. and A. Kallinen, 2012. Understanding the most satisfying and unsatisfying user experiences: Emotions, psychological needs and context. *Interacting Comput.*, 24: 25-34.
- Reid, E., 2009. Analysis of Jihadi extremist groups' videos. *Forensic Sci. Commun.*, Vol. 11,
- Rieger, D., L. Frischlich and G. Bente, 2013. *Propaganda 2.0: Psychological effects of right-wing and Islamic extremist internet videos*. Luchterhand, Munich, Germany.
- Sabbah, T. and A. Selamat, 2015. Hybridized Feature Set for Accurate Arabic Dark Web Pages Classification. In: *Intelligent Software Methodologies, Tools and Techniques*, Fujita, H. and G. Guizzi (Eds.). Springer, Berlin, Germany, pp: 175-189.
- Sauffiyan, A. and A.M. Lokman, 2013. The many facades of religious extremism: A theoretical investigation of the unsolved and recurring conflict. *Proceedings of the 2013 5th International Conference on Information and Communication Technology for the Muslim World (ICT4M)*, March 26-27, 2013, IEEE, Selangor, Malaysia, ISBN: 978-1-4799-0136-4, pp: 1-6.
- Shang, Y., 2014. Consensus formation of two-level opinion dynamics. *Acta Math. Sci.*, 34: 1029-1040.
- Vergani, M. and D. Zuev, 2011. Analysis of YouTube videos used by activists in the uyghur nationalist movement: Combining quantitative and qualitative methods. *J. Contemp. China*, 20: 205-229.
- Winkler, C.K. and C.E. Dauber, 2014. *Visual propaganda and extremism in the online environment*. Master Thesis, United States Army War College, Carlisle, Pennsylvania.